Explanation of a Course Listing

I. Course Heading Information

1102.01  Beginning French II Classroom  U  4

Course Number: 1102.01
Course Title: Beginning French II Classroom
Instructional Level: U

U = Undergraduate
G = Graduate
D = Dentistry
M = Medicine
L = Law
O = Optometry
P = Pharmacy
V = Veterinary Medicine

Credit Hours: 4

II. Main Course Description

Continued study of French; development of listening, reading, speaking, and writing skills; readings based on contemporary French culture and literature. Taught in French.

III. Course Attributes

Prereq: 1101.01, or completion of 4 cr hrs of 1101.51. Not open to students with credit for 102.01. This course is available for EM credit. GE for lang course. FL Admis Cond course.

Semester of offering (not displayed in example): Au, Sp Sems. Su Term.

Au = Autumn Semester
Sp = Spring Semester
Su = Summer Term

Prerequisite(s): 1101.01, or completion of 4 cr hrs of 1101.51.

The course number(s) or other information indicate the preparation or classification required to enroll in the course. If no department name is listed, the number(s) refers to the specific course within the same department. If a department name is listed, all course numbers following that name belong to that department name until another is listed (e.g., Math 1101, 1102, 1103, Chem 1101, and 1102). Enrollment in a course requires the successful completion of all prerequisites or their equivalents. The department, school, or college office should be consulted with questions of eligibility to take a course.

Exclusionary clause: Not open to students with credit for 102.01.

Students who have taken the listed courses or belong to any other categories listed in the exclusionary clause are not eligible to enroll in the course.

Repeatability clause (not displayed in example): Repeatable to a maximum of 10 cr hrs or 4 completions.

Indicates the maximum number of credit hours and/or the maximum number of completions a course may be repeated for credit (whichever limit is reached first).

Satisfactory/Unsatisfactory grading clause (not displayed in example): This course is graded S/U.

Indicates that a course is graded on an S/U basis rather than the standard letter grading system.

EM credit clause: This course is available for EM credit.

Indicates that a course is available for a type of exam credit.

GE clause: GE for lang course.

Indicates that the course may be used to meet one or many of the University's General Education requirements. Students should consult their specific college or adviser before scheduling courses to be applied to this requirement.

Admissions condition clause: FL Admis Cond course.

Indicates that the course may be used to fulfill an admission condition.

Cross-listing clause (not displayed in example): Cross-listed in English.

Indicates that the course is cross-listed with a course in another subject. The course shares a vast majority of its content with the cross-listed course, and instances of these courses are typically taught by the same instructor, in the same space, and at the same time during a semester. Courses usually share the same course number (in which case only the subject will be present in the clause), but where they do not, the number of the cross-listed course will be given.
University Classification and Course Numbering System

The system of numbering courses offered by the University is as follows:

1000-1099: Undergraduate non-credit courses for orientation, remedial, or other non-college-level experiences. These courses are in addition to a program’s graduation requirements.

1100-1999: Introductory, required or elective courses that may be prerequisite to other courses. They provide undergraduate credit, but do not count toward a major or field of specialization.

2000-2999: Intermediate courses providing undergraduate credit and may be counted toward a major or field of specialization.

3000-3999: Upper-level courses providing undergraduate credit that may be counted toward a major or field of specialization.

4000-4999: Advanced undergraduate courses providing undergraduate credit that may be counted toward a major or field of specialization. Graduate students may enroll in and receive graduate credit for 4000-level courses outside their own graduate program.

5000-5999: Courses that are regularly offered for both graduate and undergraduate credit. They are advanced-level undergraduate courses providing undergraduate credit that may be counted toward a major or field of specialization, or are foundational course work and research for graduate and professional credit.

6000-6999: Foundational graduate and professional courses and research providing graduate or professional credit.

7000-7999: Intermediate graduate and professional courses and research providing graduate or professional credit.

8000-8999: Advanced graduate and professional courses and research providing graduate or professional credit.

Editor: Emily Guthrie, Course Coordinator, University Registrar

Photo: Orton Hall Display, replica of Cryolophosaurus ellioti
Courtesy of University Communications

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### Academic Affairs

**1100.07 Office of Diversity and Inclusion Young Scholars**

**Program Seminar**

Workshops and course discussion designed to teach study strategies and engage students in personal development for college success. Instructors will help students incorporate new tools, resources, and strategies for greater academic engagement. Students will also participate in activities to increase confidence, personal awareness, and explore social constructs impacting their college experience.

Prereq: Young Scholars Program scholarship recipient.

**1101 Personal Financial Health Seminar**

Assist students with mastering the fundamental elements of personal finance and to help them make financially responsible decisions. Instructors will help students utilize learned skills to support their ability to manage their savings, scholarship awards and financial aid, and income to become financially independent, and to demonstrate financial success as an undergraduate and beyond.

Prereq: Enrollment in Young Scholars Program.

**2021 Diversity, Service and Social Justice: A Blueprint for Dynamic Leadership**

This course will expose students to the key elements and character traits that influence dynamic and successful leadership. In specific, students will learn that diversity, service and social justice are inextricably linked and fundamental to the development of an effective leader. Participants will engage in interactive activities and discussions led by the instructor and visiting lecturers.

### Accounting and Management Information Systems

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>1200</td>
<td>Survey of Accounting</td>
<td>1</td>
<td>An examination of the role of accounting in organizations and society, accounting fundamentals, careers in accounting and the professional skills required for success.</td>
</tr>
<tr>
<td>2000</td>
<td>Foundations of Accounting</td>
<td>3</td>
<td>A survey of accounting for non-business students; financial statements and analysis; accounting for assets, liabilities and owners' equity; and elements of managerial accounting. Prereq: Not open to students with credit for 2200 (211), 2300 (212), or 310.</td>
</tr>
<tr>
<td>2200</td>
<td>Introduction to Accounting</td>
<td>3</td>
<td>Preparation and use of accounting reports for business entities; focus on uses of accounting for external reporting, emphasizing accounting as a provider of financial information. Prereq: Econ 2001.01 (200), or equiv. Not open to students with credit for 2000 (310) or 211, or equiv. This course is available for EM credit.</td>
</tr>
<tr>
<td>2200H</td>
<td>Introduction to Accounting</td>
<td>3</td>
<td>Structure and use of financial reports; role of accounting and auditing in markets and organizations. Prereq: Honors standing, and Soph standing. Not open to students with credit for 211H.</td>
</tr>
<tr>
<td>2300</td>
<td>Introduction to Accounting</td>
<td>3</td>
<td>The uses of accounting reports by managers to make business decisions and to control business operations; focus is on the internal use of accounting information. Prereq: 2200 (211) and Econ 2001.01 (200), or equiv. Not open to students with credit for 2000 (310) or 211, or equiv. This course is available for EM credit.</td>
</tr>
<tr>
<td>2300H</td>
<td>Introduction to Accounting</td>
<td>3</td>
<td>Use of accounting information in management control, with ties to the economic theory of the firm. Emphasizes classroom discussion and student presentations. Prereq: Honors standing, and a grade of B or above in 2200H, and Soph standing. Not open to students with credit for 212H.</td>
</tr>
<tr>
<td>3100H</td>
<td>Quantitative Analysis in Accounting</td>
<td>3</td>
<td>Accounting information system applications of linear algebra are explored including a subspace representation of double entry accounting structure, a probability assignment description of a decision maker's uncertain state of knowledge, and Bayesian belief updating description of information processing including projections for the case of linear or Gaussian conditional expectations. Prereq: Honors standing, a grade of B or better in 2200H, and Soph standing. Not open to students with credit for 4780H.</td>
</tr>
<tr>
<td>3193</td>
<td>Individual Studies</td>
<td>1-6</td>
<td>Individual study projects in selected areas in Accounting and Information Systems. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 6 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>3194</td>
<td>Group Studies</td>
<td>1-6</td>
<td>Group study projects in selected areas in Accounting and Information Systems. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 6 completions.</td>
</tr>
<tr>
<td>3200</td>
<td>Financial Accounting I</td>
<td>3</td>
<td>Theory and application of accounting techniques to record and report financial information; asset and liability valuation; income measurement; first of two-course sequence. Prereq: 2300 (212), BusMgt 2320 (330), 2321 (331), BusMHR 2292 (BusAdm 499.01), and Jr standing; or permission of instructor. Not open to students with credit for 3200.02 or 521.</td>
</tr>
<tr>
<td>3200H</td>
<td>Financial Accounting I</td>
<td>3</td>
<td>Economic role of financial reporting in markets and how it is influenced by the regulatory environment. Prereq: Honors standing, and a grade of B or above in 2200H. Not open to students with credit for 519H.</td>
</tr>
<tr>
<td>3201</td>
<td>Financial Accounting II</td>
<td>3</td>
<td>Theory and application of accounting techniques to record and report financial information; asset and liability valuation; income measurement; second of two-course sequence. Prereq: 3200, 3200.02, or BusMHR 2292 (BusAdm 499.01); or permission of instructor. Not open to students with credit for 3200.02 or 523.</td>
</tr>
<tr>
<td>3201H</td>
<td>Financial Accounting II</td>
<td>3</td>
<td>Study of theory and practice of financial accounting. Prereq: Honors standing, and a grade of B or above in 2300H. Not open to students with credit for 520H.</td>
</tr>
<tr>
<td>3300</td>
<td>Cost Accounting</td>
<td>3</td>
<td>Managerial decision making in organizations on the use of financial data; theory and practice of management control. Prereq: 2300 (212), BusMgt 2320 (330), 2321 (331), and BusMHR 2292 (BusAdm 499.01); or permission of instructor. Not open to students with credit for 525.</td>
</tr>
<tr>
<td>3300H</td>
<td>Cost Accounting</td>
<td>3</td>
<td>Theory and practice of management control with emphasis on performance evaluation and reward. Prereq: Honors standing, and a grade of B or above in 2300H. Not open to students with credit for 525H.</td>
</tr>
<tr>
<td>3400</td>
<td>Tax Accounting</td>
<td>3</td>
<td>Fundamentals of the federal income tax, and how it influences taxpayer decisions. Emphasis is on the individuals and businesses organized as proprietorships, but rules generally applicable to all taxpayers are covered. Prereq: A grade of B or above in 2300H, or 3200 and BusMHR 2292.</td>
</tr>
<tr>
<td>3400H</td>
<td>Tax Accounting</td>
<td>3</td>
<td>Fundamentals of the federal income tax, and how it influences taxpayer decisions. Emphasis is on the individuals and businesses organized as proprietorships, but rules generally applicable to all taxpayers are covered. Prereq: Honors standing, and a grade of B or above in 2300H.</td>
</tr>
<tr>
<td>3600</td>
<td>Introduction to Accounting Information Systems</td>
<td>3</td>
<td>The design of accounting information systems; focus is on business processes and internal control. Prereq: 3200 or 521, and BusMHR 2292 (BusAdm 499.01); or permission of instructor. Not open to students with credit for 631.</td>
</tr>
<tr>
<td>3600H</td>
<td>Introduction to Accounting Information Systems</td>
<td>3</td>
<td>The design and control of accounting information systems. Prereq: Honors standing, and 3100H; or permission of instructor.</td>
</tr>
<tr>
<td>3601</td>
<td>Introduction to Information Systems</td>
<td>1½</td>
<td>The role of information systems in capturing and distributing organizational knowledge and enhancing management decision making, processing of redesigning organizations utilizing systems analysis and design, quality assurance, and change management techniques, technical foundation of information systems, including hardware, software, telecommunications, networks, and the information architecture. Prereq: Admission to BSSA program and Business Management specialization.</td>
</tr>
<tr>
<td>3610</td>
<td>Foundations of Business Information Systems</td>
<td>3</td>
<td>Technical foundation in programming interactive business information systems. Prereq: 2300 (212), CSE 2123 (214), BusMgt 2320 (330), 2321 (331), and BusMHR 2292 (BusAdm 499.01). Not open to students with credit for 532.</td>
</tr>
<tr>
<td>4193</td>
<td>Individual Studies</td>
<td>1-6</td>
<td>Individual study projects in selected areas in Accounting and Information Systems. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 6 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>4194</td>
<td>Group Studies</td>
<td>1-6</td>
<td>Group study projects in selected areas in Accounting and Information Systems. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 6 completions.</td>
</tr>
<tr>
<td>4200</td>
<td>Advanced Financial Accounting</td>
<td>3</td>
<td>Advanced topics in financial reporting; may include accounting for multi-corporate business entities, international operations, and government and not-for-profit organizations. Prereq: 3201 (523) or 3201.02, and BusMHR 2292 (BusAdm 499.01). Not open to students with credit for 624.</td>
</tr>
<tr>
<td>4210</td>
<td>Financial Statement Analysis</td>
<td>3</td>
<td>Methods of fundamental analysis will be examined in detail; improve ability to use financial statements as part of an overall assessment of a firm's strategy and valuation. Prereq: 3201 (523) and BusMHR 2292 (BusAdm 499.01). Repeatable to a maximum of 12 cr hrs.</td>
</tr>
</tbody>
</table>
### 2 Accounting and Management Information Systems

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<thead>
<tr>
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<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4220</td>
<td>Governmental and Non-Profit Accounting</td>
<td>3</td>
<td>U</td>
<td>Focuses on financial reporting concepts and standards for non-profit and governmental units, evaluation of performance and the analysis and interpretation of financial statements of selected non-profit and governmental organizations. Prereq: 3201 (523) and BusMHR 2291 (BusAdm 499.01).</td>
</tr>
<tr>
<td>4310</td>
<td>Topics in Management Accounting</td>
<td>3</td>
<td>U</td>
<td>Advanced topics in management control, strategic interactions within the firm. Students may not repeat topics. Prereq: 3300 (525) and BusMHR 2292 (BusAdm 499.01). Repeatable to a maximum of 6 cr hrs.</td>
</tr>
<tr>
<td>4410</td>
<td>Tax Accounting II</td>
<td>3</td>
<td>U</td>
<td>Intensive study of the federal income tax treatment of business corporations and partnerships, with particular attention to tax planning by these businesses and their owners. Prereq: 3400 (626) and BusMHR 2292 (BusAdm 499.01). Not open to students with credit for 636.</td>
</tr>
<tr>
<td>4500</td>
<td>Auditing Principles and Procedures</td>
<td>3</td>
<td>U</td>
<td>Basic concepts and standards of auditing; audit procedures and working papers, internal and external audit reports, professional responsibilities of auditors. Prereq: 3201 (523) and BusMHR 2292 (BusAdm 499.01), or permission of instructor. Not open to students with credit for 627.</td>
</tr>
<tr>
<td>4510</td>
<td>Fraud Examination</td>
<td>3</td>
<td>U</td>
<td>The course will cover all major methods employees use to commit occupational fraud involving the misappropriation of assets. Prereq: 3201 and 3600, or permission of instructor.</td>
</tr>
<tr>
<td>4620</td>
<td>Analysis and Design of Management Information Systems</td>
<td>3</td>
<td>U</td>
<td>Investigation and application, through real-world projects, of concepts and tools used in the design and development of management information systems. Prereq: CSE 3232 (616), BusMgt 2320 (330), 2321 (331), and BusMHR 2291 (BusAdm 499.01). Not open to students with credit for 651.</td>
</tr>
<tr>
<td>4650</td>
<td>Decision Support and Expert Systems</td>
<td>3</td>
<td>U</td>
<td>Study of computer-based systems designed to support decision-making within the organization. Prereq: CSE 3232 (616), BusMgt 2320 (330), and 2321 (331). Not open to students with credit for 657.</td>
</tr>
<tr>
<td>4660</td>
<td>Electronic Commerce</td>
<td>3</td>
<td>U</td>
<td>Examination of technical, managerial, and strategic issues that surround the emergence of electronic commerce on the Internet. Prereq: 3610 (532) or CSE 3241 (670), and BusMgt 2320 (330), 2321 (331), and BusMHR 2292 (BusAdm 499.01). Not open to students with credit for 658.</td>
</tr>
<tr>
<td>4670</td>
<td>Information Systems Planning &amp; Management</td>
<td>3</td>
<td>U</td>
<td>Planning and management of the information system function in business organizations with emphasis on the problems involved. Prereq: CSE 2123 (214), BusMgt 2320 (330), 2321 (331), and BusMHR 2292 (BusAdm 499.01); or Sr or Grad standing. Not open to students with credit for 659.</td>
</tr>
<tr>
<td>4780</td>
<td>Accounting Research and Practice</td>
<td>3</td>
<td>U</td>
<td>Researching accounting concepts and standards underlying corporate and non-corporate financial statements including consideration of typical accounting problems. Prereq: 3201 and BusMHR 2292. Not open to students with credit for 628.</td>
</tr>
<tr>
<td>4780H</td>
<td>Accounting Research and Practice</td>
<td>3</td>
<td>U</td>
<td>Researching accounting concepts and standards underlying corporate and non-corporate financial statements including consideration of typical accounting problems. Prereq: Permission of Honors Accounting Director. Not open to students with credit for 628H.</td>
</tr>
<tr>
<td>4784</td>
<td>Tax Research Seminar</td>
<td>3</td>
<td>U</td>
<td>Case studies requiring an in-depth examination of the tax aspects of situations frequently encountered by businesses and individuals. Prereq: A grade of B+ or above in 3400, or permission of instructor.</td>
</tr>
<tr>
<td>4998</td>
<td>Undergraduate Research in Accounting and MIS</td>
<td>1 - 3</td>
<td>U</td>
<td>Undergraduate Research in Accounting and MIS for non-honors students. Prereq: Permission of Program Director. Repeatable to a maximum of 12 cr hrs or 4 completions. This course is progress graded.</td>
</tr>
<tr>
<td>4998H</td>
<td>Research</td>
<td>1 - 4</td>
<td>U</td>
<td>Special topics research in accounting and/or management information systems; research evaluated through papers, thesis, and/or special examinations. Prereq: A grade of B+ or above in 3201H, or permission of Honors Accounting Director. Not open to students with credit for 738H. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is progress graded.</td>
</tr>
<tr>
<td>5000</td>
<td>Accounting and Cost Analysis</td>
<td>3</td>
<td>U</td>
<td>An introduction to accounting and cost analysis for planning, decision-making, and control. Prereq: ISE 2000 (500) and 2040 (504), or enrollment in MBLE program. Not open to students with credit for 801.</td>
</tr>
<tr>
<td>5200H</td>
<td>Honors Advanced Financial Accounting</td>
<td>3</td>
<td>U</td>
<td>Advanced topics in financial reporting including accounting for multi-corporate business entities, international operations, and other topics. Prereq: Honors standing, and a grade of B+ or above in 3201H; or permission of Honors Accounting Director. Not open to students with credit for 624H.</td>
</tr>
<tr>
<td>5500H</td>
<td>Honors Auditing Principles and Procedures</td>
<td>3</td>
<td>U</td>
<td>Basic concepts and standards of auditing; audit procedures and working papers, internal and external audit reports. Prereq: A grade of B+ or above in 3201H (522H), or permission of Honors Accounting Director. Not open to students with credit for 627H.</td>
</tr>
<tr>
<td>6000</td>
<td>Management &amp; Control</td>
<td>2½</td>
<td>G</td>
<td>Fundamental role of uncertainty, risk and private information in accounting; emphasis on management decisions and control problems in organizations. Prereq: Enrollment in Master of Accounting Program. Not open to students with credit for 603.</td>
</tr>
<tr>
<td>6001</td>
<td>Fundamentals of Accounting Data &amp; Analytics</td>
<td>2½</td>
<td>G</td>
<td>Provides an introduction to using large datasets to better understand corporate financial reporting and market behavior. Prereq: Enrollment in Master of Accounting Program.</td>
</tr>
<tr>
<td>6200</td>
<td>Financial Reporting</td>
<td>2½</td>
<td>G</td>
<td>Examination of major aspects of corporate financial reporting by management under GAAP, including coverage of disclosures required for trade securities, tax aspects of mergers and acquisitions, auditing, and financial analysis. Prereq: Enrollment in Master of Accounting Program. Not open to students with credit for 7200.</td>
</tr>
<tr>
<td>6201</td>
<td>Professional Research in Accounting</td>
<td>1½</td>
<td>G</td>
<td>Research and communication skills in a professional accounting context; learn to use various accounting information resources; enhance communication and teamwork skills through collaborative exercises. Prereq: Enrollment in Master of Accounting Program. Not open to students with credit for 804.</td>
</tr>
<tr>
<td>6202</td>
<td>Accounting Policy &amp; Research</td>
<td>2½</td>
<td>G</td>
<td>Provides students the opportunity to develop their knowledge and appreciation of current debates surrounding the accounting profession. They will be exposed to academic research in accounting and the primary underlying methods involved. Prereq: Enrollment in Master of Accounting Program. Not open to students with credit for AcctMIS 844.</td>
</tr>
<tr>
<td>7010</td>
<td>Ethical Challenges in Accounting and Business</td>
<td>1½</td>
<td>G</td>
<td>Provides students with an understanding of ethical challenges facing accounting and business professionals. Prereq: MBA 6211 (800), or enrollment in MAcc program.</td>
</tr>
<tr>
<td>7020</td>
<td>Uncertainty, Diversification, and Private Information</td>
<td>1½</td>
<td>G</td>
<td>Focuses on role of uncertainty, risk aversion, and private information in decision making. The course utilizes the expected utility paradigm to study topics of portfolio diversification, CAPM, option pricing, incentive design, information cascades, and signaling theory. Prereq: Enrollment in Fisher College Grad Program.</td>
</tr>
<tr>
<td>7193</td>
<td>Individual Studies</td>
<td>½ - 8</td>
<td>G</td>
<td>Individual studies in Accounting and Information Systems. Prereq: Enrollment in the AcctMIS PhD program, or permission of instructor. Repeatable to a maximum of 12 cr hrs or 4 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>7194</td>
<td>Group Studies</td>
<td>½ - 3</td>
<td>G</td>
<td>Group studies in Accounting and Information Systems; topics vary. Prereq: MBA 6221 (800), or enrollment in MAcc program. Repeatable to a maximum of 12 cr hrs or 4 completions.</td>
</tr>
<tr>
<td>7200</td>
<td>Corporate Financial Reporting I</td>
<td>1½</td>
<td>G</td>
<td>Examination of major aspects of corporate financial reporting. Prereq: 6050 or MBA 6211. Not open to students with credit for 6200 (824).</td>
</tr>
<tr>
<td>7220</td>
<td>Financial Statement Analysis</td>
<td>1½</td>
<td>G</td>
<td>Examines the role of financial statement analysis in the evaluation of the firm's financial performance and the prediction of its future economic condition. Prereq: MBA 6211 (800), or enrollment in MAcc program. Not open to students with credit for 842.</td>
</tr>
<tr>
<td>7221</td>
<td>Financial Statement Analysis II</td>
<td>1½</td>
<td>G</td>
<td>Examines additional techniques to evaluate the firm’s financial performance and the prediction of its future economic condition based on financial statements. Prereq: 7220, or permission of instructor. Not open to students with credit for 842.</td>
</tr>
<tr>
<td>7230</td>
<td>Accounting for Mergers and Acquisitions (and other Complex Transactions)</td>
<td>1½</td>
<td>G</td>
<td>Designed for students whose careers will require an expert understanding of advanced accounting and reporting concepts regarding complex financial transactions. Prereq: Not open to students with credit for 841.</td>
</tr>
<tr>
<td>7240</td>
<td>International Financial Reporting Standards</td>
<td>1½</td>
<td>G</td>
<td>Students will learn the guiding principles behind international reporting standards. They will also learn areas of commonalities and substantial divergence between U.S. GAAP and IFRS. Prereq: 6200 or 7200. Not open to students with credit for 849.</td>
</tr>
</tbody>
</table>
7250 Governmental and Non-Profit Accounting G 1%  
Focus is on financial reporting concepts and standards for non-profit and governmental units, evaluation of performance and the analysis and interpretation of financial statements of selected non-profit and governmental organizations. Prereq: MBA 6211, or enrollment in MAcc program. Not open to students with credit for 4510.

7310 Managerial Accounting for Decision Making G 1%  
Cost systems with emphasis on the appropriate application of system outputs to management decisions. Prereq: MBA 6211 (800), or enrollment in MAcc program. Not open to students with credit for 823.

7400 Tax Planning for Managerial Decision Making G 1%  
Examination of the impact of taxes on several important business decisions; recognition of tax problems and planning opportunities. Prereq: MBA 6211 (800), or enrollment in Master of Accounting Program, or permission of instructor. Not open to students with credit for 826.

7410 Tax Accounting I G 1%  
Intensive study of the federal income tax treatment of business corporations and partnerships, with particular attention to tax planning by these businesses and their owners. Prereq: 7400 (826), or enrollment in Master of Accounting Program, or permission of instructor. Not open to students with credit for 846.

7420 Tax Accounting III G 1%  
Intensive study of the federal income tax treatment of business entities and wealthy individuals, with particular attention to tax planning by these businesses and their owners. Prereq: MBA 6211 (800), or enrollment in Master of Accounting Program, or permission of instructor. Not open to students with credit for 866. Repeatable to a maximum of 12 cr hrs.

7430 Taxes and Business Strategy G 1%  
Identify, understand and evaluate tax planning opportunities where a conceptual framework of how tax rules affect business decisions and those aggregated business decision impact the economy. Prereq: MBA 6211 (800), or enrollment in Masters of Accounting Program; or permission of instructor.

7500 Auditing Principles and Procedures G 1%  
Basic theory and practice of auditing. Prereq: Enrollment in MAcc program.

7510 Assurance Services and Information Quality G 1%  
Examination of the role of assurance services in enhancing the quality of information used for financial decision making, focusing on the perspective of the decision maker. Prereq: 4500 (627), 5500H (627H), or 7500, or equiv, and enrollment in the MAcc program. Not open to students with credit for 822.

7520 Fraud Examination: Misappropriation of Assets G 1%  
Students will learn the major methods used by employees to commit fraud, factors that motivate individuals to commit fraud, misappropriation of assets, study of assets, and fraudulent disbursements, with emphasis on mechanisms to prevent and detect such frauds. Prereq: MBA 6211 (800), or enrollment in MAcc program. Not open to students with credit for 881.

7530 Fraud Examination: Fraudulent Financial Reporting G 1%  
Students will learn to detect fraud by studying fraudulent financial reporting (intentional misstatements or omissions in financial statements), with emphasis on detection techniques. Prereq: MBA 6211 (800), or enrollment in Master of Accounting Program, or permission of instructor. Not open to students with credit for 862.

7620 Management of Corporate Data Resources G 1%  
Exames modern database systems with an emphasis on planning, administrative, and implementation issues. Prereq: MBA 6211 (800), or enrollment in MAcc program. Not open to students with credit for 837.

7640 Data Mining for Business Intelligence G 1%  
A theoretical and practical understanding of core data mining concepts and techniques and hands-on experience in applying these techniques to practical real-world business problems. Prereq: MBA 6211 (800), or enrollment in MAcc program.

7650 Accounting Information Systems: Processes, Technology, and Analytics G 3  
This course covers the design and use of accounting information systems. The course emphasizes business processes and internal controls, with a focus on emerging technologies and the use of analytics in their evaluation. Prereq: MBA 6211 (800), or enrollment in MAcc program, or permission of instructor.

7660 Accounting & Data Analytics Internship Experience G 1%  
An internship experience affords the student the opportunity to apply in the workplace the knowledge and skills she/acquired in the classroom. In this course, students will examine the role of data analytics in the daily operations of an organization. Students will gain a better understanding of organizational culture, professional expectations, and his/her career options in the workplace. Prereq: Enrollment in MAcc program.

7716 Accounting and Financial Analysis in Health Sciences G 1%  
Examines how managers use accounting and financial reporting information in decision making and performance evaluation. Course focuses on fundamental techniques for financial analysis such as time value money, risk, 3D return, and capital budgeting. Prereq: BusMgt 7701, BusFin 7702, and BusMHR 7703; and enrollment in the Graduate Business Minor in Health Sciences.

7784 Tax Research G 1%  
Case studies requiring an in-depth examination of the tax aspects of situations frequently encountered by businesses and individuals. Prereq: 7410; or enrollment in MAcc program. Not open to students with credit for 856.

7800 Advanced Topics in Accounting and MIS for EMBA G 1 - 3  
Advanced Topics in Accounting and MIS for students in the Executive MBA Program. Prereq: Enrollment in EMBA Program. Repeatable to a maximum of 15 cr hrs or 7 completions.

7810 Advanced Topics in Accounting and MIS G 1½ - 3  
Advanced Topics in Accounting and MIS for students in the MAcc Program. Prereq: Enrollment in MAcc program. Repeatable to a maximum of 15 cr hrs or 7 completions.

8780 Doctoral Seminar in Accounting & MIS G 3  
Required seminar in Accounting and MIS for first year doctoral students. Prereq: Enrollment in AcctMIS PhD program.

8782 Doctoral Seminar in Financial Accounting G 3  
Required doctoral seminar in Financial Accounting. Prereq: Enrollment in AcctMIS PhD program.

8783 Doctoral Seminar in Managerial Accounting G 3  
Required doctoral seminar in Managerial Accounting. Prereq: Enrollment in AcctMIS PhD program.

8786 Doctoral Seminar in MIS Research G 3  
Required doctoral seminar in MIS Research. Prereq: Enrollment in AcctMIS PhD program.

8890 Doctoral Seminar in Accounting Topics G 3  
Doctoral seminar in Selected Accounting Topics. Prereq: Enrollment in AcctMIS PhD program. Repeatable to a maximum of 12 cr hrs.

8999 Dissertation Research G 1 - 9  
Doctoral dissertation research. Prereq: Enrollment in AcctMIS PhD program. Repeatable to a maximum of 24 cr hrs or 9 completions. This course is progress graded (S/U).

Advanced Computing Center for the Arts and Design

3350 The History of Animation U 3  
An overview of the history and theory of animation including origin of animation forms, Hollywood Studio animation, a sample of World Animation and contemporary animation. Prereq: Not open to students with credit for ArtsCol 350.

4101 Performance and Installation Technology U 3  
An overview of technologies useful for creating interactive installations and performance systems, using video projection, 3D graphics, environmental sensors and visual programming. Prereq: Permission of Instructor.

5001 Motion Studies through Hand-Drawn Animation U 3  
The principles of animation as demonstrated through hand-drawn animation. The work produced serves as a tool for comprehending the underlying process of any animation technique. Prereq: Not open to students with credit for ArtsCol 683.

5002 3D Computer Animation: Form, Light and Motion I U G 3  
Overview of 3D computer animation components and stages of production. Prereq: 5001 for students enrolled in the MIP (Moving Image Production) program.

5003 3D Computer Animation: Form, Light and Motion II U G 3  
Further exploration of 3D computer animation and stages of production. Prereq: 5002, or permission of instructor.

5100 Concept Development for Time-Based Media U G 3  
Methods for developing concepts for time-based media through the cultivation of ideas and problem-solving strategies. Storyboarding, composition, editing and sound principles will be explored. Prereq: Not open to students with credit for ArtsCol 730.

5102 Programming Concepts and Applications for Artists and Designers U G 3  
Fundamental programming concepts useful to artists and designers for creating algorithmic-based graphics and graphics tools. Prereq: Not open to students with credit for ArtsCol 756.

5140 Interactive Arts Media: Web U G 3  
Introduction to the theory and practice of the design of interactive media for the web. Prereq: Not open to students with credit for ArtsCol 740.
## 4 Advanced Computing Center for the Arts and Design

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Credits</th>
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<tbody>
<tr>
<td>5141</td>
<td>Interactive Arts Media: UI/UX</td>
<td>U</td>
<td>G</td>
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<tr>
<td>5150</td>
<td>Emerging Trends in Data Visualization</td>
<td>U</td>
<td>G</td>
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<tr>
<td>5191</td>
<td>ACCAD Internship</td>
<td>U</td>
<td>G</td>
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<tr>
<td>5193</td>
<td>Independent Study</td>
<td>U</td>
<td>G</td>
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<tr>
<td>5194.01</td>
<td>Group Studies in Digital Animation and Interactive Media</td>
<td>U</td>
<td>G</td>
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<tr>
<td>5301</td>
<td>Devising Experiential Media Systems</td>
<td>U</td>
<td>G</td>
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<td>5500</td>
<td>Integrated Tech Lab</td>
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<td>G</td>
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<tr>
<td>6002</td>
<td>Computer Game Art and Design I</td>
<td>G</td>
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<tr>
<td>6003</td>
<td>Computer Game Art and Design II</td>
<td>G</td>
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<tr>
<td>6650</td>
<td>The History of Animation</td>
<td>G</td>
<td>3</td>
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<td>6651</td>
<td>Digital and Physical Lighting</td>
<td>G</td>
<td>4</td>
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<td>7001</td>
<td>Virtual Modeling</td>
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<td>7101</td>
<td>Performance and Installation Technology</td>
<td>G</td>
<td>3</td>
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<tr>
<td>7102</td>
<td>Motion Capture Production and Experimentation</td>
<td>G</td>
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<tr>
<td>7103</td>
<td>Designing Immersive Virtual Environments</td>
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<td>7193</td>
<td>Independent Study</td>
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<tr>
<td>7504</td>
<td>Animation Production</td>
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<tr>
<td>7893</td>
<td>Collaborative Interdisciplinary Research Studio Experience</td>
<td>G</td>
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### Aerospace Engineering

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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<tr>
<td>2200</td>
<td>Introduction to Aerospace Engineering I</td>
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<tr>
<td>3520</td>
<td>Flight Vehicle Dynamics</td>
<td>U</td>
<td>3</td>
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<td>3521</td>
<td>Fundamentals of Flight Vehicle Control</td>
<td>U</td>
<td>3</td>
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<td>3542</td>
<td>Flight Vehicle Structures I</td>
<td>U</td>
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<tr>
<td>3545</td>
<td>Flight Vehicle Structures II</td>
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<td>3</td>
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<tr>
<td>3550</td>
<td>Fundamentals of Aerodynamics</td>
<td>U</td>
<td>3</td>
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<td>3570</td>
<td>One Dimensional Gas Dynamics</td>
<td>U</td>
<td>3</td>
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<td>3580</td>
<td>Heat Transfer</td>
<td>U</td>
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<tr>
<td>3581</td>
<td>Numerical Methods in Aerospace Engineering</td>
<td>U</td>
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**Prerequisites:**
- **5141 Interactive Arts Media: UI/UX:** Practice in methods for designing and crafting user experiences (UX) and user interfaces (UI) for web applications.
- **5150 Emerging Trends in Data Visualization:** This course enables students to explore new and emerging visualization approaches, topics and trends in visualization research and their applications. Students will research, write about, experience, propose, and prototype trends and possibilities for visualization.
- **5191 ACCAD Internship:** A collaborative internship assignment conducted under the supervision of a faculty member. Prerequisite: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.
- **5193 Independent Study:** Independent study. Prerequisite: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.
- **5194.01 Group Studies in Digital Animation and Interactive Media:** Group study on various topics related to digital animation and interactive media. Repeatable to a maximum of 15 cr hrs or 5 completions.
- **5301 Devising Experiential Media Systems:** This course focuses on the creation of interactive and responsive spaces through the design of experiential media systems within the context of their underlying history, methodology, technology, and theory. Using a multidisciplinary and collaborative approach, students create hybrid digital-physical experiences which investigate the application of the technology used in experiential media design.
- **5500 Integrated Tech Lab:** Technology exploration using ACCAD's specialized graphics laboratories. Repeatable to a maximum of 10 cr hrs or 4 completions. This course is graded S/U.
- **6002 Computer Game Art and Design I:** Introduction to concepts for design and prototyping of games for entertainment, learning and social good. Prerequisite: Sr or Grad standing, and permission of instructor. Not open to students with credit for ArtsCoT 733.
- **6003 Computer Game Art and Design II:** Advanced topics for design and production of fun and serious games including networking multi-player and mobile devices. Prerequisite: Sr or Grad standing, and permission of instructor. Repeatable to a maximum of 9 cr hrs.
- **6650 The History of Animation:** Overview of the history and theory of animation, including the origin of animation forms and Hollywood Studio animation, with a sample of World and contemporary animations. Prerequisite: Grad standing. Not open to students with credit for ArtsCoT 650.
- **6651 Digital and Physical Lighting:** Introduction to the principles and concepts of lighting as used in theatre and computer graphics. Working in collaborative teams, students develop and execute digital and analog lighting schemes. Prerequisite: Grad standing, or permission of instructor. Not open to students with credit for ArtsCoT 754 or Theatre 6651 (754). Cross-listed in Theatre.
- **7001 Virtual Modeling:** Design and modeling principles of 3D objects, environments and characters for animation, games and visualization. Prerequisite: Grad standing, or permission of instructor. Not open to students with credit for ArtsCoT 751.
- **7101 Performance and Installation Technology:** An overview of technologies useful for creating interactive installations and performance systems, using video projection, 3D graphics, environmental sensors and visual programming. Prerequisite: Grad standing, or permission of instructor. Not open to students with credit for ArtsCoT 758.
- **7102 Motion Capture Production and Experimentation:** Traditional motion capture pipelines and exploration of possibilities for experimental approaches and applications of the technology. Prerequisite: Grad standing, or permission of instructor. Not open to students with credit for ArtsCoT 760.
- **7103 Designing Immersive Virtual Environments:** Creative and technical concepts for the development of simulations, installations, augmented reality and responsive spaces using 3D computer graphics with gesture-based and alternative input systems combined with immersive display methods. Prerequisite: Grad standing, or permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions.
- **7193 Independent Study:** Independent study. Prerequisite: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.
- **7504 Animation Production:** An advanced studio course designed for students who are well versed in animation concepts and technical basics. The course challenges students to embark on collaborative animation projects that are currently in-house at ACCAD. Prerequisite: 7001, 7002, 7003, 7004, or 7005, or permission of instructor. Repeatable to a maximum of 12 cr hrs or 4 completions.
- **7893 Collaborative Interdisciplinary Research Studio Experience:** Creative research by teams integrating information, data, techniques, tools, perspectives, concepts, & theories from two or more bodies of specialized knowledge to advance fundamental understanding or solve problems whose solutions are evolving. Prerequisite: Grad standing, or permission of instructor. Repeatable to a maximum of 10 cr hrs or 4 completions.
4193 Individual Studies in Aerospace Engineering U 1 - 7
Individual studies project for undergraduates.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 4 completions. This course is graded S/U.

4194 Group Studies in Aerospace Engineering U 1 - 3
Group studies course for undergraduates.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 4 completions.

4510 Experimental Projects I U 2
Conceive, plan and design an experiment with a group of students. Emphasis on planning and experiment preparation.
Prereq: 3543 (543) and 3570 (530 and 570), and Sr standing, and enrollment as AeroEng-BS student (No pre-majors can enroll in this class).

4511 Experimental Projects II U 2
Execute and report on experiment formulated in Projects I. Emphasis on execution and reporting.
Prereq: 4510, and enrollment as AeroEng-BS student (No pre-majors can enroll in this class).

4515 Design of Atmospheric Flight Vehicles I U 3
Conceptual and preliminary design, methodology, case studies, introduction of design software, group planning for subsequent design effort: design of atmospheric flight vehicles and components.
Prereq: 3543 (543) and 3570 (530 and 570) and 3521 (521) and 3580 (880), and Sr standing, and enrollment as AeroEng-BS student (No AAE pre-majors can enroll in this class). Prereq or concor: 4550 (550). Not open to students with credit for 516.01 or 516.01.

4516 Design of Atmospheric Flight Vehicles II U 3
Continuation of 4515. Preliminary and detailed design of atmospheric flight vehicles: design of a vehicle for atmospheric flight.
Prereq: 4515 (515 and 516), and enrollment as AeroEng-BS student (No pre-majors can enroll in this class). Not open to students with credit for 516.01 or 517.01.

4517 Design of Space Vehicles and Systems I U 3
Feasibility study of a space mission, elements of mission design and design methodologies of spacecraft subsystems, and preliminary sizing.
Prereq: 3521 and 3543 and 3570 and 3580, and Sr standing, and enrollment as AeroEng-BS student (No pre-majors can enroll in this course). Prereq or concor: 4550.

4518 Design of Space Vehicles and Systems II U 3
Continuation of 4517: Preliminary and detailed design of space vehicles. Design of a space vehicle system and mission scenarios simulation via computer software.
Prereq: 4517, and enrollment as AeroEng-BS student (No pre-majors can enroll in this course).

4550 Principles of Flight Vehicle Propulsion U 3
Fundamentals of aerospace propulsion, engine cycles and analysis of various air-breathing and rocket engines.
Prereq: 3570. Not open to students with credit for 550.

4989 Aerospace Engineering Research U 1 - 3
Aerospace Engineering research.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

4999 Aerospace Engineering Thesis Research U 1 - 3
Aerospace Engineering research for thesis.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 5 completions.

4999H Aerospace Engineering Honors Thesis Research U 1 - 3
Aerospace Engineering honors research for thesis.
Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 10 cr hrs or 5 completions. This course is graded S/U.

5610 Helicopter Aerodynamics U 1 - 3
Basic treatment of helicopter aerodynamics, performance, and design. Prereq: 3570 (530 and 570).

5612 Aircraft Performance and Flight Test Engineering U 3
Determination of the performance, stability, controllability, and handling qualities of general aviation aircraft through analysis and flight tests.
Prereq: 3520 (520) and 3570 (530 and 570). Not open to students with credit for 612.

5615 Introduction to Computational Aerodynamics U 3
Introduction to computational methods used in aerodynamics flow problems. Prereq: 3570 and 3581, and AeroEng major. Not open to AeroEng pre-majors.

5616 Advanced Flight Vehicle Design U 3
The course introduces advanced flight vehicle design techniques applied during the conceptual design phase. The optimum design process and problem formulation is introduced, with an in-depth focus on multidisciplinary graphical optimization techniques for aircraft. We will conduct optimal design based on first principles, and apply best practices to multidisciplinary flight vehicle design. Prereq or concor: 4550, and 4515 or 4517; or Grad standing in AeroEng; or permission of instructor.

5620 Stability and Control of Flight Vehicles U 3
Analysis and design of aircraft, helicopter and missile flight control systems and the associated guidance and navigation systems.
Prereq: 3521 (521). Not open to students with credit for 620 or 621.

5621 Guidance, Navigation, and Control of Aircraft Vehicles U 3
Spacecraft (satellite) control systems analysis and design.
Prereq: 3521 (521). Not open to students with credit for 620 or 621.

5626 Orbital Mechanics for Engineers U 3
Introduction to orbital mechanics with orbit determination techniques, orbital maneuvers and lunar and interplanetary trajectories.
Prereq: 3520 (520) and MechEng 2030 (430). Not open to students with credit for 645 or 745.

5751 Advanced Air-Breathing Propulsion U 3
Fundamental and advanced concepts of gas turbine operation.
Prereq: 4550 (550). Not open to students with credit for 751.

5752 Advanced Space Propulsion U 3
Analysis of different propulsion techniques for access to space and inter-planetary flight: liquid, solid, hybrid, nuclear and electric. Emphasizes fundamentals based on physics and mathematics.
Prereq: 4550 (550), or permission of instructor. Not open to students with credit for 752.

5775 Hypersonic Flow U 3
Introduction to hypersonic inviscid and viscous flows, Newtonian theory, high-temperature effects and heat transfer.
Prereq: 3570 (530 and 570) and 4550 (550). Not open to students with credit for 775.

6193 Individual Studies in Aerospace Engineering G 1 - 7
Individual studies project.
Prereq: Permission of instructor. Repeatable to a maximum of 8 cr hrs or 4 completions. This course is graded S/U.

6194 Group Studies in Aerospace Engineering G 1 - 3
Group studies course.
Prereq: Permission of instructor. Repeatable to a maximum of 8 cr hrs or 4 completions.

6645 Introduction to Structural Dynamics and Aeroelasticity of Aerospace Vehicles G 4
Fundamental Concepts of Structural Dynamics, Unsteady Aerodynamics, and Aeroelasticity of Aerospace Vehicles.
Prereq: Grad standing, or permission of instructor.

6771 Viscous Fluid Flow: Laminar and Transitional G 3
Focus on laminar and transitional flows, beginning with classic analytical solutions to the Navier-Stokes equations and addressing issues of boundary layer stability and compressibility effects.
Prereq: 3560 and 3570.

6860 Experimental Fluid Mechanics G 3
Introduction to experimental planning, data acquisition and analysis, and advanced measurement techniques commonly employed in fluid dynamics research.
Prereq: Grad standing in Mechanical or Aerospace Engineering, or permission of instructor. Not open to students with credit for 865.

7774 Aeroacoustics G 3
Fundamental concepts of classical acoustics; physical mechanisms associated with aerodynamic noise generation; computational aeroacoustic methods.
Prereq: 5615 (615) or equiv.

7844 Optimal Design of Aerospace Structures G 3
Optimization applied to aircraft and spacecraft structures.
Prereq: Grad standing in Mechanical or Aerospace Engineering, or permission of instructor. Not open to students with credit for 844 or MechEng 7761 (761). Cross-listed in MechEng 7761.

7862 Internal Flows in Turbomachinery G 3
Detailed study of swirling, rotating, compressible, and unsteady internal flows found in turbomachinery.
Prereq: 3560 (560) and 5751 (751), or permission of instructor. Not open to students with credit for 862.

7875 Introduction to Turbulence G 3
Introduction to turbulence in fluid mechanics with emphasis on understanding the physical mechanisms involved.
Prereq: Grad standing in Mechanical or Aerospace Engineering, or permission of instructor. Not open to students with credit for 875. Cross-listed in MechEng 7513.

8193 Individual Studies in Aerospace Engineering G 1 - 7
Topics selected to give the advanced student opportunity to pursue special studies not otherwise offered.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.
Aerospace Engineering

8194 Group Studies Aerospace Engineering G 1 - 3
Topics selected to give advanced students an opportunity to pursue special studies as a group not otherwise offered. Prereq: Permission of instructor. Repeatable to a maximum of 10 or hrs or 10 completions.

8802 Advanced Mathematical Methods in Engineering G 3
Fourier series, complex differentiation and integration and transform and Green's function methods for solution of problems arising in heat transfer, vibrations, fluid mechanics; asymptotic analysis and singular perturbations. Prereq: Grad standing in Mechanical, Aerospace, or Nuclear Engineering; or permission of instructor. Crosslisted in MechEn 8518.

8810 Robust Multivariable Control with Applications G 3
Advanced concepts for robust control of uncertain dynamic systems with applications. Prereq: 5620 (620) or 5621 (821), or equiv.

8873 Advanced Computational Fluid Dynamics G 3
Fundamentals of most types of numerical approaches employed to solve fluid dynamics and heat transfer problems. Prereq: 5615 (615) or MechEn 6507 (707), or equiv. Not open to students with credit for 873.

8890 Aerospace Engineering Graduate Seminar G 1
Lecture and discussion of current topics related to Aerospace Engineering presented by graduate students, staff and guest speakers. Course does not count toward course work required for MS or PhD degrees. Prereq: Grad standing in AeroEng, MechEn or NuckEn. Repeatable to a maximum of 20 or hrs. This course is graded S/U.

8998 Aerospace Engineering Research for MS Thesis G 1 - 15
Aerospace engineering research for thesis. Repeatable. This course is graded S/U.

8999 Aerospace Engineering Research for Dissertation G 1 - 16
Aerospace engineering research for PhD. Repeatable. This course is graded S/U.

African American and African Studies

1101 Introduction to African American and African Studies U 3
Introduction to the scholarly study of the Africana experience, focusing on patterns of resistance, adaptation, diversity, and transnational connections. Prereq: English 1110. GE soc sci indivs and groups course.

1121 African Civilizations to 1870 U 3
Exploration of the political, social, and economic history of precolonial African civilizations, using a variety of interdisciplinary approaches and materials. Prereq: English 1110. GE historical study and diversity global studies course.

1122 African Civilizations, 1870 to the Present U 3
Exploration of the political, social, and economic history of colonial and independent African countries, using a variety of interdisciplinary approaches and materials. Prereq: English 1110. GE historical study and diversity global studies course.

2080 African American History to 1877 U 3
The study of the African American experience in America from arrival through the era of Reconstruction, focusing on slavery, resistance movements, and African American culture. Prereq or concour: English 1110.xx. Not open to students with credit for 323.01 or History 2080 (323.01). GE historical study course. Crosslisted in History.

2081 African American History from 1877 U 3
The study of the African American experience in the United States from the era of Reconstruction through the present. Prereq or concour: English 1110.xx, or permission of instructor. Not open to students with credit for 323.02 or History 2081 (323.02). GE historical study course. Crosslisted in History.

2101 Introduction to African Art and Archaeology U 3
The Art and Archaeology of Africa with emphasis on the historic cultures of Rock Art (8,000 B.C.), Egypt (3,000 B.C.), Nok (900 B.C.), Igbo-Ukwu (695 A.D.), Ife (1200 A.D.), and Benin (1400-1800 A.D.). Prereq: Not open to students with credit for HistArt 2101 (216). GE VPA course and diversity global studies course. Crosslisted in HistArt.

2194 Group Studies U 1 - 3
Groups of students are given an opportunity to pursue special studies not otherwise offered. Prereq: Permission of instructor. Repeatable to a maximum of 9 or hrs or 3 completions.

2201 Major Readings in African American and African Studies U 3
An introduction to major authors and texts contributing to the discourses that have shaped and defined African American and African Studies from its inception to the present. Prereq: English 1110 (110). Not open to students with credit for 200 or 201. GE diversity soc div in the US course.

2218 Black Urban Experience U 3
Examination of contemporary black urban experience focused on the impact of persistent residential segregation, increasing class polarization, and the global force of hip hop culture. GE soc sci indivs and groups course.

2251 Introduction to African Literature U 3
An assessment of the oral prose tradition and written prose of African literature; specific emphasis placed on student reading from primary sources. GE lit and diversity global studies course.

2253 Introduction to Caribbean Literature U 3
An introduction to Caribbean literature with a focus on prose, poetry, and drama. GE lit and diversity global studies course.

2270 Introduction to Black Popular Culture U 3
A critical analysis of the commodity production and consumption of black popular culture products, such as fashion, film, urban fiction, vernacular expression, television and advertising. GE VPA and diversity soc div in the US course.

2275 Blackness and the Politics of Sports U 3
This interdisciplinary course considers the role of Black athletes in society and culture, the racial politics involved, and the global implications of race on courts, playing fields, tracks, and other athletic arenas.

2281 Introduction to African-American Literature U 3
A study of representative literary works by African-American writers from 1760 to the present. Prereq: English 1110 (110), or equiv. Not open to students with credit for 281 or English 2281 (281). GE lit and diversity soc div in the US course. Crosslisted in English.

2285 Afropop: Popular Music and Culture in Contemporary U.S. Africa
This course focuses on the rich variety, aesthetic beauty, and political significance of popular music in modern African cities. By closely attending to the genres, forms, styles, and social life of African popular music, students will encounter the dynamic soundscape of popular culture in Africa today. GE cultures and ideas course and diversity global studies course.

2288 Bebop to Doowop to Hiphop: The Rhythm and Blues Tradition
Examines the aesthetic and historical evolution of rhythm and blues: black music tradition including bebop, rock and roll, and hiphop, defining African-American popular culture post-WWII. Prereq: Not open to students with credit for 288 or Music 2288 (288). GE VPA and diversity soc div in the US course. Crosslisted in Music.

2300 Issues in the Contemporary Black World U 3
This interdisciplinary course examines contemporary issues affecting people of African descent on the continent and throughout its Diaspora. The course will call upon students to consider how race, ethnicity, national origin, gender, sexuality, and religion affect African-descended people in their daily lives, in cultural productions, and in relation to state power. GE diversity global studies course.

2327 Introduction to African Politics U 3
Examination of dynamics of nation-building in African countries in transition from colonial dependencies to modern nation-states.

2367.01 African-American Voices in U. S. Literature U 3
Discussion, analysis, and writing about issues presented through the diverse voices of African American literature. Prereq: English 1110 (110). Not open to students with credit for 367.02. GE writing and comm: level 2 and lit and diversity soc div in the US course.

2367.02 Debates in African American Studies U 3
This writing-intensive course will assist students in honing their rhetorical argumentation skills through the examination of debates in African American Studies from the arrival of Africans in the Americas through the current moment. Prereq: English 1110.01 (101.01), and Soph standing. GE writing and comm course: level 2.

2367.04 Black Women Writers: Test and Context U 3
Writing and analysis of black women's literary representations of issues in United States social history. Prereq: English 1110, and Soph standing. Not open to students with credit for WGSS 2367.04. GE writing and comm: level 2 and lit and diversity soc div in the US course. Crosslisted in WGSS.

2367.075 Literacy Narratives of Black Communities U 3
This service-learning course focuses on collecting and preserving literacy narratives of Columbus-area Black communities. Through engagement with community partners, students refine skills in research, analysis, and composition; students synthesize information, create arguments about discursive/visual/cultural artifacts, and reflect on the literacy and life-history narratives of Black Communities. Prereq: English 1110, and Soph standing. Not open to students with credit for English 2367.075. GE writing and comm: level 2 and diversity soc div in the US course. Crosslisted in English.

3080 Slavery in the United States U 3
The African American experience in slavery, focusing on the rise of the slave trade, slavery in the colonial and antebellum era, the Civil War, and abolition. Prereq or concour: English 1110.xx; or permission of instructor. Not open to students with credit for History 3080. GE historical study course. Crosslisted in History.
3083   Civil Rights and Black Power Movements U 3
Examines the origins, evolution, and outcomes of the African American freedom struggle, focusing on the Civil Rights and Black Power movements. Sometimes this course is offered in a distance-only format.
Prereq: English 1110.xx, or permission of instructor. Not open to students with credit for History 3083. GE historical study and diversity soc div in the US course. Cross-listed in History.

3086   Black Women in Slavery and Freedom U 3
Traces the experiences and struggles of African American women from slavery through the Civil Rights/Black Power era.
Prereq: English 1110.xx and any History 2000-level course, or permission of instructor. Not open to students with credit for History 3086. GE historical study and diversity soc div in the US course. Cross-listed in History.

3089   Studies in African American History U 3
Selected topics in African American history from the origins of slavery to the present.
Prereq: English 1110.xx and any History 2000-level course, or permission of instructor. Not open to students with credit for History 3089. Repeatable to a maximum of 12 cr hrs. GE historical study course. Cross-listed in History.

3230   Black Women: Culture and Politics U 3
Examination of the social, cultural, political, economic, and historical forces, dynamics, and processes affecting women throughout the African world.
Prereq: Not open to students with credit for 230. GE diversity soc div in the US course.

3260   Global Black Cultural Movements U 3
This course focuses on hemispheric studies in the Americas, examining black cultural movements emerging after emancipation through the present. It considers the ways people of African descent in the Americas have used cultural productions—literature, poetry, film, music, visual art, and performance—to construct identities; agitate for equality; and understand aesthetics as political and beautiful.
GE diversity global studies course.

3304   History of Islam in Africa U 3
Africa from the emergence of Islam in the 600s to the Present. African contributions to Islam and the impact of Islam on African societies. Sometimes this course is offered in a distance-only format.
Prereq or concur: English 1110.xx, or permission of instructor. Not open to students with credit for History 3304. GE historical study course. Cross-listed in History.

3310   Global Perspectives on the African Diaspora U 3
Study of historical processes, key figures and ideas, and cultural expressions of the worldwide dispersion of people of African descent from different times and places.
Prereq: Not open to students with credit for 310.

3320   History of African Cinema U 3
Emergence and development of African cinema as a film genre and part of material culture. European colonial and ethnographic to modern African cinema. Sometimes this course is offered in distance-only format.
Prereq: English 1110.xx, or permission of instructor. Not open to students with credit for History 3310. GE historical study and diversity global studies course. Cross-listed in History 3310.

3361   Psychology of the Black Experience U 3
An analysis of personality theories commonly applied to black Americans and the black experience.
Prereq: Not open to students with credit for 361.

3370   Being African in America U 3
We examine the particular experiences of first and second-generation Africans in America, for whom today’s amplified “us vs. them” rhetoric threatens to fracture what W.E.B. Du Bois called an African American sense of “two peoples.” What are the constraints on a doubly conscious “African” and “American” identity in the United States? What are the challenges of sustaining a fragile social pluralism?
Prereq: English 1110.

3376   Arts and Cultures of Africa and the Diaspora U 3
An overview of African and African diaspora cultures from a historical perspective. Cultural media will include art, literature, film, dance, and photography.
Prereq: Not open to students with credit for 376 or HistArt 3102. GE VPA and diversity global studies course. Cross-listed in HistArt 3102.

3440   Theorizing Race U 3
Introduction to issues of “race,” consideration of the historical emergence and development of ideas of “race” and of racist practices, along with their contemporary formations.
Prereq: Any 2367 course, or Philos 2400, or enrollment in Philosophy, Politics, and Economics Major, or permission of instructor. Not open to students with credit for Philos 3440. Cross-listed in Philos.

3450   The Art and Politics of Hip-Hop U 3
Explores the world of Hip-Hop, from its birth in the Bronx to its infiltration of music, fashion, television, film, dance, print culture, and politics. It considers critically the intersections of race, class, gender, sexuality, nation, and geography as well as the ways in which Hip-Hop functions simultaneously as aesthetic, analytic, and political.
Prereq: English 1110.

3956   Black Cultures and Classical Education U 3
Study the role of classics in African and the African Diaspora (US, Caribbean, Brazil). Major themes include: adaptations of classical literature, impact of classical education, classics as a tool of colonial oppression, classics as a tool of anti-colonial resistance, theories of race, classical and classicizing depictions of black bodies.
Prereq: Not open to students with credit for Class 3956. Cross-listed in Class. GE lit course. GE diversity global studies course.

4193   Individual Studies U 1-6
Exploration of relevant subject as individually designed by student and professor.
Prereq: Permission of instructor, and permission of dept chair. Repeatable to a maximum of 6 hrs or 2 completions. This course is graded S/U.

4250   African Politics U 3
An introductory survey of Sub-Saharan African politics from the pre-colonial period to the contemporary era. It will examine the common themes, issues, and trends that shape politics and development across forty-nine countries. Students will gain an understanding of how context shapes political behavior and how historical and political forces have influenced African politics.
Prereq: Not open to students with credit for PolitSc 4497.02 (Au13, African Politics), 4250, or 4250H. GE soc sci orgs and politics and diversity global studies course. Cross-listed in PolitSc.

4326   Topics in African Americans and Public Policy U 3
Examination of the impact of public policies on African American communities in the U.S. from the New Deal’s Welfare State policies and programs of the 1930s to the present.
Prereq: Not open to students with credit for 326.

4342   Religion, Meaning, and Knowledge in Africa U 3
While the practice of religion in Africa is as diverse as its people, three major belief systems define the practice: African Traditional Religion, Islam, and Christianity. This course will examine classical and contemporary definitions of African Traditional Religion’s and the introduction and adaptations of Islam and Christianity in Africa. GE cultures and ideas and diversity global studies course.

4504   Black Politics U 3
Economic, political, and social constraints on the development of black political power; the efforts made by black people in recent times to organize for effective political action.
Prereq: Not open to students with credit for 504 or PolitSc 4140 (504). Cross-listed in PolitSc 4140.

4515   Ethnicity, Development, and the State in Sub-Saharan Africa U 3
Africa
A theoretical analysis of constructions, perceptions, and performances of black masculinity locally and globally.

4551   Topics in African Literature U 3
Topics selected will relate to varying issues in the literatures of the Africa and the African Diaspora.
Prereq: 2251, 2281, or English 2281. Not open to students with credit for 551. GE lit and diversity global studies course.

4557   History of South Africa U 3
An examination of the political and social developments in South Africa from the 19th century to the present.
Prereq: Not open to students with credit for 575.

4561   Topics in Africana Psychology U 3
The study of different dimensions of African and African American psychology; topics vary.
Prereq: 3361, or permission of instructor. Not open to students with credit for 561. Repeatable to a maximum of 6 cr hrs.

4565   Topics in African Diaspora Studies U 3
Selected topics which examine the origins, dimensions, and dynamics of the African Diaspora; topics vary each term.
Prereq: 3310. Not open to students with credit for 565. Repeatable to a maximum of 9 cr hrs.

4571   Black Visual Culture and Popular Media U 3
An examination of African Americans in visual culture and the theories of representation in popular media.
Prereq: Not open to students with credit for 571. GE VPA and diversity soc div in the US course.

4582   Special Topics in African-American Literature U 3
Focuses on themes in African American Literature. Topic varies. Examples: Neo-slave narratives; the Harlem Renaissance; literature by African-American women.
Prereq: English 2367.01 (367.01), or equiv, and 10 qtr hrs or 6 sem hrs of English at 2000-3300 level, or permission of instructor. Not open to students with 10 qtr hrs or 6 sem hrs for 4582 (582) or Eng 4582 (582). Repeatable to a maximum of 6 cr hrs. Cross-listed in English.
8 African American and African Studies

4610 African Americans and the Law U 3
This is an interdisciplinary course that puts major legal cases affecting African Americans into conversation with their historical underpinnings, as well as the social contexts and how those contexts manifest in African American cultural productions. Central goal of the course is to interrogate the idea of a "colorblind" justice system.

4921 Intersections: Approaches to Race, Gender, Class, and Sexuality U 3
Examines intersections of race, gender, class, and sexuality in various sites within American culture (e.g., legal system, civil rights discourse, social justice movements). Prereq: One course in CompStd, WGSSt, or AfrAmSt. Not open to students with credit for 545, CompStd 4921 (545), or WGSSt 4921 (545). Cross-listed in CompStd and WGSSt.

4998 Senior Research Seminar U 3
A seminar designed to provide experience in the creation of a research paper based on appropriate humanities and social science methodologies. Research topic to be announced. Prereq: 2101, 3310, and two 4000-level courses; or permission of instructor.

4999 Thesis Research U 1 - 6
A program of individual study for undergraduate students: may include individual conferences and reports; requires presentation and oral defense of a thesis. Prereq: Sr standing. This course is graded S/U.

4999H Honors Thesis Research U 1 - 3
A program of individual study for undergraduate honors students: may include individual conferences and reports; requires presentation and oral defense of an honors thesis. Prereq: Honors standing, and 24 cr hrs taken in the Social and Behavioral Sciences and/or Humanities (including 12 hrs in AfrAmSt), and Sr standing. Repeatable to a maximum of 6 cr hrs or 2 completions. This course is graded S/U.

5195 Community Development: Field Research and Seminar U G 3 - 6
A service-learning course that draws on the principles of experiential learning by immersing students in an organized service activity that meets identified community needs. Prereq: 1101 or 2101, and permission of course coordinator. Repeatable to a maximum of 6 cr hrs or 2 completions.

5193 Individual Studies U G 1 - 3
Individual reading or research projects by special agreement between instructor and student. Prereq: 12 cr hrs in AfrAmSt, permission of instructor, and permission of department chair. Repeatable to a maximum of 6 cr hrs or 2 completions. This course is graded S/U.

5194 Group Studies U G 1 - 3
Group studies. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs or 2 completions.

5240 Race and Public Policy in the United States U G 3
This course explores Race and Public Policy in the United States from Reconstruction to the present. In particular, the class is designed to look at the long list of “hot topics” in the current policy landscape, including policing, housing, wealth gap, immigration, voting, political representation, and others. Prereq: Jr, Sr, or Grad standing; or permission of instructor. Not open to students with credit for CompStd 5240 or PubAffs 5240. Cross-listed in CompStd and PubAffs.

5485.01 Southern Africa: Society and Culture U G 3
A comparative study of the social, political, cultural, and economic changes in Africa and the impact on contemporary black world. A study of the social and cultural developments in Southern Africa, and the environment. Prereq: English 1110 (110). Not open to students with credit for 485.01 or 705.01. GE cultures and ideas and diversity global studies course.

5485.02 West Africa: Society and Culture U G 3
A comparative study of the social, political, cultural, and economic changes in Africa and the impact on contemporary black world. A chronological and interdisciplinary exploration into the cultures and societies of West Africa. Prereq: English 1110. Not open to students with credit for 485.03 or 705.01.

5650 Blackness and the Body in Science and Medicine U G 3
This course considers the need for and pursuit of social justice when black bodies are subjected to commodification and systemic subordination. The course focuses on what Frantz Fanon called the "corporal schema" of blackness as well as the social construction of blackness to think about the relationship between black bodies and social justice pursuits in medicine and science.

5798.03 Study Tour: Brazil U G 3
Consists of a two-week educational Study Trip that combines formal lectures by local scholars with visits to local cultural and historical institutions as well as travel within Brazil, the host Latin American country. Prereq: 5465.03. GE education abroad course.

5798.04 Study Abroad in Africa and the Diaspora U G 3 - 9
A study tour of Africa and the Diaspora. Students will pay all travel and subsistence costs. Successful application to eligible study abroad program required. Repeatable to a maximum of 12 cr hrs or 2 completions.

6194 Graduate Group Studies G 3
Group studies. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

6757.02 Introduction to Graduate Studies in African American Literature, 1900 to Present G 3
A survey of creative texts and critical interpretations representing and reflecting black culture and literary expression in the United States from 1900 to the present. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 757.02 or English 6757.02 (757.02). Cross-listed in English.

6999 Master's Thesis Research G 1 - 12
Research for master's thesis. Prereq: Permission of instructor. Not open to students with credit for 998. This course is graded S/U.

7086 The Civil Rights and Black Power Movements G 1 - 6
Examines the origins, evolution, and outcomes of the African American freedom struggle, focusing on the Civil Rights and Black Power movements. Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions. Cross-listed in History.

7087 Black Women in the United States G 1 - 6
A study of historical and related scholarship on the history and experience of black women in the United States. Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions. Cross-listed in History.

7303 Comparative History of the African Diaspora and Post-Emanicipation, Colonial, & Post-Colonial Reality G 3
Examination of social, political, and cultural developments and realities in the black world, from the period of the emancipation to the beginning of the 21st century. Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs. Cross-listed in History.

7420 African Historiography and Methodology G 3
The study of sources, research methods, interpretations, and research trends in the field of African history. Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 9 cr hrs. Cross-listed in History.

7507 Black Lives Matter: Law and Culture G 3
This course examines law as a site that has defined both blackness and humanness in relationship to African Americans. It also explores black culture to understand various responses to injustice. Prereq: Not open to students with credit for Law 7507. Cross-listed in Law.

7580 Enslavement, Emancipation, Colonial and Post-Colonial Realities G 3
History and evolution of the African Diaspora worldwide, from ancient times to the present. Examination of social, political and cultural developments and realities in the Black world. Prereq: Grad standing, or permission of instructor.

7730 Black Political Movements and Organizations G 3
Analysis of black political movements and organizations from slavery to contemporary times. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 730.

7751 Introduction to Graduate Studies and African Literature G 3
A broad survey of the development of African literature, its variations, genres, and themes. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 751.

7753 Graduate Survey in African-American and African Studies G 3
Critical analysis of the development of African-American Studies as a discipline and the theoretical approaches to its subject matter. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 753.

7754 Methodological Perspectives in African-American and African Studies G 3
A critical and trans-disciplinary examination of methodological approaches employed in the study of the Black experience in its convergent and divergent manifestations across the world. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 754.

7756 Theorizing Race and Ethnicity G 3
Examination of the ideas and theories of race and its intersection with ethnicity. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 756.

7759 Topics in African Diaspora Studies G 3
A multi-disciplinary and critical examination of the origins dimensions and legacies of the African Diaspora. Topics will vary each term. Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 12 cr hrs.

7760 African Pop Culture G 3
Examination and critique of various theories and genres of popular culture as they relate to the African situation. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 760.

7810 Topics in Black Feminist Theory G 3
Theoretical analysis of the politics and perceptions of womanhood in the black community. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 810.
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<th>Course Code</th>
<th>Course Title</th>
<th>CR HRS</th>
<th>Notes</th>
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<tbody>
<tr>
<td>8193</td>
<td>Advanced Individual Studies</td>
<td>G</td>
<td>1 - 12</td>
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<td>8530</td>
<td>Transnational History of the African World</td>
<td>G</td>
<td>3</td>
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<td>8865</td>
<td>Race, Gender, and Class in the Diaspora</td>
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<td>3</td>
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<td>8998</td>
<td>Research in African-American and African Studies</td>
<td>G</td>
<td>1 - 12</td>
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<tr>
<td>8999</td>
<td>Dissertation Research and Writing</td>
<td>G</td>
<td>1 - 3</td>
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<tr>
<td>2130</td>
<td>Visual Media in Agricultural and Natural Resources</td>
<td>U</td>
<td>3</td>
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<tr>
<td>2193</td>
<td>Individual Studies</td>
<td>U</td>
<td>1 - 3</td>
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<tr>
<td>2194</td>
<td>Group Studies</td>
<td>U</td>
<td>1 - 3</td>
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<tr>
<td>2367</td>
<td>Agricultural Issues in Contemporary Society</td>
<td>U</td>
<td>3</td>
</tr>
<tr>
<td>2531</td>
<td>Introduction to Agricultural Communication Practices</td>
<td>U</td>
<td>3</td>
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<tr>
<td>3130</td>
<td>Oral Expression in Agriculture</td>
<td>U</td>
<td>3</td>
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<tr>
<td>3488</td>
<td>Professional Development In Agricultural Communication</td>
<td>U</td>
<td>1 - 3</td>
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<tr>
<td>3797</td>
<td>Agricultural Communication Study Abroad</td>
<td>U</td>
<td>3</td>
</tr>
<tr>
<td>4130</td>
<td>Publication Design and Production</td>
<td>U</td>
<td>3</td>
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<tr>
<td>4191</td>
<td>Agricultural Communication Internship</td>
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<td>1 - 5</td>
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**Agricultural Communication**

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<th>Course Code</th>
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<th>Notes</th>
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<tr>
<td>4191.01</td>
<td>Agricultural Communication Internship</td>
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<tr>
<td>4191.02</td>
<td>Agricultural Communication Advanced Internship</td>
<td>U</td>
<td>3</td>
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<tr>
<td>4194.01</td>
<td>Group Studies</td>
<td>U</td>
<td>1 - 3</td>
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<tr>
<td>4530</td>
<td>Communicating Agricultural Issues</td>
<td>U</td>
<td>3</td>
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<tr>
<td>5130</td>
<td>Campaign Design and Management in Agricultural Organization</td>
<td>U</td>
<td>G</td>
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<tr>
<td>5135.01</td>
<td>Agricultural Feature Writing</td>
<td>U</td>
<td>G</td>
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<tr>
<td>5135.02</td>
<td>Agrinaturalist Practicum</td>
<td>U</td>
<td>G</td>
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<tr>
<td>5150</td>
<td>Communication Strategies for Change and Development</td>
<td>U</td>
<td>G</td>
</tr>
<tr>
<td>5170</td>
<td>International Development Theory and Practice</td>
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**Notes:**
- **Advanced individual reading or research projects by special agreement between instructor and student.** Prereq: Permission of Instructor. This course is graded S/U.
- **Research for candidacy exams. Repeatable to a maximum of 12 cr hrs or 4 completions. This course is graded S/U.**
- **Dissertation research and writing. Repeatable to a maximum of 36 cr hrs or 12 completions. This course is graded S/U.**
10 Agricultural Communication

5190 Extension Education in Developing Countries  U  G  3
What is extension and what are the problems, prospects and challenges facing extension in the developing world? The course provides an opportunity for students to explore issues related to extension in developing countries. Prereq: Not open to students with credit for AEE 790.

5193 Individual Studies  U  G  1 - 3
Students plan, conduct, and report on a special problem in agricultural communication not included in regular course work. Prereq: CPVR 2.50 or above, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 3 completions. This course is graded S/U.

5194 Group Studies  U  G  1 - 3
Selected topics in agricultural communication. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 5 completions. This course is graded S/U.

5197 Agricultural and Environmental Communication Study Abroad  U  G  1 - 2
Engages students in concentrated study of media practices in a foreign country, its agricultural, environmental and food systems issues and the role of the media in addressing those issues.

5530 Advanced Agricultural Communication Technology  U  G  3
Course is designed to further introduce students to practices and techniques used in computer-based electronic production when preparing informational and educational messages for public and student audiences in agriculture and natural resources. Prereq: Not open to students with credit for 350 or AEE 532.

5535 Data Visualization and Scientific Storytelling in FAES U  G  3
Introduction to design principles and skills needed to clearly and effectively report research results and technical information in both academic and nonacademic communication contexts in food, agricultural, and environmental sciences.

5797 Study Abroad in Agricultural Communication  U  G  3
Engages undergraduate and graduate students in an international learning experience to address their academic and professional interests in agricultural communication. Course objectives and topics will vary based on the country explored and the focus of the experience.

Agricultural Communication, Education & Leadership

7000 Graduate Orientation Seminar  G  1
Examination of scholarship in the discipline of agricultural and extension education. Discussion of trends and issues that are important in the disciplines and how trends may influence future career roles. Prereq: Not open to student with credit for 795.07. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

7230 Strategic and Program Planning for Visionary Change  U  G  3
Examination of strategic and program planning models in educational and community settings. Learn about the strategic and program planning process. Understand change and innovation processes in organizational settings. Prereq: Not open to students with credit for 723 and 823.

7300 Advanced Methods of Teaching  U  G  3
Designed as advanced preparation for instruction in formal learning environments, this course focuses on skills, strategies and issues common to educators in general. It will introduce learners to literature and research relevant to practicing educators. Delivered online in an asynchronous format via Carmen, will allow for information transfer and consumption.

7320 Adult Learning and Professional Development  U  G  3
This course is designed to provide an introduction to adult learning and professional development to ensure effective programs and education with adult audiences. Prereq: Not open to students with credit for 622.

7420 Emerging Trends and Issues in Agricultural Communication, Education, and Leadership  U  G  2
Participants in this course will gain an understanding of global issues and trends facing contemporary agricultural and extension organizations, communication and leadership. Repeatable to a maximum of 4 cr hrs.

7520 Human Development and Program Planning  U  G  2
Course provides an introductory understanding of human development and why it is essential for planning programs to serve youth and adults in non-formal and formal education.

7700 Documenting Change through Evaluation and Accountability  U  G  3
The key principles and practices used in evaluating the change resulting from educational programs and activities, and how that relates to programming accountability will be covered. Prereq: Not open to students with credit for 770.

7889 Workshop in Agricultural and Extension Education  U  G  1 - 3
Intensive study of selected programs, practices, and skills with an emphasis on applications in agricultural and extension education. Prereq: Teaching or extension experience. Repeatable to a maximum of 18 cr hrs or 18 completions.

8000 Leading Through Historical Perspectives  G  2
This course will examine the mission, purpose, and historical foundations of Agricultural Communication, Education, and Leadership in America. Furthermore, this course will identify the historical trends and contemporary issues facing these professions in the 21st century.

8100 Applied Communication Theory and Practice  G  3
A study of the theories and guiding concepts related to agricultural communication in applied and theoretical settings. Prereq: Grad standing. Not open to students with credit for 840.

8193 Individual Studies  G  1 - 5
Planning, conducting, and reporting a special study appropriate to the needs of the individual student. Repeatable to a maximum of 5 cr hrs or 5 completions. This course is progress graded (S/U).

8200 Critical Perspectives in Leadership Development  U  G  3
This course will cover the scholarly discipline of leadership theory, based upon critical social theories which are concerned with the flow of power in society, common sense assumptions of rules that govern our experiences, and the influence of social identities. In addition, students will apply theory to practice to address the real world leadership issues within their field.

8310 Theory of Learning and Cognition  U  G  3
AEE 8310 provides a framework for the theoretical development of cognitive skills, psychomotor principles, and teaching methods relevant to teaching agricultural content. Prereq: Ph.D. student in AEE, or permission of instructor.

8420 Leadership and Administration in Agricultural and Extension Education  U  G  3
Focuses upon theories, concepts, and principles for leadership, administration, and management in communication, education, extension, and community settings. Prereq: Not open to students with credit for 795.03 or 842.

8850 Research Methods  U  G  2
Principles and techniques of research appropriate for planning, conducting, and reporting research in applied social and life sciences. Prereq: Not open to students with credit for 885.

8851 Research Proposal I  U  G  1
Companion course with 8850 in which students prepare a draft of chapter one for their theses/dissertation research. Students will be supervised by their graduate advisor in collaboration with the 8890 instructor. Concur: 8850. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

8855 Research Methods and Design  U  G  3
This course is designed to establish a culture of scholarship among students enrolled in the Agricultural Communication, Education, and Leadership graduate program. This course provides an overview of different types of quantitative research methods and design, qualitative and mixed methods approaches, and the basics of interpreting statistics and rational research.

8860 Research Design  U  G  2
Development of effective design for research problems in applied social and life sciences, including theory, models, and sampling. Prereq: Not open to students with credit for 886.

8861 Research Proposal II  U  G  1
Companion course with 8860 in which students prepare a draft of chapter three for their theses/dissertation research. Students will be supervised by their graduate advisor in collaboration with the 8890 instructor. Concur: 8860. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

8870 Analysis and Interpretation of Data  U  G  2
Analysis and interpretation of descriptive and inferential statistics for research in applied social and life sciences. Prereq: Not open to students with credit for 887.

8875 Data Analysis and Interpretation Laboratory  U  G  1
Learn SPSS statistical data analysis computer program for application and interpretation of descriptive and inferential statistics in research. Concur: 8870. Not open to students with credit for 795.05. This course is graded S/U.

8877 Data Collection, Analysis & Interpretation  U  G  3
A quantitative methods course in measurement, data collection and analysis related to social and behavioral science research. An applied approach is taken on instrumentation and analyzing data using descriptive and inferential statistics. Practical skills in data manipulation using SPSS are developed. Prereq: 8855 or equiv.

8880 Instrumentation and Procedures for Data Collection  U  G  2
Selection, development, and analysis of various types of instruments and procedures for collecting research data. Prereq: 8850 (885). Not open to students with credit for 888.

8998 Graduate Research  U  G  1 - 3
Graduate student research that is not part of a thesis or dissertation. Repeatable to a maximum of 12 cr hrs or 12 completions. This course is graded S/U.
Agricultural Communication, Education & Leadership 11

Research for thesis or dissertation purposes only.
Repeatable to a maximum of 12 cr hrs or 12 completions. This course is progress graded (S/U).

1100 Exploring Agricultural Systems Management
Basic understanding of the global trends within agricultural systems management, the diversity of career opportunities within the industry, planning for a career and opportunities for professional development.
Prereq: CPHR 2.5 or above, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

2194 Group Studies
Introductory group study of selected topics in Agricultural Systems Management.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 4 completions.

2240 Basic Metal Fabrication for Agriculture
A study of the principles and practices in basic metal fabrication using the current metallurgical and welding processes required in the agricultural industry.
Prereq: AgSysMt 1100 and FAES 1100 (100), or one of the other university survey courses. Not open to students with credit for AgSysMt 240 or ConSysMt 2240 (ConSysMt 240). This course is available for EM credit.

2241 Building Materials and Construction in Agriculture
Principles and techniques used in the fabrication of wood, concrete, and masonry materials used in agr-business and agricultural applications.
Prereq: Not open to students with credit for AgSysMt 241 or ConSysMt 2241 (ConSysMt 241).

2305 Professional Development I
Business communications and professional development in agricultural systems management including job search strategies, informative and persuasive writing, academic planning, collaboration, project documentation and reporting, and presentations.
Prereq: English 1110. Not open to students with credit for ConSysMt 2305. This course is available for EM credit.

2310 Electrical Power for Agricultural and Residential Applications
Concepts of electricity applied to the planning and specification of systems and components essential for generation, distribution and control of electricity for power, heat, motors and illumination in residences and agricultural structures.
Prereq: Not open to students with credit for ConSysMt 2310. This course is available for EM credit.

2370 Environmental Hydrology
Principles of hydrology applied to agricultural and forested lands, including applications in drainage, erosion, irrigation, water supply and water quality.
Prereq: Not open to students with credit for AgSysMt 370. This course is available for EM credit.

2371 Land Surveying for Agricultural and Environmental Systems
Principles of land surveying applied to soil and water management on agricultural, forested, and environmentally sensitive areas. Traditional surveying methods, total stations and GPS will be covered.
Prereq: Math 1148 (148), or permission of instructor. Concur: Physics 1103 (103), 1200 (111), or 1250 (113). Not open to students with credit for AgSysMt 371. This course is available for EM credit.

2580 Introduction to Digital Agriculture
An introduction to digital agriculture and the data acquisition and data management systems, analytical tools, machinery systems and crop, animal and environmental models utilized in this rapidly evolving field to enhance the profitability and sustainability of agricultural crop and livestock production systems.

3191 Internship in Agricultural Systems Management
A pre-approved internship of planned and supervised work experiences which provide professional and technical growth in the agricultural industry.
Prereq: AgSysMt 2305 (AgSysMt 305), and enrollment in AgSysMt major, and 8 cr hrs in AgSysMt, and permission of internship coordinator. Not open to students with credit for AgSysMt 499.

3232 Engines and Power Transmission
Principles of engine theory, operation, maintenance, and repair. In addition, alternative fuels, engine design and basic power transmission will be explored.
Prereq: Math 1130 (130) or 1148 (148), and Physics 1103 (103), 1200 (111), or 1250 (131); or enrollment in Sustainable Plant Systems major or Landscape Construction minor. Not open to students with credit for AgSysMt 232. This course is available for EM credit.

3230 Facilities for Agricultural and Greenhouse Production
Building and equipment design for livestock, crop and greenhouse production; selection and specification of construction materials and ventilation systems.
Prereq: Math 1148 (148), and Physics 1103 (103), 1200 (111), or 1250 (131). Not open to students with credit for AgSysMt 320.

3330 Grain Handling, Drying, and Milling
Principles of handling, drying, storing, and milling grain. Grain handling equipment will include grain bins, conveyors, augers, bucket elevator, and hazard monitoring. Drying and storage will include driers, in-bin counterflow drying, batch and continuous flow systems. Dry milling principles will include methods, applications, and parameters such as separation of particle size by sieve.
Prereq: Math 1130, 1131, 1148, 1149, 1150, or 1151.

3360 Agricultural Machinery Management
Basic principles of operation, selection and management of agricultural machinery, including power requirements, performance evaluation, calibration, adjustment, costs of operation and optimum size.
Prereq: Math 1148 (148), or permission of instructor. Not open to students with credit for AgSysMt 360.

3400 Food Supply-Chain Equipment Operations
The focus of this course is description of equipment used throughout the food supply chain from harvest/assembly to preparation for consumption. After completing this course, students will recognize how equipment systems are assembled within a facility and the role of sensing and control systems in operation of facilities for handling, manufacturing, storage, distribution and preparation of foods.
Cross-listed in FdScTe.

3550 Animal and Rural Waste Management
Management of animal wastes, wastewater and solid waste generated through agricultural practices and rural living to utilize nutrients, recover energy, reuse water, protect public health and abate environmental pollution.
Prereq: Not open to students with credit for AgSysMt 3550.

3580 UAS and Remote Sensing in Agriculture
Introduction to Unmanned Aerial Systems (UAS) and remote sensing applications in production agriculture. Topics include: UAS basics, FAA regulations and rule making; mission planning; image sensing technologies, image collection, processing, analyses and interpretation; and agricultural applications.
Prereq: Jr standing, or permission of instructor.

4193 Individual Studies
Advanced individual study of problems and topics not included in regular Agricultural Systems Management courses.
Prereq: CPHR 2.5 or above, and permission of instructor. Repeatable to a maximum of 8 cr hrs or 4 completions. This course is graded S/U.

4194 Group Studies
Advanced group studies of selected topics in Agricultural Systems Management.
Prereq: Permission of instructor. Repeatable to a maximum of 8 cr hrs or 4 completions.

4300 Engineering Applications in Agriculture
Engineering and technology applications essential to the operation, selection and management of the processes, machinery, structures, soil and water, and materials handling systems in agriculture.
Prereq: Math 1130 (130) or 1148 (148). Not open to students with credit for 310 or students enrolled in AgSysMt or Eng.

4560 Fluid Power and Electronics in Agricultural Machinery
Principles of operation, maintenance, and selection of basic fluid power, electrohydraulic, electronic and computer controlled systems found on agricultural and construction machinery.
Prereq: AgSysMt 2310 (AgSysMt 310) and 3360 (360). Not open to students with credit for AgSysMt 560.

4575 Applied Agricultural Water Management
Planning and managing the drainage, irrigation, erosion and sediment control, water harvesting and storage systems and agricultural constructed wetlands for the agricultural landscape.
Prereq: AgSysMt 2370 (AgSysMt 370) and 2371 (371); or ConSysMt 2440 (ConSysMt 440); and ENR 3000 (300.01); or permission of instructor. Not open to students with credit for AgSysMt 575.

4580 Precision Agriculture
Introduction to the principles and technologies of precision agriculture including: Global Positioning System (GPS), guidance systems, plant and soil sensors, soil sampling, yield mapping and related technologies.
Prereq: Not open to students with credit for AgSysMt 580.

4605 Professional Development II
Developing and pursuing career plans; strategies and programs for employment in the agricultural industry, professional development, personal growth, and relationships.
Prereq: 2305 (AgSysMt 305), 3360 (AgSysMt 360), and AgrComm 3130 (390) or Comm 2110 (211), and any second writing course numbered 2367 (367). Not open to students with credit for AgSysMt 605.
12 Agricultural Systems Management

4900 Capstone in Agricultural Systems Management I  U  2
The course is designed to prepare students on how to work with customers/sponsors/industry mentors to identify the need (problem), begin the steps to develop plausible solutions, develop a scope of work (action plan), and to assemble their findings into a proposal (Preparation for project implementation that will take place the following spring in AgSysMgt 4910).
Prereq: Jr or Sr standing, and enrollment in AgSysMgmt major; or permission of instructor (scheduled to graduate in the next three semesters).

4910 Capstone II - Project Implementation  U  2
Building upon prior knowledge and experiences gained through the major, students will develop plausible solution(s) to a real-world problem that relates directly to student's interests and general area of study.
Prereq: 4900.

4998 Undergraduate Research  U  1 - 3
Supervised undergraduate research on various topics.
Prereq: CPHR 2.5 or above and permission of the instructor. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

4999 Research with Distinction  U  1 - 3
Conducting and reporting research with Distinction. Students are expected to participate in the CFAES Undergraduate Research and the Denman University Undergraduate Research Forums.
Prereq: CPHR 3.0 or above, and major GPA 3.0 or above, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 3 completions. This course is progress graded (S/U).

4999H Honors Research with Distinction  U  1 - 3
Conducting and reporting Honors research with Distinction. Students are expected to participate in the CFAES Undergraduate Research and the Denman University Undergraduate Research Forums.
Prereq: Honors standing, and FAES 4590.01H (590H), and GPA 3.4 or above, and major GPA 3.4 or above, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 3 completions. This course is graded S/U.

5533 Laboratory Pedagogy and Management  U G  4
Develops the pedagogical and management skills required to efficiently utilize educational laboratory facilities at the secondary school level for teaching agricultural mechanics and science.
Prereq or concourse: ASE 5200 (AEE 530), and enrollment in AgrSciEdu Education major. Not open to students with credit for AgSysMgt 533.

5600 Agricultural Safety and Health  U G  3
Develops the knowledge, awareness and attitude necessary to becoming an effective safety manager in a non-traditional occupational environment. Includes hazard identification and mitigation; safety education, engineering, and enforcement strategies.
Prereq: Not open to students with credit for AgSysMgt 600.

5786 Environmental Issues in East Asia  U G  3
STEM students will study emerging, interdisciplinary environmental issues in China, Korea, Japan, Taiwan and Hong Kong, such as air and water pollution, waste management, habitat destruction, exotic species, and energy.
Prereq: Enrollment in a Science, Technology, Engineering or Math (STEM) discipline, and Jr, Sr, or Grad Standing.

7786 Introduction to Graduate - Level East Asian Studies  G  1
This interdisciplinary course is a combination of student explorations of scholarly work in East Asia and subjects in these cultures. Readings and presentations on the impact of STEM in the field. Students must be a part of the SUSTAINS Learning Community in order to take this seminar.
Prereq: Must be in the SUSTAINS Learning Community. This course is graded S/U. Cross-listed in ENR.

2001 Principles of Food and Resource Economics  U  3
Microeconomic principles applied to allocation issues in the production, distribution, and consumption of food and natural resource use.
Prereq: Not open to students with credit for 2001H or Econ 2001. This course is available for EM credit. GE soc sci human, nat, and econ resources course.

2001H Principles of Food and Resource Economics  U  3
Microeconomic principles applied to allocation issues in the production, distribution, and consumption of food and natural resource use.
Prereq: Honors standing, or permission of instructor. Not open to students with credit for 2001H, Econ 2001 (200), or 2001H (200H). GE soc sci human, nat, and econ resources course. SS Admis Cond course.

2005 Data Analysis for Agribusiness and Applied Economics  U  3
Introductory course in data analysis, stressring computer applications of probability and statistics, problems of data gathering, presentation, and interpretation in economics and business.
Prereq: Math 1130 (130) or 1131 (131) or 1148 (148) or 1150 (150) or 1151.01 (151.01) or 1151.02 (151.02) or 1156 (151.03). Not open to students with credit for 2005 (205) or Comldr 3537 (AgEdu 387 or AEE 387) or HCS 2260 (260) or AnimSci 2260 (260) or Stat 1430 (133) or 1450 (145). GE data only course.

2105 Managerial Records and Analysis  U  3
Nature and need for business records, analysis and interpretation of essential records from manager/owner viewpoint; their use in small business practices.
Prereq: 2001 or 2001H or Econ 2001.01, 2001.02, or 2001.03H. Not open to students with credit for AcctMIS 2210 or 2300.

2400 Diversity in the Workplace: Challenges and Opportunities
The purpose of this course is to examine how and why diversity affects interpersonal and intergroup interactions in organizations, to develop an understanding of what diversity means, and to explore contemporary organizational strategies for managing workplace diversity while working to better understand what we as individuals bring to the dynamic. GE diversity soc div in the US course.

2500 Introduction to Sustainability  U  3
Introduces students to principles from various disciplines related to social, economic and environmental sustainability. Students will evaluate key concepts and examine tradeoffs that are a part of sustainability action using case studies representing diverse perspectives.
Prereq: Soph standing, or permission of instructor. Cross-listed in ENR.

2580 Feast or Famine: The Global Business of Food  U  3
Global and regional trends in food consumption and production are surveyed. Trade, technological change, and other responses to food scarcity are analyzed.
Prereq: Not open to students with credit for 280 or 335 or IntStds 2580 (280). GE soc sci human, nat, and econ resources and diversity global studies course. Cross-listed in IntStds.

3000 Quantitative Methods in Agribusiness and Applied Economics
Solutions to problems in agribusiness and applied economics.
Prereq: 2001 or Econ 2001; and Math 1130, 1131, 1148, 1150, or 1151.

3101 Principles of Agribusiness Management  U  3
Introduction to agribusiness management principles and skills in the context of the four functions of management: planning, organizing, directing, and controlling.
Prereq: 2001 (200H) or 2001H (201H) or Econ 2001 (200) or 2001H (200H). Not open to students with credit for 401.

3102 Principles of Agribusiness Marketing  U  3
Study of specific problems of marketing food and fiber products with emphasis on structures and institutions facing agribusinesses in domestic and international markets.
Prereq: 2001 (200), 2001H (200H), Econ 2001 (200), or 2001H (200H). Not open to students with credit for 402.

3103 Principles of Agribusiness Finance  U  3
Financial management of agribusinesses: financial system, time value of money, security valuation, capital budgeting, capital structure, portfolio analysis, financial institutions, futures and options contracts.
Prereq: 2001 (200), 2001H (200H), Econ 2001 (200), or 2001H (200H); and AEDEcon 2105 (412) or AcctMIS 2200 (211); and AEDEcon 2005 (205). AEE 387, AnimSci 2260 (260), ComEmb 3537, HCS 2260 (260), Stat 1430 (133), or 1450 (145). Not open to students with credit for 403.

3104 Farm Business Management  U  3
Analysis of resource control and detailed application of economic and management principles to the organization, operation, and administration of farm businesses.
Prereq: 3101 (401). Not open to students with credit for 410.

3105 Principles of Agribusiness and Food Supply Chains  U  3
Study of the actors, intrinsic issues and support systems that are essential to make agribusiness, commodity and food supply chains effective.
Prereq: 2001 or Econ 2001.

3113 Commodity Futures and Options Markets  U  2
Institutional structure, allocative function, and managerial applications of commodity futures and options markets.
Prereq: 2001, 2001H, Econ 2001.01, or 2001.03H; and Math 1130 or 1148. Not open to students with credit for 5250.

3121 Salesmanship in Agribusiness and Agriculture  U  2
Principles and techniques of selling to agribusiness buyers.
Prereq: 2001 (200), 2001H (201H), Econ 2001 (200), or 2001H (200H). Not open to students with credit for 421.
3123 Grain Merchandising U 2
Principles and practices involved in grain and feed marketing and the theory of grain pricing; economics of grain marketing.
PreReq: Math 1130 or 1148. PreReq or Concur: AEDEcon 3113.

3131 Advanced Sales Techniques and Practice U 2
Expands on basic sales principles with additional emphasis on required skills to establish long term customer-client relationships in today's business context.
PreReq: 3121.

3141 Agricultural Cooperatives U 2
Basic principles of cooperatives including types of organizations, legal aspects, membership relations, debt and equity financing, organizational and inter-cooperative problems, and distribution of earnings.
PreReq: 2001, 2001H, Econ 2001, or 2001H. Not open to students with credit for 441 or 541.

3160 Human Resource Management in Small Businesses U 3
Students will gain an understanding of the human resource management function in the context of the small business. Emphasis is placed on strategies employed by small business owners to address shifts in workforce demographics, professional expectations, legal requirements, and contemporary workforce issues.
PreReq: Jr standing.

3170 Agribusiness Law U 3
A study of the legal system and selected areas of law that affect agricultural types of businesses, including civil liabilities, property law, business law and regulatory law.
PreReq: 2001 (200), 2001H (200H), Econ 2001 (200), or 2001H (201H). Not open to students with credit for 470 or 670.

3191 Internship in Agribusiness and Applied Economics U 2
Supervised experience with an approved firm or organization; pre-approved proposal and report or presentation are required.
PreReq: 3101, 3102, 3103, 4001, or Econ 4001, and enrollment in department major, and permission of instructor. PreReq or Concur: AEDEcon 3181. This course is graded S/U.

3488 Professional Development in Agribusiness and Applied Economics 1 - 2 U
Participation in structured co-curricular programs leading to professional development.
PreReq: CPHR 2.0 or above, and permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

3680 Regional Economics and Sustainable Growth U 3
Designed to study theories and methodologies for analyzing rural and regional economic development, primarily in advanced economies.
PreReq: 2001 (200), or equiv course in Microeconomics.

4001 Managerial Economics for Agribusiness U 3
Application of economic theory and methods to agribusiness decision making.
PreReq: 3000, and 2001 or 2001H or Econ 2001 or 2001H.

4002.01 Econometric Applications in Agribusiness and Applied Economics U 3
Econometrics
Students will be introduced to and gain experience with quantitative statistical models and related methods and their application to agricultural, environmental and development economics and agribusiness.
PreReq: 2005 or AnimSci 2260 or ComLdr 3537 or HCS 2260 or Stat 1430 or 1450; and AEDEcon 2001 or 2001H or Econ 2001 or 2001H; and AEDEcon 3000. PreReq or Concur: AEDEcon 4001 or Econ 4001.02.

4002.02 Operations Research in Agribusiness and Applied Economics U 2
Quantitative models and methods and their application to agricultural, environmental, and development economics and agribusiness.
PreReq: 2005 (200), ComLdr 3537 (AEE 387), HCS 2260 (260), AnimSci 2260 (260), Stat 1145 (145), or 1430 (133); and AEDEcon 2001 (200) or 2001H (200H) or Econ 2001 (200) or 2001H (201H); and Math 1131 (131 [WI 03 or thereabouts]) or 1132 (132) or 1151.01 (151.01) or 1152.01 (152.01). PreReq or Concur: 4002.01, or Econ 4001 (500) and 4001.02 (501.02). Not open to students with credit for 502.

4003 Economics of Public Policy Analysis U 3
Understanding of economic tools and concepts for analyzing public policies important to the food industry, agriculture and natural resources.
PreReq: 2001 or 2001H or Econ 2001 or 2001H; and AEDEcon 3000. PreReq or Concur: 4001 or Econ 4001.02.

4100 Self-employment and Entrepreneurship in the Food, Agriculture, and Resource Sectors U 3
This course analyzes self-employment patterns in the food, agricultural, and resource sectors and considers the role of entrepreneurship in forming and reshaping business and social enterprises in these sectors.
PreReq: 2001 or Econ 2001.

4103 Advanced Agribusiness Finance U 2
Advanced financial management for farm businesses, agribusinesses, and cooperatives: financial analysis, time value of money, capital budgeting, risk and return, portfolio analysis, credit evaluation, and risk management.
PreReq or Concur: 3103, or BusFin 3120 or 3220.

4106 Strategic Management U 3
Experiential learning and managerial economics applied to strategic management in agribusiness. Formulate managerial strategies in a competitive environment constrained by the firm's products, internal resources, market segments, and supply chains.
PreReq: 3101 (401), 3103 (403), and 4001 (500), and a second writing course. Not open to students with credit for 601.

4191 EEADS Professional Practice in Agricultural, Environmental, and Development Economics U 2
Preparation of a written report and delivery of a presentation based on internship employment in sustainability-based professions.
PreReq: Not open to students with 2 completions or 4 credits of ENR 4191 or 689 or AEDEcon 4191. This course is graded S/U.

4193 Individual Studies in Agribusiness and Applied Economics U 2 - 3
Planning, conducting, and reporting a special problem in agricultural economics.
PreReq: CPHR 2.50 or above, and permission of instructor. Not open to students with 6 cr hrs in 4193 or 693.01-693.08. Repeatable to a maximum of 6 cr hrs or 2 completions. This course is graded S/U.

Selected topics in agricultural economics to acquaint students with current economic conditions.
PreReq: Permission of instructor. Not open to students with 10 cr hrs of 4194 (694-series). Repeatable to a maximum of 5 cr hrs or 2 completions. This course is graded S/U.

4310 Environmental and Natural Resources Economics U 3
This introductory course in environmental and natural resource economics provides an economic perspective to analyze contemporary issues in environmental protection and natural resource management.
PreReq: 2001 or Econ 2001.

4320 Energy, the Environment, and the Economy U 3
Understand the role of energy in the economy and the environment. Explore the economics of clean, renewable energy, and understand the different policies for pollution control.
PreReq: 2001 (200) or Econ 2001 (200). Not open to students with credit for 565 or IntStds 4320 (565). Cross-listed in IntStds 4320.

4320E Energy, the Environment, and the Economy U 3
Understand the role of energy in the economy and the environment. Explore the economics of clean, renewable energy, and understand the different policies for pollution control.

4330 The Sustainable Economy: Concepts and Methods U 3
Introduces students to core concepts of sustainability in economics and the quantitative methods necessary to understand and evaluate sustainable development.
PreReq: 4310.

4340 Project Management for Sustainability and Applied Economics U 3
An introduction to project management concepts and techniques focusing on how to initiate, plan, manage, control, and close projects related to sustainability and applied economics.

4532 Food Security and Globalization U 3
Examination of the causes of and solutions for food insecurity. Global and local factors that affect access to food are also considered.
PreReq: 2001 (200) or Econ 2001 (200), or permission of instructor. Not open to students with credit for 434 or 532, or IntStds 4532 or 434. Cross-listed in IntStds.

4534 Comparative Challenges to Economic Development: Sub-Saharan Africa, Latin America, and China U 3
An introductory course survey of issues shaping economic development in Sub-Saharan Africa, Latin America, and China, such as: population growth, agricultural development, industrialization, trade, structural adjustment, and environmental issues.
PreReq: 2001 (200), or 2001H (200H), or Econ 2001 (200), or 2001H (201H); and Math 1131 (131 [WI 03 or thereabouts]) or 1132 (132) or 1151.01 (151.01) or 1152.01 (152.01). PreReq or Concur: 4002.01, or Econ 4001 (500) and 4001.02 (501.02). Not open to students with credit for 502.

4535 International Economic Development U 3
Study of the growth and diversification of developing economies and the causes of poverty and inequality. Analyze the impacts of human capital formation, markets, and public policy on development.
PreReq: 2001 (200) or Econ 2001 (200). Not open to students with credit for 435 or 535, or IntStds 4535 (535) or 435, or PubAfrs 4535. Cross-listed in IntStds and PubAfrs.

4537 Middle Eastern Economic Development U 3
Introduction to current economic issues facing and similarities and differences in Middle Eastern countries' growth, inflation, unemployment, fiscal and monetary policy, imports, exports, foreign debt and exchange rate policy.
PreReq: 2001 (200) or Econ 2001 (200). Not open to students with credit for 437 or 4537 (537), or Econ 4537 (537), or IntStds 437 or 4537 (537). Cross-listed in Econ and IntStds.
14 Agricultural, Environmental, and Dev Economics

4540 International Commerce and the World Economy U 3
Application of trade theory and policies to world trade that impacts global business.
Prereq: 2001 (200) or 2501H (200H), or Econ 2001 (200) or 2011H (200H), or permission of instructor.
Not open to students with credit for 540 or IntStds 4540 (540). Cross-listed in IntStds.

4567 Assessing Sustainability: Project Experience U 3
Students gain experience in sustainability assessment by applying concepts and quantitative methods to evaluate environmental, economic, social & technical sustainability of specific projects. EEDS major capstone. Co-taught by ENR/AEDE faculty.
Prereq: 2500 or ENR 2500, and Sr standing; or permission of instructor. Not open to students with credit for ENR 4567. Cross-listed in ENR.

4597.01 Food, Population, and the Environment U 3
Issues related to world-wide population increases, food production, and associated environmental stress; policy options for lessening these concerns, especially in low-income countries.
Prereq: Jr or Sr standing. Not open to students with credit for 597.01, 4597.01H (597.01H), IntStds 4597.01 (597.01), or 4597.01H (597.01H). GE cross-disciplinary seminar course. Cross-listed in IntStds.

4597.01H Food, Population, and the Environment U 3
Issues related to world-wide population increases, food production, and associated environmental stress; policy options for lessening these concerns, especially in low-income countries.
Prereq: Honors standing, and Sr standing; or permission of department or instructor. Not open to students with credit for 597.01, 4597.01H (597.01H), IntStds 4597.01 (597.01), or 4597.01H (597.01H). GE cross-disciplinary seminar course. Cross-listed in IntStds.

499 Research With Distinction U 1 - 3
Conducting and reporting research with Distinction. Students are expected to present at the CFAES Undergraduate Research Forum and the Denman University Undergraduate Research Forum.
Prereq: CPRH 3.0 overall, and GPA 3.0 or above in major, and permission of project supervisor. Not open to students with credit for 683H. Repeatable to a maximum of 6 cr hrs or 3 completions. This course is graded S/U.

4999H Honors Research With Distinction U 1 - 3
Conducting and reporting the honors research with distinction. Students are expected to present at the CFAES Undergraduate Research and the Denman University Undergraduate Research Forums.
Prereq: Honors standing, and FAES 4590.01H (590.01H), and CPRH 3.4 or above, and GPA 3.4 or above, and permission of honors project supervisor. Repeatable to a maximum of 6 cr hrs or 3 completions. This course is graded S/U.

5330 Benefit-Cost Analysis U G 3
Benefit-cost analysis theory and methods and their application to projects pertaining to public infrastructure, agriculture, the environment, natural resources, and human health.
Prereq: 4310 (531). Not open to students with credit for 6330 or 6331.

5500 Agribusiness and Applied Economics Project Experience U G 3
Field projects with participating organizations that require application of one or more key principles of agribusiness management or applied economics.
Prereq: 3101, 3102, 3103, and permission of instructor. Repeatable to a maximum of 6 cr hrs.

5797 Study at a Foreign Institution U G 1 - 15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Prereq: Permission of dept. chairperson. Repeatable to a maximum of 25 cr hrs or 3 completions.

5900 Food System Planning and the Economy U G 3
Examines the social, environmental and economic costs and benefits of our food production, distribution, and consumption.
Prereq: Not open to students with credit for CRPlan 5900 or PubAfrs 5900. Cross-listed in CRPlan and PubAfrs.

6110 Applied Quantitative Methods I G 4
Application of econometric and time series method to the analysis of problems in agricultural, environmental, and development economics.
Prereq: 4001 (500) or Econ 4001 (501), and 2005 (205) or Stat 1430 (133). Not open to students with credit for 701.

6120 Applied Quantitative Methods II G 4
Application of mathematical programming and statistical methods to the analysis of problems in agricultural, environmental, and development economics.
Prereq: 4001 (500) or Econ 4001 (501), and 2005 (205) or Stat 1430 (133). Not open to students with credit for 702.

6130 Applied Quantitative Methods III G 4
This course builds upon the applied econometric content in AEDE 6110 by introducing complementary practical methods of data analytics. Topics include data exploration and visualization, model selection and regularization for high dimensional data, supervised and unsupervised machine learning methods. Lectures and labs will feature discussion of technical concepts and computer applications.
Prereq: 6110, or permission of instructor.

6194 Group Studies G 1 - 4
Analysis of special problems in agricultural, environmental, and development economics by various students, under the guidance of an instructor.
Prereq: Permission of instructor. This course is graded S/U.

6200 International Economics and Policy G 3
Application of economic theory and methods to current problems in international economics, policy and trade.
Prereq: 4001 (500) or Econ 4001 (501). Not open to students with credit for 734.

6300 Environmental and Resource Economics G 3
Application of economic theory and methods to current problems in environmental and resource economics.
Prereq: 4001 (500) or Econ 4001 (501). Not open to students with credit for 831.

6330 Benefit-Cost Analysis G 3
Calculus-based benefit-cost analysis theory and methods and their application to projects pertaining to public infrastructure, agriculture, the environment, natural resources, and human health.
Prereq: Math 1131 (131) or 1151 (151).

6400 Regional and International Development G 3
Application of economic theory and methods to current problems in regional and international economic development.
Prereq: 6010 or 4001 (500), or Econ 4001 (501). Not open to students with credit for 833.

6401 International Economic Development G 3
This course is an introduction to international development economics. The goals of this course are to familiarize students with basic theoretical concepts relating to growth and development, the current empirical evidence, and various approaches for policy design and evaluation.
Prereq: 4001, 6010, or Econ 4001.02.

6500 Foundations of Data-Driven Sustainable Energy Systems G 3
Introduction to issues impacting sustainable energy systems across technology, law and policy, business models, resilience, data, geospatial, and decision sciences.
Prereq: Enrollment in Data-Driven Sustainable Energy Systems Graduate Interdisciplinary Specialization, or permission of instructor. Not open to students with credit for EnvEng 6020, FABEng 6020, Geog 6020, ISE 6020, PubAfrs 6020. Cross-listed in EnvEng 6020, FABEng 6020, Geog 6020, ISE 6020, and PubAfrs 6020.

7110 Advanced Quantitative Methods I G 3
Application of advanced mathematics and mathematical optimization methods to problems in agricultural, environmental, and development economics.
Prereq: 5001 (500) or Econ 4001 (501).

7120 Advanced Quantitative Methods II G 3
Theoretical formulation and numerical analysis of stochastic dynamic models in agricultural, environmental, development and financial economics.
Prereq: 4001 (500) or Econ 4001.01 (501.01).

7130 Applied Econometrics I G 3
A rigorous introduction to techniques of econometric analysis with applications to empirical problems in agricultural, environmental, and development economics.
Prereq: 4001 (500) or Econ 4001 (501). Not open to students with credit for 801.

7140 Applied Econometrics II G 3
Special topics pertaining to the application of econometric methods to empirical problems in agricultural, environmental, and development economics.
Prereq: 7130 and Econ 8712 (804), or equiv.

7130 Advanced Environmental Economics G 3
Application of advanced economic theory and methods to the allocation of environmental goods and services.
Prereq: Econ 8712 (804). Not open to students with credit for 831.

7320 Advanced Resource Economics G 3
Application of advanced economic theory and methods to the allocation and optimal management of exhaustible and renewable natural resources.
Prereq: Econ 8712 (804).

7410 Advanced Regional Economics I G 3
Application of advanced economic theory and methods to problems of regional economic development.
Prereq: Econ 8712 (804). Not open to students with credit for 840.

7415 Advanced Regional Economics 2 G 3
Application of advanced economic theory and methods to problems of regional economic development. Continuation of AEDEcon 7410.
Prereq: Econ 8712.

7421 Advanced Development Economics I G 3
Application of advanced economic theory and methods to problems of international economic development.
Prereq: Econ 8712 (804). Not open to students with credit for 840.
**Agricultural, Environmental, and Dev Economics** 15

**7425 Advanced Development Economics II** G 3
Application of advanced economic theory and methods to problems of international economic development. Continuation of AEDEcon 7421.
Prereq: Econ 8712 (0.34). Not open to students with credit for 8401.

**7890 Workshop on Microeconomic Analysis** G 2
Review and synthesis of advanced microeconomic theory and methods. For first-year AEDEcon PhD students preparing for microeconomics qualifying examination.
Prereq: PhD standing in AEDEcon, and permission of instructor. This course is graded S/U.

**7999 Thesis Research** G 1 - 18
Individual research for thesis or Plan B paper.
Prereq: MS student in AEDEcon. Repeatable to a maximum of 36 cr hrs or 10 completions. This course is graded S/U.

**8101 Applied Welfare Economics** G 4
This course will explore questions of how we can use welfare analyses to evaluate policy and inform public policy debates. It takes an applied approach to welfare economics and its application to issues of public policy.
Prereq: 7140, Econ 8714, and 8732; or permission of instructor.

**8102 Advanced Applied Econometrics** G 4
This course is designed to introduce you to advanced applied econometric techniques essential for PhD level applied research. We will focus on the applied econometrics, reading, writing and problem-solving skills necessary for you to begin to do your own research.
Prereq: 7140, Econ 8714, and 8732; or permission of instructor.

**8103 Seminar Readings in Applied Economics** G 4
This course introduces students to seminal readings in the fields of Agricultural, Environmental, Development and Regional Economics. Students are introduced to a set of seminal readings in each field and are introduced to the critical skills necessary to critically analyze, review, and translate these readings into research proposals.
Prereq: 7140, Econ 8714, and 8732; or permission of instructor.

**8193 Individual Studies** G 1 - 4
Analysis of special problems in agricultural, environmental, and development economics by an individual student, under the guidance of an instructor.
Prereq: Permission of instructor. Repeatable to a maximum of 27 cr hrs. This course is graded S/U.

**8194 Group Studies** G 1 - 4
Analysis of special problems in agricultural, environmental, and development economics by various students, under the guidance of an instructor.
Prereq: Permission of instructor. This course is graded S/U.

**8200 Frontiers of AED Economics** G 1 - 6
Critical discussion of seminal and innovative scholarly research in agricultural, environmental, and development economics.

**8201 Advanced Agricultural Economics** G 2
This course provides students with an overview and an understanding of the theory guiding production economics as applied to agricultural problems and of the empirical methodologies used to study agricultural production problems.
Prereq: 7140, Econ 8714, and 8732; or permission of instructor.

**8202 Agricultural Finance** G 2
This course will focus on the application of financial theories to agricultural economics. Topics include asset pricing, capital structure, capital budgeting, risk, financial stress, and financial institutions.
Prereq: 7140, Econ 8714, and 8732; or permission of instructor.

**8203 Frontiers of Agricultural and Food System Economics** G 2
This course will provide students with theoretical foundations that are relevant to settings both within and outside the subfield of agricultural economics, practice in contemporary methods of empirical analysis, and exposure to both current topics of interest in agricultural economics.
Prereq: 7140, Econ 8714, and 8732; or permission of instructor.

**8204 Advanced Topics in International Economics** G 2
This course will focus on careful study of a set of seminal articles in international economics. Topics will include Ricardian model of trade, heterogenous firms and trade, applied general equilibrium and the gravity model and more.
Prereq: 6200 or Econ 8061; or permission of instructor.

**8301 Frontiers in Resource Economics** G 2
The course will focus on the theory of renewable resource economics, the seminal papers in the field, and will include contemporary issues and advanced topics such as spatial-economic problems and coupled human-natural systems.
Prereq: 7140, Econ 8714, and 8732; or permission of instructor.

**8302 Nonmarket Valuation** G 2
This course is designed to introduce you to the literature and applied econometric methods needed for nonmarket valuation in Environmental and Resource Economics. Specific topics covered include: Hedonic valuation and real estate markets, Rosen-Roback and quality of life, equilibrium models of location choice, and developing software to estimate cutting-edge econometric models.
Prereq: 7140, Econ 8714, and 8732; or permission of instructor.

**8303 Climate Change Economics** G 2
This course will provide students an in-depth exploration of theoretical concepts, methodological advances, and contemporary issues in climate change economics.
Prereq: 7140, Econ 8714, and 8732; or permission of instructor.

**8304 Econometric Methods for Environmental Valuation** G 2
This course is designed to introduce you to the econometrics methods needed for stated and revealed nonmarket valuation in Environmental and Resource Economics.
Prereq: 7140, Econ 8714, and 8732; or permission of instructor.

**8401 Human Capital** G 2
This course covers the key theories and empirical evidence surrounding investments in human capital. Topics include labor markets, nutrition and health, schooling and education, migration, population and fertility, and intra-household allocation.
Prereq: 7140, Econ 8714, and 8732; or permission of instructor.

**8402 Econometrics in Development** G 2
This class will cover cutting edge topics and econometric methods in the development economics literature, examining new methods around IVs, popular machine learning techniques, and non-classical measurement error.
Prereq: 7140, Econ 8714, and 8732; or permission of instructor.

**8403 Finance in Economic Development** G 2
This is a doctoral-level course devoted to the microeconomics of risk, saving, credit, and insurance in international economic development, based on critical reading and discussion of seminal and frequently-cited scholarly papers.
Prereq: 7140, Econ 8714, and 8732; or permission of instructor.

**8407 Program Evaluation** G 2
The course is intended as an introduction to program evaluation methods using examples from the environmental and development economics literature. It will cover the basic concepts and methods underlying research on policy analysis in developed and developing countries, with a particular emphasis on implementing common program evaluation techniques.
Prereq: 7140, Econ 8714, and 8732; or permission of instructor.

**8501 Frontiers in Regional Economics** G 2
This course is designed to acquaint you to the frontiers in regional, urban, spatial and rural economics as well as historical background of current research. We will gain an understanding of the key models that describe regional and urban economics. We will then explore key empirical approaches that underlie regional and urban economics.
Prereq: 7140, Econ 8714, and 8732; or permission of instructor.

**8502 Frontiers in Urban and Spatial Economics** G 2
This course builds on AEDEcon 8501 Frontiers in Regional Economics and is designed to further introduce you to topics in urban and spatial economics. The focus will be on applied economic papers on key topics, most of which have a spatial dimension - e.g., they use spatial data, ask interesting questions about space, or seek to account for space in some way.
Prereq: 7140, Econ 8714, and 8732; or permission of instructor.

**8601 Applied Economic Dynamics** G 2
The course will focus on the formulation, solution, and analysis of dynamic economic models arising in agricultural, environmental, development, regional and financial economics. Students will be introduced to methods to formulate, solve and analyze dynamic economic models.
Prereq: 7140, Econ 8714, and 8732; or permission of instructor.

**8602 Advanced Computational, Mathematical, and Quantitative Methods Applied to Economics** G 2
This course will focus on advanced mathematical, statistical, and computational methods and their application to the formulation, solution, and analysis of economic models arising in agricultural, environmental, development, and regional economics.
Prereq: 7140, Econ 8714, and 8732; or permission of instructor.

**8603 Survey Methodology** G 2
This course will focus on the theory and practices of survey design and fielding. Emphasis will be given to reducing hypothetical bias, incentive compatibility, as well as sampling error.
Prereq: 7140, Econ 8714, and 8732; or permission of instructor.

**8800 Seminar in AED Economics** G 1
Critical discussion of current academic research in agricultural, environmental, and development economics.
Prereq: Grad standing in AEDEcon. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**8890 Workshop on Research Methods** G 2
Preparation of research manuscripts in agricultural, environmental, and development economics.
Prereq: PhD standing in AEDEcon, and permission of instructor. This course is graded S/U.

**8895 PhD Research Seminar** G 1 - 4
PhD Students presenting and discussing research in agricultural, environmental, and development economics under the guidance of an instructor.
Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

**8999 Thesis and Dissertation Research** G 1 - 16
Individual research for doctoral dissertation.
Prereq: PhD candidate in AEDEcon. Repeatable. This course is graded S/U.
Agriscience Education

2189 Early Experience in Agriscience Education U 1
The early experience program is designed to help students explore careers and gain experience in Agriscience Education.
Prereq: Not open to students with credit for AEE 280.

2193 Individual Studies U 1 - 3
Planning, conducting, and reporting a special study appropriate to the needs of the student.
Prereq: CPHR 2.5 or above, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 3 completions. This course is graded S/U.

2194 Group Studies U 1 - 5
Group studies for students in specialized programs. Repeatable to a maximum of 10 cr hrs or 5 completions.

3488 Professional Development in Agriscience Education U 1 - 3
Developing Twenty-first Century skills through hands-on, contextual, and authentic, out-of-class experiences. Students, working individually with the instructor, will design and engage in developmental skill activities. Repeatable to a maximum of 3 hrs or 3 completions. This course is graded S/U.

4189 Context-Based Learning in Agriscience Education U 1
Agriscience education students will be immersed in advanced field experience, documenting hours toward initial teacher licensure. ASE 4189 will provide students the opportunity to further understand and develop best practices in teaching and learning centered around youth development and experiential learning within authentic agriscience education learning environments.
Prereq or concur: 5210.

4194 Group Studies in Agriscience Education U 1 - 3
Specialized topics in Agriscience Education. Repeatable to a maximum of 10 cr hrs or 3 completions.

4220 Methods of Teaching Agriscience I U 1 - 3
An introductory instructional methodology course focused on analyzing the principles of teaching and learning, and designing instruction for teaching agriscience education in a formal classroom environment.

4998 Undergraduate Research U 1 - 10
Conducting and reporting an undergraduate research project.
Prereq: Permission of instructor. This course is graded S/U.

4999 Research with Distinction U 1 - 6
Conducting and reporting research with distinction. Students are expected to present at the CFAES Undergraduate Research Forum and the Denman University Undergraduate Research Forum.
Prereq: CPHR 3.0 or above, and GPA 3.0 or above, and permission of project supervisor. Repeatable to a maximum of 6 cr hrs or 3 completions. This course is graded S/U.

5189 Planned Field Experience U G 1 - 2
Agriscience education M.Ed. students will be immersed in planned field experience, documenting hours toward initial teacher licensure. ASE 5189 will provide students the opportunity to further understand and develop best practices in teaching and learning centered around youth development and experiential learning within agriscience education.
Prereq: Admission to the M.Ed. program. Repeatable to a maximum of 2 cr hrs or 2 completions.

5193 Individual Studies in Agriscience Education U G 1 - 3
Planning, conducting, and reporting a special study appropriate to the needs of the student.
Prereq: CPHR 2.50 or above, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 3 completions. This course is graded S/U.

5194 Group Studies U G 1 - 3
Group studies for students in specialized programs. Repeatable to a maximum of 10 cr hrs or 5 completions.

5210 Youth Development and Experiential Learning within Agriscience Education U G 2
This course provides pre-service agricultural education candidates philosophies and mechanisms for youth engagement within a comprehensive agricultural education program. Through the exploration of Positive Youth Development and Experiential Learning Theory, pre-service candidates will explore youth engagement through individual program components and intracurricular experiences.
Prereq: 4220, and Jr standing.

5220 Methods of Teaching Agriscience II U G 3
Agriscience Education

5230 Methods of Teaching in Agriscience Education U G 3
Examining the teaching and learning process with emphasis on planning and delivering agriscience instruction in public schools. Students will demonstrate competence in agricultural literacy instruction, and science-based agriculture instruction.
Prereq: AEE 230 and 280. Not open to students with credit for AEE 530.02.

5231 Experiential Learning in Agriscience Education U G 2
Provides future secondary agriscience teachers with a foundation in experiential education as part of a comprehensive agricultural education program including supervised agricultural experience and career technical student leader organizations.
Prereq: Not open to students with credit for AEE 531.

5255 Program Planning in Agriscience Education U G 2
Principles and procedures used in planning and conducting programs of career and technical education in the public schools.
Prereq: Not open to students with credit for AEE 585.

5280 Internship in Agriscience Education U G 4
Supervised participation in teaching and other professional responsibilities of teachers of agriculture in the public schools.
Prereq: 5230 and 5231. Not open to students with credit for AEE 580.02.

5281 Capstone in Agriscience Education U G 4
Clinical analysis of teaching agriculture in the public schools, conferences, and seminars. Prereq: 5280 and 5282. Not open to students with credit for AEE 580.03.

5797 Study at a Foreign Institution U G 3
The study abroad program will provide undergraduate and graduate students with an opportunity to learn about agriculture and related issues in a foreign country and receive credit for that work.
Repeatable to a maximum of 9 cr hrs.

Air Force Aerospace Studies

1001 The Foundation of the United States Air Force I U 1
Introduction to the United States Air Force and ROTC. Officerhood and military customs and courtesies are discussed. Foundations of Air Force communication are covered.

1002 The Foundation of the United States Air Force II U 1
Looks at the origin and organization of the Air Force. Selected topics contributing to an understanding of the Air Force are covered.

1101 Heritage and Values of the United States Air Force I U 1
A survey course designed to introduce students to the United States Air Force and provides an overview of the basic characteristics, missions, and organization of the Air Force.

1102 Heritage and Values of the United States Air Force II U 1
A survey course designed to introduce students to the United States Air Force and provides an overview of the basic characteristics, missions, and organization of the Air Force.

1111 Freshmen Leadership Lab I U 0
An introduction to the practical application of basic leadership principles in the United States Air Force.
Prereq: Enrollment in Air Force ROTC program. Concur: 1101. This course is graded S/U.

1112 Freshmen Leadership Lab II U 0
An introduction to the practical application of basic leadership principles in the United States Air Force.
Prereq: Enrollment in Air Force ROTC program. Concur: 1102. This course is graded S/U.

2001 Evolution of United States Air Force Air and Space Power I U 1
Examines air and space power from an historical perspective. Covers early flight and World War I to the Korean War and ICBM.

2002 Evolution of United States Air Force Air and Space Power II U 1
Examines air and space power from an historical perspective. Covers period from the Vietnam War to the Gulf War plus a look at the Air Force of the future.

2101 Team and Leadership Fundamentals I U 1
Focuses on laying the foundation for teams and leadership. The topics include skills that will allow cadets to improve their leadership on a personal level and within a team. The courses will prepare cadets for their field training experience where they will be able to put the concepts learned into practice. The purpose is to instill a leadership mindset.

2102 Team and Leadership Fundamentals II U 1
Focuses on laying the foundation for teams and leadership. The topics include skills that will allow cadets to improve their leadership on a personal level and within a team. The courses will prepare cadets for their field training experience where they will be able to put the concepts learned into practice. The purpose is to instill a leadership mindset.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2111</td>
<td>Sophomore Leadership Lab I</td>
<td>0</td>
<td></td>
<td>An intensified employment of leadership principles and practices relevant to future Air Force Officers. Prereq: Enrollment in Air Force ROTC program. Concur: 2101. This course is graded S/U.</td>
</tr>
<tr>
<td>2112</td>
<td>Sophomore Leadership Lab II</td>
<td>0</td>
<td></td>
<td>An intensified employment of leadership principles and practices relevant to future Air Force Officers. Prereq: Enrollment in Air Force ROTC program. Concur: 2112. This course is graded S/U.</td>
</tr>
<tr>
<td>2121</td>
<td>FTP Leadership Lab I</td>
<td>0</td>
<td></td>
<td>This course is for Air Force ROTC Cadets who have completed all Freshman and Sophomore Air Science courses but who have not earned and junior enrollment allocation. Prereq: 2102, and enrollment in Air Force ROTC program. This course is graded S/U.</td>
</tr>
<tr>
<td>2122</td>
<td>FTP Leadership Lab II</td>
<td>0</td>
<td></td>
<td>This course is for Air Force ROTC Cadets who have completed all Freshman and Sophomore Air Science courses but who have not earned and junior enrollment allocation. Prereq: 2102, and enrollment in Air Force ROTC program. This course is graded S/U.</td>
</tr>
<tr>
<td>3001</td>
<td>Air Force Leadership Studies I</td>
<td>3</td>
<td></td>
<td>Study of leadership professional knowledge and communication skills required for an Air Force officer. The role of a leader as supervisor and counselor is discussed. Prereq: 1001, 1002, 2001, and 2002, and permission of instructor.</td>
</tr>
<tr>
<td>3101</td>
<td>Leading People and Effective Communication I</td>
<td>3</td>
<td></td>
<td>Teaches students advanced skills and knowledge in management and leadership. Special emphasis is placed on enhancing leadership skills and communication. Students have an opportunity to try out these leadership and management techniques in a supervised environment. Prereq: 3101.</td>
</tr>
<tr>
<td>3102</td>
<td>Leading People and Effective Communication II</td>
<td>3</td>
<td></td>
<td>Teaches students advanced skills and knowledge in management and leadership. Special emphasis is placed on enhancing leadership skills and communication. Students have an opportunity to try out these leadership and management techniques in a supervised environment. Prereq: 3101.</td>
</tr>
<tr>
<td>3111</td>
<td>Junior Leadership Lab I</td>
<td>0</td>
<td></td>
<td>An advanced application of leadership theory, skills, and practices for prospective Air Force Officers. Prereq: Enrollment in Air Force ROTC program. Concur: 3101. This course is graded S/U.</td>
</tr>
<tr>
<td>3112</td>
<td>Junior Leadership Lab II</td>
<td>0</td>
<td></td>
<td>An advanced application of leadership theory, skills, and practices for prospective Air Force Officers. Prereq: Enrollment in Air Force ROTC program. Concur: 3101. This course is graded S/U.</td>
</tr>
<tr>
<td>4001</td>
<td>Air Force Defense Studies I</td>
<td>3</td>
<td></td>
<td>Course examines the political, economic and social constraints upon national security and defense structure. The role of the military including joint operations is discussed. Regional defense issues studies. Prereq: 1001, 1002, 2001, 2002, 3001, and 3002, and permission of instructor.</td>
</tr>
<tr>
<td>4002</td>
<td>Air Force Defense Studies II</td>
<td>3</td>
<td></td>
<td>The role of the military and national defense are studied. Current air force issues and other topics relevant to preparing an air force officer for active duty are covered. Prereq: 1001, 1002, 2001, 2002, 3001, 3002, and 4001, and permission of instructor.</td>
</tr>
<tr>
<td>4101</td>
<td>National Security/Preparation for Active Duty I</td>
<td>3</td>
<td></td>
<td>Designed for college seniors and gives them the foundation to understand their role as military officers in American society. It is an overview of the complex social and political issues facing the military profession and requires a measure of sophistication commensurate with the senior college level. The final semester provides information that will prepare the students for Active Duty. Prereq: 3102.</td>
</tr>
<tr>
<td>4102</td>
<td>National Security/Preparation for Active Duty II</td>
<td>3</td>
<td></td>
<td>Designed for college seniors and gives them the foundation to understand their role as military officers in American society. It is an overview of the complex social and political issues facing the military profession and requires a measure of sophistication commensurate with the senior college level. The final semester provides information that will prepare the students for Active Duty. Prereq: 4101.</td>
</tr>
<tr>
<td>4111</td>
<td>Senior Leadership Lab I</td>
<td>0</td>
<td></td>
<td>A culmination of the knowledge, skills, theory, and leadership practices acquired in the Air Force ROTC program to ensure that prospective Air Force Officers are ready to receive a commission in the United States Air Force. Prereq: Enrollment in Air Force ROTC program. Concur: 4101. This course is graded S/U.</td>
</tr>
</tbody>
</table>
American Sign Language

2104 American Sign Language Conversational Discourse  U  3
This course is designed to develop conversational discourse and personal narrative skills in ASL. Students will continue the development of ASL communication skills both receptively and expressively, by expanding on ASL vocabulary and ASL grammar. These skills will allow students the ability to expand conversations in ASL beyond every day topics. Course instruction is in the target language, ASL.
Prereq: A grade of C or better in 1103, or permission of department.

3105 American Sign Language Literature  U  3
This course is an introduction to American Sign Language Literature through exploration and analysis of storytelling and poetry of the American Deaf Community. Students will expand their expressive and receptive skills by examining and deciphering ASL literary works by native ASL users as well as by creating their own works of literature using ASL. Knowledge and use of ASL is required.
Prereq: A grade of C or above in 2104, or permission of department.

3350 American Deaf Arts and Literature  U  3
Survey of literary and artistic works about being deaf that are written or created by individuals who are American deaf.
Prereq: Not open to students with credit for ArtsSci 350.

4189S Intersection of American Sign Language, Deaf Culture,  U  3
and the Deaf Community
Designed to increase student awareness of agencies and organizations that serve the central Ohio deaf community. Students will have the opportunity to use American Sign Language with fluent users and apply their understanding of cultural norms and expectations through providing needed services and support at those organizations.
Prereq: 1101, and permission of instructor or department.

Anatomy

1300 SuperAnatomy  U  3
Today's pop culture includes icons from movies, television shows, and comics superheroes (including metahumans, aliens, & humans with advanced technology). The SuperAnatomy course is a 3-credit hour course that teaches basic systemic human anatomy and physiology with the help of superheroes. Lectures introduce normal human anatomy and physiology, compares superhero powers & modern technology.

2100.01 Introductory Human Anatomy  U  3
A regional study of the basic structure and terminology associated with the human body.
Prereq: Health Science students in Continuing Education (CED), University Exploration (EXP), and Arts and Sciences (ASC) only. Not open to students with credit for 2300.xx or 3300.xx.

2100.02 Introductory Human Anatomy  U  3
Regional study of the basic structure and terminology associated with the human body.
Prereq: Biology 1101, 1102, 1113, or 1114, or permission of instructor; and enrollment as a Health Science student in Continuing Education (CED), University Exploration (EXP), or Arts and Sciences (ASC). Not open to students with credit for 2300.xx or 3300.xx.

2100.03 Introductory Human Anatomy  U  3
Regional study of the basic structure and terminology associated with the human body.
Prereq: Health Science students in Continuing Education (CED), University Exploration (EXP), and Arts and Sciences (ASC) only. Not open to students with credit for 2300.xx or 3300.xx.

2100.04 Introductory Human Anatomy  U  3
Regional study of the basic structure and terminology associated with the human body.
Prereq: Biology 1101, 1102, 1113, or 1114, or permission of instructor; and enrollment as a Health Science student in Continuing Education (CED), University Exploration (EXP), or Arts and Sciences (ASC). Not open to students with credit for 2300.xx or 3300.xx.

2220 Human Structure and Function for Engineers  U  3
Offers a block of lectures and laboratories that present the fundamentals of human anatomy and physiology tailored to undergraduate bioengineering students.
Prereq: Enrollment in BiomedE major, or permission of instructor.

2300.01 Human Anatomy  U  4
Regional study of the basic structure and terminology associated with the human body. Laboratory includes demonstrations on prospected human cadavers.
Prereq: Health Science students in Continuing Education (CED), University Exploration (EXP), and Arts and Sciences (ASC) only. Not open to students with credit for 2100.xx or 3300.xx.

2300.02 Human Anatomy  U  4
Regional study of the basic structure and terminology associated with the human body. Laboratory includes demonstrations on prospected human cadavers.
Prereq: Enrollment in Dental Hygiene (DHY) only. Not open to students with credit for 2100.xx or 3300.xx.

2300.03 Human Anatomy  U  4
Regional study of the basic structure and terminology associated with the human body. Laboratory includes demonstrations on prospected human cadavers.
Prereq: Enrollment in pre-Nursing. Not open to students with credit for 2100.xx or 3300.xx.

2300.04 Human Anatomy  U  4
Regional study of the basic structure and terminology associated with the human body supplemented with computer-assisted instruction. Laboratory includes demonstrations on prospected human cadavers.
Prereq: Enrollment in pre-Health and Rehabilitation Sciences (pre-HRS), Health and Rehabilitation Sciences (HRS), pre-Optometry (pre-Opt), Exercise Science (ExSci), pre-Pharmacy (pre-Pharm), Education and Human Ecology (EHE), or pre-Dental (pre-Dent) only. Not open to students with credit for 2100.xx or 3300.xx.

2300.05 Human Anatomy  U  4
Regional study of the basic structure and terminology associated with the human body.
Laboratory includes demonstrations on prospected human cadavers.
Prereq: Biology 1101, 1102, 1113, or 1114, or permission of instructor; and enrollment as a Health Science student in Continuing Education (CED), University Exploration (EXP), or Arts and Sciences (ASC). Not open to students with credit for 2100.xx or 3300.xx.

3050 Undergraduate Neuroanatomy Laboratory  U  1
Exploration of human neuroanatomy through hands-on laboratory experiences that utilize cadaveric materials, histological cross sections, and imaging.
Prereq: 2100, 2300, or 3300, and NeuroSci 3050 (or concurrent) or permission of instructor.

3300.01 Advanced Human Anatomy  U  5
Fundamental principles of human anatomy using a regional approach. Instructional format includes lecture, laboratory with prospected human cadavers, and practical examinations. Highly recommended for pre-occupational therapy, pre-physical therapy, pre-physician assistant, pre-dental, and pre-medical students.
Prereq: Not open to students with credit for 2100.xx or 2300.xx.

3300.02 Advanced Human Anatomy  U  5
Fundamental principles of human anatomy using a regional approach. Instructional format includes lecture, laboratory with prospected human cadavers, and practical examinations. Highly recommended for pre-occupational therapy, pre-physical therapy, pre-physician assistant, pre-dental, and pre-medical students.
Prereq: 2100, 2300, or 3300, or permission of instructor.
Prereq: Not open to students with credit for 2100.xx or 2300.xx.

4300 Human Anatomy with Dissection  U  4
Advanced undergraduate study of the structure of the human body through regional dissection of a human cadaver and an introduction to histology, embryology, neuroanatomy, and medical imaging.
Prereq: 2300.xx (199.xx) or 3300 (200), and permission of instructor.

4600 Human Embryonic Development and Birth Defects  U  2
Systematic study of the basic embryological development of the human correlated with common birth defects.
Prereq: 2100, 2300, or 3300, or permission of instructor.

4700 Undergraduate Histology  U  4
Systematic study of the basic microscopic structure of mammalian cells, tissues, and organs correlated with function.
Prereq: 2100, 2300, or 3300, or permission of instructor.

5300 Learning Human Anatomy Through Dissection  U  G  2
Enables students with introductory human gross anatomy experience the opportunity to further investigate the human body through the complete dissection of a human cadaver.
Prereq: A grade of B- or better in 2300 or 3300, or equiv.; and an application (with selection process), and permission of Course Director. This course is graded S/U.

5440 Advanced Regional Dissection for Undergraduate  U  G  2
Students
Enables students with introductory human gross anatomy experience the opportunity to further investigate the human body through the in-depth independent dissection of one or more regions of the human body.
Prereq: A grade of B- or above in 2300 or 3300 or equiv., and an application (with selection process), and permission of Course Director. Repeatable to a maximum of 6 cr hrs.

5710 History of Anatomy  U  G  3
This course examines the history of anatomy as a way categorizing and explaining the relationships of parts to wholes in once living creatures, notably human beings. We focus on the history of anatomical observations, education, modes of communication, and professionalization.
Prereq: 2220, 2300, or Grad standing; or permission of both instructors. Cross-listed in History.

6000 Advanced Musculoskeletal Anatomy  G  5
Musculoskeletal anatomy of the human body through an in-depth dissection experience.
Prereq: Enrollment in DPT, OTD, or MOT programs, and permission of instructor.

6193 Individual Studies in Anatomy  G  1 - 5
Enables the student to pursue a minor investigation in some anatomical field of choice.
Prereq: Grad standing in Anatomy, or permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.
6440 Regional Dissection for Anatomy Non-Majors  G 3 - 4
Guided regional human cadaveric dissection for graduate students outside the Anatomy MS or PhD programs. The course allows for focus on a specific region of human anatomy dissection. Allow for 4-8 hours/week of lab dissection. Instructor permission to enroll. Prereq: Grad standing, and permission of instructor. Not open to students enrolled in the Anatomy MS or PhD program. Repeatable to a maximum of 10 cr hrs or 3 completions.

6511 Human Anatomy for Dental Students I  M 7
Introduces dental students to the basic concepts of human gross anatomy, histology, neurosciences, and embryology. Prereq: Enrollment in Dentistry, or permission of instructor.

6512 Human Anatomy for Dental Students II  M 8
Continues the introduction of dental students to the basic concepts of human gross anatomy, histology, neuroscience, and embryology. Prereq: Enrollment in Dentistry, or permission of instructor.

6540 Regional Dissection for Anatomy Majors  G 2 - 4
Guided regional human cadaveric dissection for Anatomy graduate students in either the Anatomy MS or PhD programs. The course allows for focus on a specific region of human anatomy dissection. Allow for 4-8 hours/week of lab dissection. Instructor permission & Anatomy 6900 are required to enroll. Prereq: 6900, enrollment in the Anatomy MS or PhD program, and permission of instructor. Repeatable to a maximum of 12 cr hrs or 6 completions.

6600 Human Embryology  G 2
Designed to acquaint graduate students with a basic knowledge of human embryology. Prereq: Grad standing in Anatomy, or permission of instructor. Not open to students with credit for 710.

6700 Human Histology  G 4
The microscopic study of cells, tissues, and organs with particular emphasis on human. The microscopic structure of various organ systems are integrated with their functions. Prereq: Grad standing in Anatomy, or permission of instructor.

6800 Human Neuroanatomy  G 4
Introduces graduate students to the basic concepts of human neuroanatomy. Prereq: Grad standing in Anatomy, or permission of instructor. Not open to students with credit for NeuroSci 716.

6900 Human Anatomy for Graduate Students  G 8
Graduate level study of human anatomy by regional dissection. Anatomy 200 or equivalent is recommended. Prereq: Permission of instructor.

7289 Practicum: Developing Educational Components  G M 1 - 4
Practical experience developing education tool(s) and/or curricular component(s) in Anatomy. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

7310 Advanced Anatomy for Dental Residents  G 1
Advanced head and neck anatomy for residents in the dental specialties. Prereq: DDS or equiv, and enrollment as a resident or fellow in dental residency program.

7500 Imaging in Human Anatomy  G 2
Application of knowledge of the anatomy of the human body to the interpretation and understanding of diagnostic images. Prereq: 6900 or equiv, and permission of instructor.

7800 History of Anatomy  G M 2 - 3
The primary focus of this seminar course is to introduce students to the chronology, global context, and impact of anatomy, with focuses on education, illustration, research, and ethics. This course will provide students with exposure to the evolution of the science of anatomy, while also developing professional skills through in-class and online discussions, and oral presentations. Prereq: Grad standing in Anatomy or permission of instructor.

7890 Anatomy Seminar in Education  G M 1
Readings and discussion of topics in anatomical education or biomedical pedagogy and curricular development pertinent to anatomy. Prereq: Grad standing in Anatomy, or permission of instructor. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

7891 Anatomy Seminar in Research  G 1
Readings and discussion of topics in biomedical or educational research pertinent to anatomy. Prereq: Grad standing in Anatomy, or permission of instructor. Repeatable to a maximum of 8 cr hrs with content change. This course is graded S/U.

7900 Clinically Oriented Anatomy  G 3
Provides a regionally based clinical approach to the study of human anatomy. Basic anatomy and its correlation with clinical concepts will be examined while an emphasis on clinical associations of disease and assessment techniques will be explored. Prereq: 6900, and Grad standing.

7999 Master Research in Anatomy  G 1 - 8
Designed to enable the student to conduct an in-depth research investigation in some anatomical field of choice. Prereq: Permission of instructor. Repeatable to a maximum of 40 cr hrs or 20 completions. This course is graded S/U.

8110 Advanced Studies in Histology  G 2
Discussion of selected topics in histology based on depth readings of the primary biomedical literature. Sample topics might include: bone and connective tissues, cardiovascular, respiratory tissues. Prereq: Permission of instructor. Repeatable to a maximum of 4 cr hrs.

8120 Advanced Studies in Embryology  G M 2
Mammalian embryological development using descriptive & experimental studies in variety of vertebrate models to present current information on molecular mechanisms responsible for normal development & birth defect in humans. Anatomy 6600 recommended. Prereq: Grad or professional standing; or medical or dental residency; or advanced undergraduate, and permission of instructor. Repeatable to a maximum of 4 cr hrs.

8130 Advanced Studies in Neuroanatomy  G M 2
The Advanced Neuroanatomy course is a two hour course that uses short vignettes and journal club learning approaches to the study of human neuroanatomy. Each class meeting will contain an advanced or applied concepts from Human Neuroanatomy (Anatomy 6900). Prereq: 6600 or equiv., and Grad standing; or permission of instructor.

8140 Advanced Regional Dissection  G 2 - 4
In-depth dissection of one or more regions of the human body, supplemented with literature research. Prereq: 6600 or equiv, and permission of instructor. Repeatable to a maximum of 24 cr hrs or 6 completions.

8289 Anatomy Teaching Practicum  G M 1 - 4
A teaching practicum involving direct participation in classroom teaching under the guidance of a faculty mentor. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

8999 Research in Anatomy  G 2 - 8
Designed to enable the student to conduct an in-depth research investigation in some anatomical field of choice. Prereq: Permission of instructor. Repeatable to a maximum of 40 cr hrs or 20 completions. This course is progress graded (S/U).

Animal Sciences

1100 Exploring Animal Sciences  U ½
Basic understanding of animal sciences, academic program policies and procedures, and opportunities for undergraduate professional development.

2000 Animal Handling  U 2
General introduction to domestic animal behavior and hands-on experience handling food animal species.

2200.01 Introductory Animal Sciences  U 3
A study of the basic principles of genetics, breeding, reproduction, nutrition, behavior, and biotechnology as it applies to the molecular, cellular, and physical underpinnings of domesticated animal form and function. The online course is not open to students with a declared AnimSci major.

2200.02 Introductory Animal Sciences Laboratory  U 1
Laboratory experience associated with basic principles of genetics, breeding, reproduction, nutrition, behavior, and biotechnology as it applies to the molecular, cellular, and physical underpinnings of domesticated animal form and function. Prereq or concour: 2200.01 or 2300H, or permission of instructor. GE nat sci bio course.

2200.03 Animal Systems  U 2
Overview of the size and scope of the livestock and companion animal systems, the economic and social impact of the animals and their products, and the structure of the industries.

2221 Introduction to Equine Studies  U 3
Introduces students to equine studies. Uses of the horse, their economic impact on society, and principles of equine behavior, anatomy, physiology, nutrition, reproduction, and health and disease are emphasized. Prereq: Not open to students with credit for 201.

2260 Data Analysis and Interpretation for Decision Making  U 3
Introduces students to the use of statistics in data analysis and interpretation. Students develop skills in quantitative literacy and logical reasoning. Prereq: Math 1130, 1148, 1150, or 1151. Not open to students with credit for AEDEcon 2205, ComLdr 3537, ENR 2000, HCS 2260, or Stat 1450. GE data anly course.
20 Animal Sciences

2300H Honors Introductory Animal Sciences U 3
A study of the basic principles of genetics, breeding, reproduction, nutrition, behavior, and biotechnology as it applies to the molecular, cellular, and physical underpinnings of domesticated animal form and function.
Prereq: Honors standing, or permission of instructor. Not open to students with credit for 2200.01. GE nat sci bio course.

2301 Equine Behavior and Training U 3
Introduces students to principles of equine behavior and training techniques and practical application of that knowledge to safely and effectively modify desirable and undesirable behavior of assigned horses. Must have medical insurance.
Prereq: Permission of instructor. Not open to students with credit for 271.01. A maximum of 3 credits between 2301 and 2401 may count in the AnimSci major.

2367 Animals in Society U 3
Introduction to the historical, social, cultural, economic and legal frameworks within which current human-animal relationships have evolved.
Prereq: English 1110 (110) or 111 or equiv. Not open to students with credit for 240. GE writing and comm: level 2 and soc sci indrs and groups course.

2400.01 Equine Studies in Europe U 1
First course in a two-course series (2400.01 & 3797.01) designed to give students an appreciation for how world history, government, geography, and infrastructure can impact the equine industry within a society.
Prereq: 2200.01 (200), 2221 (201), or 2300H (200H), and permission of instructor. Repeatable to a maximum of 2 cr hrs.

2400.04 Scotland's Ruminants U 1
First course in a two-course series (2400.04 & 3797.04) designed to give students an appreciation for how world history, government, geography, and infrastructure can impact the small ruminant production and animal health & welfare within a society.
Concur: 3797.04.

2400.05 Human and Animal Interactions U 2
Students will expand their understanding of the role that animals play in shaping society, culture, and economics within the US and the non-US destination identified in the 3797.02, 3797.03, or 3797.04. This course has 3 required Saturday field trips.
Prereq: Not open to students with credit for 248.

2400.07 Global Dairy Industries U 1
An opportunity for students to study the culture, political, economic, and social framework, and dairy industry of another country. This course is offered in conjunction with AnimSci 3797.07 - Dairy Industry Outside the US.
Concur: 3797.07. Not open to students with credit for 697.04.

2401 Advanced Equine Behavior and Training U 3
Utilizes principles of equine behavior and advanced training techniques to safely and effectively modify desirable and undesirable behavior of assigned horses.
Prereq: Permission of instructor. Must have medical insurance. Maximum of 3 credits between 2301 and 2401 may count in the AnimSci major. Repeatable to a maximum of 6 cr hrs.

2500H Freshman Research Seminar: Contemporary Animal Biology Research U 2
Exploration of prominent scientists and emerging issues in animal biology research. Only open to students with 60 cr hrs or fewer.
Prereq: Honors standing, or permission of instructor. Not open to students with credit for 269H.

2507 Challenges and Opportunities for the Dairy Industry U 1
Increase the understanding by students to the challenges and opportunities within the Ohio and US dairy industries. As the economic climate changes and the consumer demands shift, the dairy industry must respond.
Prereq: 2200.01 (200) or 2300H (200H). Not open to students with credit for 347.

2700 Diverse Fields and Opportunities within Animal Sciences U 1
Basic understanding of the global trends in animal sciences and the diversity of career opportunities within the industry, in addition to opportunities for undergraduate professional development. Students should plan to complete the course within the first year of enrollment within the major.
Prereq or concur: 1100 or MeatSci 1100.

3000 Puppy Love: Understanding Animal Emotions U 3
Overview of the science behind animal emotions in livestock and companion animals, including basic introduction to the neurological, physiological, and behavioral indicators of animal emotions.

3046 Poultry Biology U 3
This course will introduce students to the poultry industry in a manner that highlights distinctive biological characteristics of poultry species. Students will have a base of knowledge of poultry anatomy and physiology that prepares them for more advanced animal science classes that cover in-depth subjects related to biology of agricultural animals, including poultry.
Prereq: 2200.01 or 2200.03.

3100 Animal Growth and Development U 3
An overview of growth and development on form and function of food animals and its impact on value.
Prereq: 2200.01 or 2300H, and Biology 1113, and Soph standing or above; or permission of instructor.

3101 Equine Facilities, Marketing, and Management U 3
Aspects of equine business management, marketing and facility design.
Prereq: 2200.01 (200), 2221 (201), or 2300H (200H). Not open to students with credit for 341.

3110 Introductory Meat Science U 3
Analysis of the principles of meat science as related to meat animal value factors, processing technology, and merchandising systems affecting the producer, processor, and consumer.
Prereq: Biology 1101 or 1113. Not open to students with credit for MeatSci 3110. Cross-listed in MeatSci.

3130 Principles of Animal Nutrition U 3
A study of the nutrients, their roles and requirements, digestion and metabolism with an emphasis on domesticated animals maintained for human benefit.
Prereq: 2200.01, 2300H, Biology 1113 or 1113H, and Soph standing or above; or permission of instructor.

3131 Equine Feeds and Feeding U 3
Focuses on the nutrient needs of the horse and the significance of supplements and feeds as they relate to the horse's nutrition and health.
Prereq: 2200.01 (200), 2221 (201), or 2300H (200H). Not open to students with credit for 331.

3133 Principles of Feedstuffs and Feeding U 2
A study of the chemical composition of feedstuffs and the application toward providing optimal nutrition to managed animals.
Prereq: 3130.

3140 Principles of Animal Systems Physiology U 3
An introductory course that surveys organs/systems within the body and relates the functional physiology of those systems to animal production.
Prereq: Biology 1101 (101), 1113 (113), or 1113H (1114). Not open to students with credit for 310. GE nat sci bio course.

3140E Principles of Animal Systems Physiology U 3
An introductory course that surveys organs/systems within the body and relates the functional physiology of those systems to animal production.
Prereq: Honors standing, and Biology 1101, 1113, or 1113H; or permission of instructor. Not open to students with credit for 3140 or 3140H. GE nat sci bio course.

3147 Milk Secretion U 2
Introduction to mammary gland anatomy, milk synthesis, and factors affecting mammary health.
Prereq: 2200.01 or 2300H, and Biology 1113 or 1113H.

3150 Principles of Genetic Improvement U 3
Introduction to the methods available for bringing about genetic change in animals.
Prereq: 2200.01 (200) and 2200.02, or 2300H (200H); and 2260 (260), HCS 2260 (260), Stat 1450 (145), AEDEEcon 2005 (205), ComLdr 3537, or AEE 387. Not open to students with credit for 320.

3160 Reproductive Physiology U 3
Introduction to anatomy and physiology of reproductive systems of various species with a focus on agricultural species: 3140 (310) or 3140H (310H) is recommended.
Prereq: 2200.01 (200) or 2300H (200H), and Soph standing or above. Not open to students with credit for 318.

3170 Animal Health I U 2
Provides students with an introduction to principles of animal health and emphasizes management practices that influence host-pathogen interactions. 3140 or 3140E is recommended.
Prereq: 2200.01 or 2300H, and Soph standing or above.

3171 Equine Health & Disease U 2
Introduction to infectious disease affecting horses with emphasis on management practices that influence host-pathogen interactions.
Prereq: 2200.01 (200), 2221 (201), or 2300H (200H).

3191 Internship in Animal Sciences U 2
Supervised preplanned employment experience and/or on-site problem solving study program.
Prereq: Permission of academic advisor. Prereq or concur: FAES 3191. This course is graded S/U. Cross-listed in MeatSci.

3200 Applied Animal Bioscience Laboratory U 2
Laboratory experience exploring the organs, tissues and cells associated with the physiological systems of domestic animals and the nutrients used to support these systems.
Prereq: 3130; and 3140, 3140E, Anim&Tecl 3140T, or EEOB 2520; and 3160. Prereq or concur: 3170 or Anim&Tecl 3170T.

3270 Animal Health II U 2
Introduction to principles of immunology and emphasis on management practices that influence host immune responses.
Prereq or concur: 3170.

3300 Livestock Selection and Evaluation U 3
Laboratory exercises employing current standards of animal excellence including carcass value for the selection and improvement of farm livestock.
Prereq: 3100, or Jr standing or above, or permission of instructor. Not open to students with credit for 305.
3301 Equine Selection and Evaluation  U  2
Emphasis on the relationship of form to function by evaluating conformation and performance and orally defending that evaluation.
Prereq: 2200.01 (200), 2221 (201), or 2300H (200H), or permission of instructor. Not open to students with credit for 301.

3306 Poultry Selection and Evaluation  U  2
This course will provide students the opportunity to learn about the principles of poultry science; the evaluation and ranking of standard breeds of chickens; and the evaluation and grading of poultry meat and egg products. In addition, the course will cover practical and safe handling techniques of live poultry.
Prereq: Soph standing or above, or permission of instructor.

3307 Dairy Cattle Selection and Evaluation  U  2
Use of functional type traits in evaluation and selection of dairy cattle.
Prereq: Soph standing or above, or permission of instructor. Not open to students with credit for 207.

3400 Management Intensive Grazing  U  2
Application of scientific principles of plant growth, animal nutrition and behavior to manage grazing systems for profitable, sustainable livestock enterprises.

3488 Professional Development in Animal Sciences  U  1 - 2
Participation in structured co-curricular programs leading to professional development (e.g. Academic Quadrathlon, Livestock Selection and Evaluation Teams, etc.).
Prereq: CPHR 2.0 or above, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

3500 Professional Networking in Animal Sciences  U  2
Professional networking and exposure to the breadth of the animal industries in Ohio and the potential for career development.

3600 Global Food and Agriculture  U  3
The integration of food, agriculture, environment, resources, technology, culture, and trade on a global scale.
Prereq: Not open to students with credit for 360.

3600E Global Food and Agriculture  U  3
The integration of food, agriculture, environment, resources, technology, culture, and trade on a global scale.
Prereq: Honors standing. Not open to students with credit for 360E.

3700 Animal Research Methods Laboratory  U  2
Exploring research techniques associated with food animal tissues such as quantifying, separating and identifying proteins, fatty acids and carbohydrates.
Prereq: 3140 (310), 3140H (310H), or MeatSci 3110 (AnimSci 355.01), or permission of instructor.

3797.01 Equine Studies in Europe  U  3
The study abroad experience will allow the students to be surrounded with a different culture, geography, community/government infrastructure, and history to directly compare how those aspects shape and impact the equine industry in that society.
Prereq: 2200.01, 2221, or 2300H. Prereq or concur: 2400.01. Repeatable to a maximum of 6 cr hrs or 6 completions.

3797.03 Human and Animal Interactions Study Abroad  U  3
Experience the beliefs and views of the culture in destination countries on the use and involvements of animals as part of their daily lives.
Prereq or concur: 2400.05. Repeatable to a maximum of 9 cr hrs.

3797.04 Scotland's Ruminants - Education Abroad  U  3
Second course in a two-course series (2400.04 & 3797.04) designed to give students an appreciation for the heritage, production, health and well-being of Scotland's ruminant species and how world history, government, geography, and infrastructure can impact the management of animals within the Scottish society.
Concur: 2400.04.

3797.07 Dairy Industry Outside the U.S.  U  3
Increase the understanding of undergraduate students to the global nature of the dairy industry, comparing the demographics, cultural and economic forces, and natural resource availability on dairy farming and milk processing in a global setting.
Prereq or concur: 2400.07.

4001 Equine Production and Management  U  4
Application of scientific principles and best management practices in the areas of anatomy, physiology, genetics, reproduction, nutrition and health to the production of horses.
Prereq: 3130 or 3131. Not open to students with credit for 541.

4002.01 Beef Cattle Production and Management  U  3
The application of science and basic principles of nutrition, genetics, physiology, and marketing to the production and management of beef cattle.
Prereq: 3130, and 3140 or 3140E, and 3150. Prereq or concur: 3160, 3170, and 3200.

4002.02 Beef Cattle Production Lab  U  1
Hands-on application of the science and basic principles of nutrition, genetics, physiology, and marketing to the production and management of beef cattle.
Concur: 4002.01.

4003.01 Swine Production  U  3
Application of science and basic principles of nutrition, physiology, genetics, health, economics, meats, and housing in integrated management systems for modern swine production.
Prereq: 3130 and 3140 or 3140E and 3150. Prereq or concur: 3160, 3170, and 3200.

4003.02 Swine Production Lab  U  1
Hands-on application of scientific and basic principles of nutrition, genetics, physiology, health, economics, meat products and housing in integrated management systems for modern swine production.
Concur: 4003.01.

4004.01 Small Ruminant and Pseudo Ruminant (Sheep, Goat, Llama, Alpaca, & Deer) Production and Management  U  3
Application of science and basic principles of nutrition, genetics, physiology, and marketing to the production and management of small ruminants.
Prereq: 3130, and 3140 or 3140E, and 3150. Prereq or concur: 3160, 3170, and 3200.

4004.02 Small Ruminant Production Lab  U  1
Hands-on application of the science and basic principles of nutrition, genetics, physiology, and marketing to the production and management of small ruminants.
Concur: 4004.01.

4005 Companion Animal Biology and Behavior  U  4
Anatomy, genetics, nutrition, physiology and behavior of dogs and cats. Human-animal companion relationships.
Prereq: 3130 (330), and 3140 (310) or 3140H (310H), and 3150 (320). Prereq or concur: 3160 (318), 3170 (413), and 3200. Not open to students with credit for 545.

4006.01 Poultry and Avian Management  U  3
Describes classes of poultry and game birds, incubation, housing, anatomy, diseases, genetics and nutrition.
Prereq: 3130, and 3140 or 3140E, and 3150. Prereq or concur: 3160, 3170, and 3200.

4006.02 Poultry and Avian Management Lab  U  1
Hands-on application of nutrition, genetics, physiology, health, economics, products and housing in integrated management systems for the raising of chickens for market and egg production.
Concur: 4006.01.

4007 Dairy Herd Management  U  4
Application of scientific principles to practical herd management, analyses of alternatives and decision making.
Prereq: 2200.01, and 3130 (330) or 3147 (317). Not open to students with credit for 547.

4105 Domestication, Form, and Function of Dogs  U  3
A study of the events that have shaped the domestic dog. Includes a focus on the role of domestication, selective breeding, and factors impacting growth and development on form and function of the domestic dog.
Prereq: 3140, and Soph standing or above; or permission of instructor.

4189 Field Experience or Field Work  U  3
Supervised career-related work experience where students are temporarily employed by an organization and put into practice the skills, techniques and knowledge that are important for success in the industry.
Prereq: 3130 (330), and 3140 (310) or 3140H (310H), and 3150 (320), and permission of instructor. Prereq or concur: 3160 (318), 3170 (413), and 3200. Repeatable to a maximum of 6 cr hrs.

4193 Individual Studies  U  0 - 3
Special assignments and advanced research; problems assigned after consultation with the instructor in charge.
Prereq: CPHR 2.5 or above, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

4194 Group Studies  U  1 - 3
Special topics area group studies finally proposed for a specific semester by an animal science faculty member.
Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

4400 Animal Welfare and Behavior in Livestock Industries  U  3
The study of animal welfare and behavior and resulting influences on livestock production systems.
Prereq: 3140 (310) or 3140H (310H), or permission of instructor.

4597 Contemporary Animal Use Issues  U  3
The historical, biological, ethical, nutritional and economic issues of using animals to meet human needs.
Prereq: Jr or Sr standing. Not open to students with credit for 597. GE cross disciplinary seminar course.

4787 Study at a Foreign Institution  U  1 - 15
Study at a foreign institution.
Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 15 completions.
Animal Sciences

4999 Research with Distinction U 0 - 6
Conducting and reporting research with distinction.
Prereq: CPRH 3.0 overall, and GPA 3.0 or above in major, and permission of project supervisor. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

4999H Honors Research with Distinction U 0 - 6
Conducting and reporting research with distinction.
Prereq: Honors standing, FAES 1100H, CPRH 3.4 or above, major GPA 3.4 or above, and permission of honors project supervisor. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

5000 Human Dimension in Animal Sciences U G 3
Examines how humans have and continue to influence the field of Animal Sciences. Students will gain a perspective on both individual and societal actions and reactions to aspects of animal production for human consumption. Topics will include, but not be limited to: attitudes, beliefs, values, and value orientations.

5031 Ruminant Nutrition U G 3
Principles of ruminant nutrition: nutrients, metabolism and physiology. Includes computer formulations and feeding strategies for nutritional management of ruminants.
Prereq: 3130 (330), or Grad standing. Not open to students with credit for 630.01.

5032 Non-Ruminant Nutrition U G 3
Principles of nonruminant nutrition: nutrients, metabolism and physiology. Includes practical feeding strategies for nonruminant animals.
Prereq: 3130 (330), or Grad standing. Not open to students with credit for 630.02.

5033 Feeding Management and Records Analysis for Dairy Cattle U G 3
Stimulates student awareness of unique nutrient metabolism systems and strategies that have evolved to meet nutrient requirements to support various animal production situations.
Prereq: 3130 (330), or Grad standing, or permission of instructor. Not open to students with credit for 630.03.

5070 Nutritional Immunology in Animal Systems U G 3
Principles of the role of nutrients in modulating the immune responses of animals and nutrient contributions toward animal health and well-being.
Prereq: 3130 (330) or HumnNtr 2310 (310), or Grad standing. Not open to students with credit for 638.

5090 Gut Microbiology U G 2
A study of the major microorganisms of the gastrointestinal tract of animals and humans, their microbial metabolism and functions, interactions with each other and with hosts, and impact on host nutrition and health.
Prereq: Microbio 4000.01 or 4000.02 or 4100, and Biochem 4511, and GPA 2.0 or above in Biochem and Microbio coursework; or permission of instructor.

5100 Advanced Growth and Development U G 3
A molecular developmental approach to the study of tissue growth, structure, and function in animals and humans.
Prereq: 8 cr hrs in 3000-level or above AnimSci course, and Jr standing or above, or Grad standing. Not open to students with credit for 400 or 618.

5131 Application of Nutritional Principles to Ruminant Production Systems U G 3
Principles of ruminant production, health, rumen digestion, metabolism, physiology, nutrient requirements, behavior, growth and lactation in the production of meat and milk from ruminants.
Prereq: 4002, 4004, or 4007; or Grad standing; or permission of instructor.

5310 Auditing Animal Production and Processing Facilities U G 2
Introduces multiple types of auditing tools currently used by the industry to evaluate best management practices and animal welfare in the production and processing of various animal species.

5400.01 Southern African Animals: I U G 2
First in a two part series covering the physiology, behavior, and human interactions with various animals found in Southern Africa, establishing an appreciation of the daily struggles of animals and people in this geographic area.

5400.02 Southern African Animals: II U G 2
Second of a two-part series covering the physiology, behavior, and human interactions with various animals found in Southern Africa, establishing an appreciation of the daily struggles of animals and people in this geographic area.

5410 Food Animal Production and Processing Industry Tour U G 2
Includes travel to food animal production and processing facilities for students to gain first hand knowledge in commercial food animal production and processing.

5530 Comparative Animal Nutrient Metabolism U G 3
Principles of nutrient metabolism as influenced by anatomical evolution and diet selection. Includes comprehensive discussions of nutrient handling in domesticated, captive and wild animal populations.
Prereq: 3130 (330) or HumnNtr 2310 (310), and Biochem 4511 (511).

5551 Equine Assisted Activities and Therapies U G 2
A variety of approaches, therapeutic settings and client populations will be addressed with an emphasis on equine behavior and body language. Students will gain experience in the development and practical application of an equine assisted therapy program.

5797.01 Welfare of Agricultural and Recreational Animals U G 3
This course is part of the long-term study abroad program in Australia. It investigates the role of animal welfare in production and recreational animals and how animal welfare issues will impact the future of global food animal agriculture.
Prereq: 3130 (330), and 3140 (310) or 3140H (310H), and 3150 (320), and permission of instructor. Not open to students with credit for 697.01.

5797.02 Animal Production Systems in Diverse Environments in Australia U G 3
Part of the long-term study abroad program in Australia. It will investigate animal production systems including: comparing production practices, economic issues and environmental constraints between Australia and the United States.
Prereq: 3130 (330), and 3140 (310) or 3140H (310H), and 3150 (320), and permission of instructor. Not open to students with credit for 697.02.

5797.03 History, Culture and Economies of Australia U G 3
Introduces students to key social, political and economic issues that have shaped Australia to its contemporary identity and to investigate issues of exploration, economic development, social and community standards and processes.
Prereq: Permission of instructor.

5797.05 Exotic Animal Behavior and Welfare U G 3
Exposes students to behavior, welfare, and health conditions of food production and exotic animals found in South Africa. This is a short-term study abroad course that will include visits to a range of animal systems: intensive production, open-range, semi-contained, sanctuaries, and zoo settings. The class activities take place primarily in field settings.
Prereq: 5400.01.

5810 Branded Meat Products U G 4
Integration of multiple factors influencing value-added product development including: raw material quality and procurement, processing, packaging, distribution, and complexity of market development and current consumer trends in niche marketing.
Prereq: 3130, 355.01, or MeatSci 3110; and completion of a second writing course. Not open to students with credit for 555.03 or MeatSci 5810. Cross-listed in MeatSci.

6000 Introduction to Graduate Studies in Animal Sciences G 1
An introduction to the Animal Sciences discipline and the scholarly activities required to pursue a graduate studies in the field.
Prereq: Grad standing.

6000 Advanced Reproductive Physiology G 3
Recent advances in research in mammalian reproduction.
Prereq: 3160 (318), or Grad standing, or permission of instructor. Not open to students with credit for 610 or 710.

6100 Research Methods and Writing in Animal Sciences G 1
Emphasis on the literature of science, design of a problem, methods and techniques for investigation and scientific writing.
Prereq: Grad standing.

6193 Individual Studies G 1 - 6
Special assignments and advanced research problems assigned.
Repeatable to a maximum of 10 cr hrs or 6 completions. This course is graded S/U.

6194 Group Studies G 1 - 3
Special topics area group studies.
Repeatable to a maximum of 6 cr hrs or 3 completions. This course is graded S/U.

7000 Applied Biometrics G 4
Study methods used in the quantification of biological processes and the integration of research results and knowledge into quantitative methods.
Prereq: Stat 5301 or equiv, or permission of instructor.

7030 Advanced Topics in Ruminant Nutrition G 3
Advanced aspects of ruminant digestion, microbial fermentation, absorption, metabolism, physiology and the integration of these processes into rationing approaches will be emphasized, building on principles of ruminant nutrition from past courses.
Prereq: 5031 (630.01) or equiv, or Biochem 4511 (511), or permission of instructor. Not open to students with credit for 730.

7040 Animal Physiology I G 3
This course will explore the physiology of neuronal, muscular, endocrine, & reproductive tissues at systemic, cellular, & molecular levels with a focus on domestic mammals. Human physiology will be presented at times to expand upon limited information available for animals.
Prereq: Grad standing, or permission of instructor.

7100 Animal Growth and Development G 3
Addresses the advanced principles of animal growth and development as the food animal industries continue to emphasize more efficient growth rates and acceptable meat quality. Specific information will be focused on the structure and function of muscle, bone, and adipose tissues, and the interaction among these processes, exercise, heredity and disease.
Prereq: 3100, 3105, or permission of instructor.
7640 Food Carbohydrates and Proteins G 3
Chemical, physical, biological and functional properties of food carbohydrates and proteins and their interactions with other food components. Prereq: FdsScTe 5600 (630) and Biochem 4511 (511), or permission of instructor. Not open to students with credit for FdsScTe 822 or 823. Cross-listed in FdsScTe.

7724 Contemporary Issues in Animal Welfare G 1
Give students the opportunity to explore current issues in animal welfare through reading, presentations and discussion. Prereq: 4400 or VMCol 6655, or permission of instructor. Cross-listed in VetPrev.

7730 Endocrinology G 4
Functional principles of the major endocrine systems in vertebrates and preparation for research in this area. Prereq: Biochem 4511, or permission of instructor. Not open to students with credit for Kinesio 7730. Cross-listed in Kinesio.

7761 Macronutrient Metabolism G 4
In-depth treatment of digestion, absorption, transport, and utilization of dietary carbohydrates and fat for energy production and fat deposition in humans and other higher animals. Prereq: 3130 (330), HumnNtr 2310 (310), or Biochem 4511 (511). Not open to students with credit for 761, 762, HumnNtr 7761 (761 and 7762), or FdsScTe 7761 (761 and 762). Cross-listed in FdsScTe and HumnNtr.

7762 Vitamin and Mineral Metabolism G 4
Biochemical functions, absorptions, transport, interrelationships and nutritional requirements of selective vitamins and minerals in higher vertebrates and humans. Prereq: Coursework in Biochemistry or Vertebrate Physiology. Not open to students with credit for FdsScTe 7762 or HumnNtr 7762. Cross-listed in FdsScTe or HumnNtr.

7789 Nutrition Research Ethics G 1
Exploring critical aspects in conducting research, including ethical considerations, authorship, conflicts of interests, and intellectual property rights. Prereq: Grad standing. Not open to students with credit for HumnNtr 7789. Cross-listed in HumnNtr.

7790 Animal Models and Mechanistic Research Design G 1
The course will provide fundamental principles in establishing effective research hypotheses, aims, and design strategies for mechanistic and applied research using animals and animal models. A focus on research protocols, outcomes, inferences, and reporting will be developed and reinforced through student evaluation of primary literature and student interactions. Prereq: 7769 or HumnNtr 7769. Not open to students with credit for HumnNtr 7790. Cross-listed in HumnNtr.

7899 Oral Research Communication G 1
Critical analysis of the scientific literature and demonstration of effective oral presentation skills tailored to the target audience, with use of information technologies as needed. Prereq: Grad standing. Not open to students with credit for FdsScTe 7899 or HumnNtr 7899 (899). Cross-listed in FdsScTe and HumnNtr.

7999 Thesis Research G 1 - 15
Research for thesis purposes for students pursuing a MS degree. Prereq: MS Grad student standing in Animal Sciences, or permission of instructor. Repeatable. This course is graded S/U.

8193 Individual Studies G 1 - 10
Exploratory research and advanced assignments. Prereq: Grad standing, and permission of instructor. This course is graded S/U.

8780 Molecular Biology Techniques G 3
Demonstrates the applications of molecular biology by involving the students in a real-time research project. Students will perform experiments using molecular biology techniques in the context of a muscle protein functionality study. Prereq: Grad standing, or permission of instructor.

8801 Macronutrients - Lipids and Energy Balance G 3
Discussion of lipids as storage molecules used for energy and metabolism modulation as well as how they influence energy balance conditions such as obesity, cachexia, weight loss and weight gain. Prereq: 7761 (761), FdsScTe 7761 (761), or HumnNtr 7761 (761). Not open to students with credit for 830.01, FdsScTe 8801 (830.01), or HumnNtr 8801 (830.01). Cross-listed in FdsScTe and HumnNtr.

8802 Advanced Macronutrient Metabolism G 3
Comparative study of the regulation of micronutrient status and its influence on physiological and molecular events, including nuclear receptor activity and transcription. Prereq: 7762 (762), FdsScTe 7762 (762), or HumnNtr 7762 (762). Not open to students with credit for 830.02, FdsScTe 8802 (830.02), or HumnNtr 8802 (830.02). Cross-listed in FdsScTe and HumnNtr.

8833 Diet, Nutrition and Cancer G 3
Epidemiological, clinical and basic perspective of how diet and nutrition practices predict for cancer risk. Prereq: 7761 (761), FoodSci 7761 (761), or HumnNtr 7761 (761). Not open to students with credit for 830.12, HumnNtr 8833 (830.12), or FdsScTe 8833 (830.12). Cross-listed in FdsScTe and HumnNtr.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Unit</th>
<th>Credits</th>
<th>Description</th>
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<tbody>
<tr>
<td>2199.01T</td>
<td>Horse Practicum</td>
<td>U</td>
<td>1</td>
<td>Practical experience in supervised equine laboratories with emphasis on developing and improving</td>
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<td>competencies related to classroom objectives and horse industry standards. A grade of C or better</td>
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<td>required to meet graduation requirements. Repeatable to a maximum of 4 cr hrs.</td>
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<tr>
<td>2199.07T</td>
<td>Practicum in Dairy Cattle Production</td>
<td>U</td>
<td>1 - 2</td>
<td>Supervised practical experience in dairy cattle production at the Ohio State AT1 dairy farm with</td>
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<td>emphasis on developing and improving dairy cattle production skills and competencies. A grade of</td>
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<td>C or better required to meet graduation requirements.</td>
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<td>Prereq: Permission of instructor. Repeatable to a maximum of 4 cr hrs or 4 completions.</td>
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<tr>
<td>2190.01T</td>
<td>Leadership in Equine Operations Management</td>
<td>U</td>
<td>1</td>
<td>Practical, supervised leadership experience in equine facility management with emphasis on herd</td>
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<td>and facility operations and personnel supervision. A grade of C or better required to meet</td>
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<td>graduation requirements. Prerequisite: Completion of tractor/mobile equipment safety certification</td>
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<td>process required. Prereq: 2199.01T (289.04T) with a grade of C or above, 2201T (211T). Repeatable</td>
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<td>to a maximum of 2 cr hrs.</td>
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<td>2193T</td>
<td>Individual Studies</td>
<td>U</td>
<td>1 - 3</td>
<td>Designed to give an individual student an opportunity to pursue special studies not offered in</td>
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<td>other courses. Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.</td>
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<td>This course is graded S/U.</td>
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<tr>
<td>2194T</td>
<td>Group Studies</td>
<td>U</td>
<td>1 - 3</td>
<td>Designed to give groups of students an opportunity to pursue special studies not offered in</td>
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<td>other courses. Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.</td>
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<tr>
<td>2200.02T</td>
<td>Introduction to Animal Sciences Laboratory</td>
<td>U</td>
<td>1</td>
<td>Laboratory application of basic animal husbandry practices in the various livestock and related</td>
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<td>industries. Prereq or concor: 2200T or AnimSci 2200.01. This course is available for EM credit.</td>
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<tr>
<td>2200T</td>
<td>Introduction to Animal Sciences</td>
<td>U</td>
<td>3</td>
<td>Introduction to animal agriculture: its purpose, terms, products, problems, and basic management</td>
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<td>principles. Prereq: Not open to students with credit for 2101T or AnimSci 200. This course is</td>
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<td>available for EM credit.</td>
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<tr>
<td>2201T</td>
<td>Introduction to Horse Science</td>
<td>U</td>
<td>1</td>
<td>Fundamental survey of the development of domestic horses and breeds, terminology, behavior, uses,</td>
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<td>conformation, management and safe horse handling. Prereq: Not open to students with credit for</td>
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<td>2111T. This course is available for EM credit.</td>
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<tr>
<td>2202T</td>
<td>Introduction to Beef and Small Ruminant Production</td>
<td>U</td>
<td>3</td>
<td>Overview of beef cattle, sheep, goat, and other small ruminant species industries with regard to</td>
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<td>production and marketing; focus on ruminant livestock needs and the opportunities involved in their</td>
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<td>production. Prereq: Not open to students with credit for 222.01T or AnimSci 200. This course is</td>
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<td>available for EM credit.</td>
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<tr>
<td>2510.02T</td>
<td>Food Animal Resource Management I - Beef</td>
<td>U</td>
<td>1</td>
<td>Supervised practical experience in beef production and management at the Grace Drake Learning</td>
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<td>Laboratory with emphasis on developing and improving beef production and management skills and</td>
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<td>competency. A grade of C or better required to meet graduation requirements. Repeatable to a</td>
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<td>maximum of 4 cr hrs.</td>
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<tr>
<td>2510.03T</td>
<td>Food Animal Resource Management I - Swine</td>
<td>U</td>
<td>1</td>
<td>Supervised practical experience in swine production and management at the Grace Drake Learning</td>
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<td>Laboratory with emphasis on developing and improving swine production and management skills and</td>
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<td>competency. A grade of C or better required to meet graduation requirements. Repeatable to a</td>
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<td>maximum of 4 cr hrs.</td>
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<tr>
<td>2520.04T</td>
<td>Food Animal Resource Management II - Small</td>
<td>U</td>
<td>1</td>
<td>Supervised practical experience in small ruminant production and management at the Grace Drake</td>
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<tr>
<td></td>
<td>Ruminants</td>
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<td>Laboratory with emphasis on developing and improving small ruminant production and management</td>
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<td>skills and competency. A grade of C or better required to meet graduation requirements.</td>
</tr>
</tbody>
</table>
Practical Swine Feeding  3133T  3
A study of the basic nutritional requirements and feeding management of swine, with an
emphasis on evaluation and formulation of common feedstuffs and ration balancing.
Prereq: 2603T or AnimSci 2200.01; GenMath 1040T or Math 1075 or Math Placement Level R
or higher. This course is available for EM credit.

Dairy Cattle Feeding Management  3137T  3
Principles of dairy cattle feeding management with emphasis on the critical evaluation
and formulation of rations in current management situations.
Prereq: GenMath 1040T or Math 1075 or Math Placement level R or higher. This course is available
for EM credit.

Animal Anatomy and Physiology  3140T  4
This subject will introduce the principles of animal body structure (anatomy) and function
(physiology) as relevant for students of animal sciences and technology. This includes an
introduction to anatomical nomenclature, cells and tissues and body systems.
Prereq or concor: GenBiol 1200T or Biology 1113 or 1114; or permission of instructor.
This course is available for EM credit.

Livestock Genetic Improvement  3150T  3
Principles of inheritance and the genetic improvement of livestock through cellular, qualitative,
and population genetics; emphasizing breeding values, selection, and mating systems.
Prereq: GenBiol 1200T or Biology 1113; GenMath 1040T or Math 1050 or Math placement
level R or higher. This course is available for EM credit.

Dairy Breeding and Selection  3151T  3
Principles of equine breeding management with emphasis on applied equine reproductive
physiology, breeding methods, mating stock management and basic genetics and selection.
Recommended prereq: 3140T (221T) or GenBiol 1200T (120T).
Prereq: 2210T (211T). Not open to students with credit for 265T. This course is available for
EM credit.

Dairy Cattle Genetic Improvement  3157T  3
Principles of inheritance and the genetic improvement of dairy cattle through cellular,
qualitative, and population genetics; emphasizing breeding values, selection, and mating
systems.
Prereq: GenBiol 1200T or Biology 1113; GenMath 1040T or Math 1050 or Math placement
level R or higher. This course is available for EM credit.

Applied Equine Reproductive Management  3161T  2
An advanced course in equine reproductive management with emphasis on understanding and
improving equine infertility, applications of current research, and development of technical
skills.
Prereq: 2210T (211T). Prereq or concor: 3151T (265T). Concur: 2180.01T or 2190.01T. Not open
to students with credit for 265T.

Dairy Cattle Milking and Reproductive Management  3167T  4
A study of recommended dairy cattle milking and reproductive management practices, based
on the anatomy and physiology of the systems.
Prereq: Not open to students with credit for 201T and 203T. This course is available for EM credit.

Principles of Livestock Health  3170T  3
A basic introduction to the relationship between animal health and performance. Topics
include: immunology, sanitation, disease etiology, and disease prevention, symptoms, and
treatment.
Prereq: 2202T or 2603T or AnimSci 2200.01. This course is available for EM credit.

Horse Health and Disease  3171T  3
Study of equine disease, lameness, and emergency first aid with emphasis on preventative
health care and the manager's role with the veterinary professionals.
Prereq: 2201T or AnimSci 2200.01. This course is available for EM credit.

Dairy Cattle Health Management  3177T  4
A study of immunology and dairy cattle health management, including disease prevention,
identification, and treatment of common diseases influencing the performance of dairy cattle.
Prereq: Not open to students with credit for 201T, 203T, and 252T. This course is available for EM credit.

Equine Industry Internship Experience  3191.01T  1 - 3
Employment in the equine industry structured to provide varied occupational experiences;
supervised by an industry employer and coordinated by faculty; comprehensive report required.
A grade of C or better is required to meet graduation requirements.
Prereq: 2189.01T (289.04T), 2210T (211T), CPHR 2.0 or above, Soph standing, and
permission of instructor. Not open to students with credit for 290.04T. Repeatable to a
maximum of 4 or hrs or 3 completions.

Beef Industry Internship  3191.02T  2 - 3
Employment in the beef industry structured to provide varied occupational experiences;
supervised by an industry employer and coordinated by faculty; comprehensive report required.
A grade of C or better is required to meet graduation requirements.
Prereq: 2202T, 2510.02T; CPHR 2.0 or above; permission of instructor. Repeatable to a
maximum of 6 or hrs or 2 completions.

Swine Industry Internship  3191.03T  2 - 3
Employment in swine industry structured to provide varied occupational experiences;
supervised by an industry employer & coordinated by faculty; written comprehensive report
required. A grade of C or better is required to meet graduation requirements.
Prereq: 2603T, 2510.03T; CPHR 2.0 or above; permission of instructor. Not open to students
with credit for 290.02T. Repeatable to a maximum of 6 or hrs or 3 completions.

Small Ruminant Industry Internship  3191.04T  2 - 3
Employment in a small ruminant industry structured to provide varied occupational
experiences; supervised by an industry employer and coordinated by faculty; comprehensive
report required. A grade of C or better is required to meet graduation requirements.
Prereq: 2202T, 2510.04T; CPHR 2.0 or above; permission of instructor. Repeatable to a
maximum of 6 or hrs or 3 completions.

Dairy Industry Internship  3191.07T  2 - 3
Employment in the dairy industry structured to provide varied occupational experiences;
supervised by an industry employer and coordinated by faculty; comprehensive report required.
A grade of C or better is required to meet graduation requirements.
Prereq: 3157T (201T and 203T), 3200T (202T), 3177T (225T); CPHR 2.0 or above; permission
of instructor. Repeatable to a maximum of 6 or hrs or 3 completions.

Selection and Evaluation  3200T  2
Principles of live animal selection and carcass evaluation of livestock.
Prereq: 2202T or 2603T or 3140T or AnimSci 2200.01.

Horse Judging and Evaluation  3201T  2
Comparative evaluation of horse conformation by breed, assessment of performance in a
variety of performance disciplines; development of tools for assessing and placing show horses.
Prereq: Not open to students with credit for 212T. This course is available for EM credit.

Dairy Cattle Evaluation and herd Records  3207T  2
Comparative evaluation of dairy cattle conformation and introduction to herd performance
records; emphasis on breed characteristics, functional type, lifetime profitability, and record
data collection, analysis, and use.
Prereq: Not open to students with credit for 201T and 202T. This course is available for EM credit.

Beef Production and Management  3402T  4
The application of science and basic principles of nutrition, genetics, physiology, and marketing
to the production and management of beef cattle in breeding and feeding production programs.
Prereq: 1 to 3 day field trips, including weekends, may be required. Students will pay costs associated with
field trips (lodging, transportation, meals, etc.) above Ohio State tuition and fees.
Recommended prerequisites: 2582.02T, 3130T, 3132T, 3140T, 3150T, and 3170T.
Prereq: 2202T and 2510.02T.

Swine Production and Management II  3403T  4
An advanced study of the principles of managing a commercial swine enterprise. Coordination
of production programs, evaluating economic performance, and a survey of contemporary
swine housing and equipment options. 1 to 3 day field trips, including weekends, may be
required. Students will pay costs associated with field trips (lodging, transportation, meals, etc.)
above Ohio State tuition & fees.
Prereq: 2603T, 3140T, 3170T, Prereq or concor: 3133T, 3150T, Not open to students with credit for
2613T. This course is available for EM credit.

Small Ruminant Production and Management  3404T  4
The application of science and basic principles of nutrition, genetics, physiology, and marketing
to the production and management of sheep, goats, and other small ruminants. One to 3 day
field trips, including weekends, may be required. Students will pay costs associated with field trips
(lodging, transportation, meals, etc.) above Ohio State tuition and fees. Recommended prerequisites:
2582.04T, 3130T, 3132T, 3140T, 3150T, 3170T.
Prereq: 2202T and 2510.04T.

Dairy Facilities, Environment, and Equipment  3407T  3
Design and management of dairy cattle facilities, environment, and associated equipment;
emphasizing milking equipment and parlors, animal housing, environmental control, waste
management, feeding systems, and utilities. 1 to 3 day field trips, including weekends, may be
required. Students pay costs associated with field trips (lodging, transportation, meals, etc.) above Ohio State tuition & fees.
Prereq: 2582.02T, 3130T, 3132T, 3140T, 3150T, 3170T.

Integrated Dairy Farm Business Management  3887T  4
A study of dairy farm business management combining business, financial, and animal
management principles, practices, and strategies; emphasis placed on developing a business
plan and problem solving.
Prereq: AEDEcon 2101 or BusTec 1151T (151T) or AEDEcon 2001 (200T). Not open to students
with credit for BusTec 240T. This course is available for EM credit. Cross-listed in CrpSoil.
Anthropology

1100 Introduction to Anthropology U 3
Introductory exploration of what it means to be human. Course highlights the anthropological sub-disciplines of archaeology, biological anthropology, cultural anthropology, and linguistic anthropology. GE cultures and ideas and soc sci orgs and polities and diversity global studies course.

2194 Group Studies U 1 - 3
Designed to give groups of students an opportunity to pursue special studies in topics not otherwise offered. Repeatable.

2200 Introduction to Physical Anthropology U 4
A scientific examination of humans as a biological and cultural organism based on primate evolution from living and fossil evidence; evolutionary theory and population adaptability. This course includes laboratory activities. Prereq: Biology 1101 (101) or equiv. Not open to students with credit for 200. GE nat sci bio course.

2200H Introduction to Physical Anthropology U 4
A scientific examination of humans as a biological and cultural organism based on primate evolution from living and fossil evidence; evolutionary theory and population adaptability. This course includes laboratory activities. Prereq: Honors standing, and Biology 1101 (101) or equiv; or Honors standing, and permission of department or instructor; or Biology 1101 (101) or equiv, and permission of department of instructor. Not open to students with credit for 2200 (200) or 200H. GE nat sci bio course.

2201 Introduction to Archaeology U 3
World prehistory from the origin of human culture through the development of civilization illustrated by selected examples; archaeological field method; concepts of analysis and interpretation. Prereq: Not open to students with credit for 2201H. GE soc sci indivs and groups and diversity global studies course.

2201H Introduction to Archaeology U 3
World prehistory from the origin of human culture through the development of civilization illustrated by selected examples; archaeological field method; concepts of analysis and interpretation. Prereq: Honors standing, or permission of department or instructor. Not open to students with credit for 2201 (201) or 201H. GE soc sci indivs and groups and diversity global studies course.

2202 An Introduction to Cultural Anthropology U 3
Introduction to anthropological perspectives on cross-cultural variation in human behavior and societies. Prereq: Not open to students with credit for 2202H. GE soc sci indivs and groups and diversity global studies course.

2202H An Introduction to Cultural Anthropology U 3
Introduction to anthropological perspectives on cross-cultural variation in human behavior and societies. Prereq: Honors standing, or permission of instructor or department. Not open to students with credit for 2202. GE soc sci indivs and groups and diversity global studies course.

2241 The Middle East Close-Up: People, Cultures, Societies U 3
Introduction to the culture of the Middle East as lived in its villages, towns, and cities. Prereq: Not open to students with credit for 241 or NELC 2241 (241). GE cultures and ideas and diversity global studies course. Cross-listed in NELC.

3005 Careers with Anthropology U 3
This course provides an overview of various career paths for students with degrees in anthropology. It will help students from all sub-fields of anthropology develop professional skills in preparation for life after graduation. Specifically, it focuses on the ways in which they can apply anthropological concepts, research methodologies, and analytical skills in a wide range of careers. Repeatable to a maximum of 6 cr hrs.

3191 Internship in Anthropology U 1 - 6
An opportunity for work experience and on-the-job learning in anthropology-related employment. Prereq: 2.5 CPHR or above, and Soph, Jr, or Sr standing, and enrollment in Anthropology major. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

3211 Introduction to Forensic Science U 3
This team-taught interdisciplinary course will give students an introduction to the major concepts, issues and techniques used in forensic science. It is designed to expose students to different disciplines and career paths within forensic science. Prereq: Not open to students with credit for ArtsSci 211.

3300 Human Origins U 3
The search for human origins through a reconstruction of the human and non-human primate fossil records of the last 60 million years; emphasis on human skeletal, behavioral, and social patterns. Prereq: 2200 (200), or permission of instructor. Not open to students with credit for 300.

3301 Modern Human Physical Variation U 3
Survey of modern human biological diversity; examination of the underlying evolutionary and adaptive mechanisms responsible; exploration of the interplay between biology and behavior in adaptation. Prereq: 2200 (200), or permission of instructor. Not open to students with credit for 301.

3302 Introduction to Medical Anthropology U 3
Relationship of anthropology to the art and science of medicine. Prereq: 2200 and 2002, or permission of instructor.

3304 The Living Primates U 3
Survey of the behavior, morphology and conservation of living primates; particular emphasis given to field studies and the position of humans within the Order Primates. Prereq: Not open to students with credit for 304. GE nat sci bio course.

3305 Introduction to Forensic Anthropology U 3
An introduction to the field of forensic anthropology in which students will be introduced to basic methods used to analyze unidentified human skeletal remains. Prereq: Not open to students with credit for 305.

3334 Zombies: The Anthropology of the Undead U 3
Students will understand how culture and social organization help us define the living, the dead and the undead in the contemporary and archaeological record, and how we create social categories that organize our world and our place.

3340 The Anthropology of Mental Health U 3
Provides an introduction to global mental health through the lens of medical anthropology. Students will gain a holistic understanding of prescient concerns in global mental health and the ways in which anthropology can contribute an understanding of the experience, diagnosis, treatment, and management of mental health issues by diverse populations. GE diversity global studies course.

3350 Prehistoric Indians of the Ohio Valley U 3
The archaeology and cultural history of the Ohio Valley from the first human settlement to European colonization, emphasizing the Adena, Hopewell, and Ft Ancient traditions. Prereq: 2201 (201), or permission of instructor. Not open to students with credit for 350.

3401 Fundamentals of Archaeology U 3
Introduction to basic archaeological theory and practice including fundamental field and laboratory, principles of survey, excavation, chronological analysis, typology, and paleoethnography. Prereq: 2201 (201), or permission of instructor. Not open to students with credit for 401.

3409 Primate Evolution U 3
Examination of the origin, radiation, and (in some cases) extinction of each primate clade including prosimians, New World monkeys, Old World monkeys, apes, and humans. Prereq: Not open to students with credit for 409.

3411 Human Ecological Adaptations U 3
A study of the interactive relationships between humans and their environments, past and present, with a focus on human biology. EEOB 400 recommended. Prereq: 2200 (200), or permission of instructor. Not open to students with credit for 411.

3416 Latin American Peoples and Cultures U 3
Latin American peoples and cultures. Prereq: Not open to students with credit for 416.

3418 Regional Survey of the Anthropology of Africa U 3
Overview of anthropological studies of traditional African societies, with themes of European colonialism, kinship, social organization, economics, and politics. Prereq: Not open to students with credit for 421.05.

3419 Latin American Cultures and Migration in Global Perspective U 3
An intensive ethnographic investigation of Latin American and Caribbean migration (Mexico, Ecuador, The Dominican Republic) including the history of migration; contemporary movement; and transnationalism. GE soc sci orgs and politics course.

3420 Indians of North America U 3
Development of culture change in North American Indians. Prereq: Not open to students with credit for 421.08. GE soc sci indivs and groups course.

3434 Archaeology of the Holy Land U 3
Archaeologists examine the cultural phenomena of the Bible and Qur’an in their historical context by studying a broad range of archaeological cultures in the periods during which the Bible and Qur’an came to be written texts. The course provides an introduction to the archaeology of periods and cultures 3500 BCE-700 CE in the Holy Land and its neighbors. GE cultures and ideas course.

3451 Archaeology of the Ancient Near East U 3
Archaeology of the Levant, Mesopotamia and Egypt from human origins through the age of pyramids and ziggurats. Prereq: Not open to students with credit for 451.
3452 Archaeology of the Pacific Islands U 3
Introduces the prehistory of the Pacific Islands from an archaeological perspective. It emphasizes voyaging, colonization, and the emergence of cultural complexity. Prereq: Not open to students with credit for 452.

3500 Primate Sexuality U 3
An evolutionary approach to the diversity of mating systems, morphologies, processes, and behaviors among prosimians, monkeys, apes, and humans. Prereq: 2200 (200). Not open to students with credit for 500.

3504 Introduction to Anatomy U 3 - 4
Introduction to Anatomy. Prereq: Not open to students with credit for 504.

3554 Archaeology of North America U 3
Detailed survey of native American prehistory: survey of the archaeology and cultural history of North America. Prereq: 2201 (201). Not open to students with credit for 553.02.

3555 New World Prehistory: Ancient Maya Civilization U 3
Detailed survey of native American prehistory: recent archeological and epigraphic discoveries and examines the ancient Maya civilization of Mesoamerica. Prereq: 2201 (201). Not open to students with credit for 553.04.

3597.01 Crisis! An Anthropological Perspective of Global Issues U 3
Analysis of cultural conflict in developing nations resulting from rapid and extensive technological and social change. Prereq: Not open to students with credit for 4597.01 or 597.01. GE soc sci indivs and groups and diversity global studies and cross-disciplinary seminar course.

3597.02 Women, Culture, and Development U 3
An analysis of the dramatic changes occurring in women's lives in response to development and modernization; developing and developed countries contrasted. Prereq: Not open to students with credit for 4597.02 or 597.02. GE soc sci indivs and groups and diversity global studies and cross-disciplinary seminar course.

3604 Intro to the Methods of Archaeological Science U 3
Introduces students to the myriad of interdisciplinary techniques that allow us to understand the human condition. Reviewed methods and case studies include ancient DNA analysis, stable and radiogenic isotopes, zooarchaeology, paleoethnobotany, material science, remote sensing, etc. This course is taught at an introductory level for non-science majors. Anthrop 2201 is suggested.

3623 Environmental Anthropology U 3
Theory and ethnographic examples of human-environment interactions, focusing on the role of culture and behavior in environmental adaptation. Prereq: 2202 (202) or equiv; or permission of instructor. Not open to students with credit for 5623 or 620.05.

4525 History of Anthropological Theory U 3
Major theoretical viewpoints in anthropology seen in their historical context. Prereq: 2202 (202), or permission of instructor. Not open to students with credit for 525 or 3525.

4597.03 The Prehistory of Environment and Climate U 3
History of modern biotic communities, biological evidence of climatic change during the late glacial and Holocene, and exploration of the responses of terrestrial ecosystems to climatic functions. Prereq: Honors standing, and Jr or Sr standing. Not open to students with credit for 597.03. GE soc sci human, nat, and ecos resources; diversity global studies; cross-disciplinary seminar course.

4998 Undergraduate Research in Anthropology U 1 - 6
Undergraduate research in variable topics. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 15 completions. This course is graded S/U.

4998H Undergraduate Research in Anthropology-Honors U 1 - 6
Undergraduate research in variable topics. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 15 completions. This course is graded S/U.

4999 Undergraduate Thesis Research U 2 - 6
Undergraduate thesis research. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 3 completions. This course is graded S/U.

4999H Honors Thesis Research U 2 - 6
Honors Thesis Research. Prereq: Honors standing, and a grade of A in at least half of Anthrop courses taken, and an average of B in the remainder, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 3 completions. This course is graded S/U.

5193.01 Individual Studies: Theory U G 1 - 80
Theory. Prereq: Permission of instructor. Repeatable. This course is graded S/U.

5193.05 Individual Studies: Prehistory U G 1 - 99
Prehistory. Prereq: Permission of instructor. Repeatable. This course is graded S/U.

5193.06 Individual Studies: Ethnography U G 1 - 99
Ethnography. Prereq: Permission of instructor. Repeatable. This course is graded S/U.

5193.07 Individual Studies: Physical Anthropology U G 1 - 99
Physical Anthropology. Prereq: Permission of instructor. Repeatable. This course is graded S/U.

5193.08 Individual Studies: Unclassified U G 1 - 99
Unclassified. Prereq: Permission of instructor. Repeatable. This course is graded S/U.

5194 Group Studies U G 1 - 12
Designed to give groups of students an opportunity to pursue special studies in topics not otherwise offered. Prereq: Permission of instructor. Repeatable.

5600 Evolutionary Medicine U G 3
Biomedical and biosocial influences on problems of human health throughout the world, focusing upon the evolutionary implications of those problems. Prereq: Not open to students with credit for 601.01.

5601 The Anthropology of Sex, Drugs, and HIV U G 3
Bicultural and sociocultural aspects of health in modern and prehistoric populations. Prereq: Not open to students with credit for 601.02.

5602 Women’s Health in Global Perspective U 3
A cross-cultural comparison of the political, economic, social, and biological issues surrounding women’s health. Prereq: 2200 (200), or permission of instructor. Not open to students with credit for 601.04. GE diversity global studies course.

5603 Strategy of Archaeological Field Research U G 3
Detailed examination of select topics concerning the recovery and analysis of archaeological data. Design of archaeological data recovery programs and their implementation through survey, excavation, and other methods. Prereq: 3401 (401). Not open to students with credit for 602.01.

5606 Who Owns the Past? U G 3
Examines key ethical and epistemological issues in archaeology, including changing cultural politics. Prereq: 2201 (201) and 3401 (401). Not open to students with credit for 602.04.

5607 Human Osteology U G 3
Study of human skeletal anatomy. Prereq: 2200 (200), or permission of instructor. Not open to students with credit for 603.01.

5608 Skeletal Biology U G 3
A survey of bone biology, including histogenesis, histomorphology, and physiology of bone; topics include bone structure, growth and development, physiology, and anthropological applications. Prereq: 2200 and 5607, or permission of instructor. Not open to students with credit for HntrRhSc: 5608. Cross-listed in HntrRhSc.

5609 Dental Anthropology U G 3
Evolutionary anthropology of human and non-human primate teeth. Prereq: 2200 (200) or equiv, or permission of instructor. Not open to students with credit for 5643 (603.03).

5610 Bioarchaeology U G 3
Study of humans remains from archaeological settings, with emphasis on relationship between biology, culture, health, and behavior. Prereq: 2200 (200), or permission of instructor. Not open to students with credit for 603.04.

5614 Ethnobotany U G 3
Introduction to the anthropological study of human interactions with the plant world. Prereq: A course in Anthrop or PlntBio at the 2000 level or above, or permission of instructor. Not open to students with credit for 610.

5615 Evolutionary Perspectives on Human Behavior U G 3
Advanced survey of contemporary evolutionary theories of human behavior and culture and their relevance to the broader discipline. Prereq: 2200 (200) and 2202 (202), and 10 additional cr hrs in Anthrop or permission of instructor. Not open to students with credit for 611.

5620 Hunters and Gatherers U G 3
Overview of anthropological studies of people who subsist primarily by hunting and gathering with food. Prereq: 2202 (202) or equiv, or permission of instructor. Not open to students with credit for 620.01.
<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>5624</td>
<td>The Anthropology of Food: Culture, Society and Eating</td>
<td>3</td>
<td>Explores food traditions, global expansion of foods and the production/exchange of food in culture and society. Prereq: 2200 (201), 2201 (201), or 2202 (202), or permission of instructor. Not open to students with credit for 620.08.</td>
</tr>
<tr>
<td>5626</td>
<td>More: Culture and Economic Life</td>
<td>3</td>
<td>An analysis of economic rationality in non-market and market societies; resource allocation, work organization, product disposition, exchange, money, trade, and development. Prereq: 2202 (202) or equiv, or permission of instructor. Not open to students with credit for 620.15.</td>
</tr>
<tr>
<td>5627</td>
<td>Migrants and Refugees: The Anthropology of Mobility</td>
<td>3</td>
<td>This course is an anthropological investigation of human mobility with a focus on the movement of migrants and refugees. Credit for 2202 is recommended but not required.</td>
</tr>
<tr>
<td>5641</td>
<td>Primate Behavior</td>
<td>3</td>
<td>A broad survey of living primates, major taxonomic groups within the order, diet, group living, mating strategies, predation, intelligence. Prereq: Not open to students with credit for 640.01.</td>
</tr>
<tr>
<td>5642</td>
<td>Growth and Development</td>
<td>3</td>
<td>Growth and development. Prereq: 2200 (200) or equiv, or permission of instructor. Not open to students with credit for 640.02.</td>
</tr>
<tr>
<td>5644</td>
<td>Forensic Anthropology</td>
<td>3</td>
<td>Application of osteological and bioarchaeological methods in forensic science. Prereq: 2200 (200) and 5607 (603.01) or equiv, or permission of instructor. Not open to students with credit for 640.04.</td>
</tr>
<tr>
<td>5645</td>
<td>Biology of Senescence</td>
<td>3</td>
<td>Biology of human senescence, aging, longevity, and chronic disease; evolutionary theories, mechanistic models, biocultural influences, cellular and physiological processes; biodemography, interventions, hormesis. Prereq: 2200 (200), Biology 1101 (101), or 1113 (113), or permission of instructor. Not open to students with credit for 640.05.</td>
</tr>
<tr>
<td>5650</td>
<td>Research Design and Ethnographic Methods</td>
<td>3</td>
<td>Students learn to study anthropological problems through hands on experience with ethnographic methods, critical discussion of issues in ethnographic research and design of an ethnographic study. Prereq: 2202 (202), or permission of instructor. Not open to students with credit for 650.</td>
</tr>
<tr>
<td>5651</td>
<td>Spatial Analysis for Anthropologists</td>
<td>3</td>
<td>Introduces the analysis of spatial data in anthropological research; data collection; analysis using GIS; theoretical and methodological issues pertaining to research design. Prereq: Geog 607 (undergrads only), or permission of department. Not open to students with credit for 651.</td>
</tr>
<tr>
<td>5684</td>
<td>Summer Field School in Archaeology - Fee</td>
<td>3-15</td>
<td>Practical experience in archaeological fieldwork including site survey, excavation, and mapping, preservation, and related methods and techniques of data recovery. This course has a lab fee for room, board and supplies. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 3 completions.</td>
</tr>
<tr>
<td>5685</td>
<td>Summer Field School in Archaeology</td>
<td>2-15</td>
<td>Practical experience in archaeological fieldwork including site survey, excavation, and mapping, preservation, and related methods and techniques of data recovery. Prereq: Permission of instructor. Repeatable.</td>
</tr>
<tr>
<td>5686</td>
<td>Practical Training in Forensic Anthropology</td>
<td>3</td>
<td>Hands-on Forensic Anthropology course covering crime scene processing, evidence collection, and case development for testimony in court. Students process indoor and outdoor crime scenes where foul play is suspected to have occurred and then learn about expert testimony.</td>
</tr>
<tr>
<td>5700</td>
<td>Anthropology, Public Health, and Human Rights</td>
<td>3</td>
<td>This course provides an introduction to the relationship between medical anthropology and global public health with an emphasis on social justice and health as a human right. Health policy, evidence-based medicine, children's health, HIV, TB, chronic disease, citizenship and deservingness, and other health topics will be discussed and analyzed from a cross-cultural and ethnographic perspective.</td>
</tr>
<tr>
<td>5701</td>
<td>Health and Healing in Latin America and the Caribbean</td>
<td>3</td>
<td>A biocultural examination of traditional and western healing practices and health disparities across the Latin American region. This course considers diverse perspectives on disease causality and prevention including shamanism, ethnophysics, and ethnobotany.</td>
</tr>
<tr>
<td>5797</td>
<td>Study at a Foreign Institution</td>
<td>1-27</td>
<td>An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Prereq: Permission of dept chairperson. Repeatable to a maximum of 40 cr hrs or 27 completions. This course is progress graded.</td>
</tr>
<tr>
<td>7001</td>
<td>Society and Environment</td>
<td>3</td>
<td>This course provides an overview of major theoretical paradigms that have shaped anthropological research on humans and their environment. The goal is to train students to think theoretically as anthropologists by critically examining primary and secondary sources for a selection of theoretical paradigms on social-ecological systems.</td>
</tr>
<tr>
<td>7002</td>
<td>Anthropological Approaches to Health</td>
<td>3</td>
<td>This course provides an overview of major theories, paradigms and approaches that have shaped anthropological research on the physical, biological, social and cultural factors that shape human health in the past and present. The goal of this course is to provide students with an understanding of how anthropologists define and study health.</td>
</tr>
<tr>
<td>7003</td>
<td>Human Evolutionary History</td>
<td>3</td>
<td>This course provides an overview of major theoretical paradigms that have shaped anthropological research on human evolutionary history. The goal is to train students to think theoretically as anthropologists by critically examining primary and secondary sources for a selection of theoretical paradigms in human evolutionary history.</td>
</tr>
<tr>
<td>7004</td>
<td>Social-Ecological Systems</td>
<td>3</td>
<td>This course provides an overview of frameworks, theories and methods used in the interdisciplinary study of social-ecological systems, including complexity theory, complex adaptive systems, resilience, institutional analysis, ecosystem services, and coupled human and natural systems. Students will also learn how to effectively collaborate in interdisciplinary studies of social-ecological systems. Prereq: Not open to students with credit for ENR 7004. Cross-listed in ENR.</td>
</tr>
<tr>
<td>7005</td>
<td>Careers with Anthropology</td>
<td>3</td>
<td>This course provides an overview of various career paths for students with graduate degrees in anthropology. It will help students from all sub-fields of anthropology develop professional skills in preparation for life after graduation. Specifically, it focuses on the ways in which they can apply anthropological concepts, research methodologies, and analytical skills in a wide range of careers.</td>
</tr>
<tr>
<td>7007</td>
<td>Academic Workshop</td>
<td>1</td>
<td>This workshop has as its main goal to offer students of all cohorts a place for research presentations, academic discussions and professional development. The workshop consists of weekly meetings with a diversity of topics arranged by the course coordinator. Repeatable to a maximum of 14 cr hrs.</td>
</tr>
<tr>
<td>7101</td>
<td>Research Design</td>
<td>3</td>
<td>In this seminar each student will develop a research design for an anthropological research project. The focus of the seminar is on designing the research project and learning how research results and conclusions are assessed and disseminated. Topics include the relationship between theory and methods, ethics and IRB protocols, data collection methods, analysis of qualitative and quantitative data.</td>
</tr>
<tr>
<td>7701</td>
<td>Advanced Topics in Physical Anthropology: Modern Human Physical Variation</td>
<td>3</td>
<td>Discussion of advanced topics in human variation and hominin evolution; emphasis on critical analysis and evolution of theoretical topics in research design. Survey of modern human biological diversity; underlying evolution and adaptability. Prereq: Not open to students with credit for 701.01.</td>
</tr>
<tr>
<td>7702</td>
<td>Advanced Topics in Physical Anthropology: Hominin Paleoanthropology</td>
<td>3</td>
<td>Advanced topics in human variation and hominin evolution; emphasis on critical analysis and evolution of theoretical topics in research design. Prereq: Not open to students with credit for 701.02.</td>
</tr>
<tr>
<td>7703</td>
<td>Theories in Cultural Anthropology</td>
<td>3</td>
<td>Major theoretical orientations in cultural anthropology; the developmental histories of the major theoretical schools and examination of their respective philosophical foundations. Prereq: Not open to students with credit for 702.</td>
</tr>
<tr>
<td>7720</td>
<td>Teaching In Anthropology</td>
<td>4</td>
<td>Focuses on skills and pedagogy involved in teaching introductory anthropology. Prereq: Grad standing in Anthrop or related discipline.</td>
</tr>
<tr>
<td>7777</td>
<td>Data Collection Workshop</td>
<td>1</td>
<td>The workshop has as its main goal to introduce several different data collections techniques that are commonly applied in Anthropology. The workshop consists of lectures by the faculty in the department, who will introduce their research and data collection protocols. The lectures by Faculty will be complemented by discussions with the invited Faculty and readings that cover the methods discussed. Repeatable to a maximum of 4 cr hrs.</td>
</tr>
<tr>
<td>7800</td>
<td>We are what we eat: Applications of biogeochemistry</td>
<td>3</td>
<td>Students will study both current and classic geochemical methodological developments and case studies from throughout the globe. Provides an introductory understanding of common methods in archaeochemistry and biogeochemistry, while emphasizing how these studies have pushed the epistemological boundaries of archaeological knowledge.</td>
</tr>
</tbody>
</table>
7801 Archaeology of Hunter-Gatherer Societies
 Advanced study of hunter-gatherer band society from theoretical, ethnographic, and archaeological perspectives.
 Prereq: Grad standing. Not open to students with credit for 801.01.

7802 Origins of Food Production
 Advanced theoretical and comparative study of the origins of food production in the Old and New Worlds.
 Prereq: Admission to Grad program. Not open to students with credit for 801.02.

7803 The Archaeology of Complex Societies
 Advanced theoretical and comparative study of the rise and fall of complex societies in antiquity in the Old and New Worlds.
 Prereq: Admission to Grad program. Not open to students with credit for 801.03.

7804 Issues in Archaeological Theory
 Examination of the assumptions and concepts underlying analysis of archaeological data; methods of reconstructing cultural history, past lifeways, and explaining cultural change.
 Prereq: Admission to Grad program. Not open to students with credit for 802.

7805 Seminars in Ethnology
 Seminars in Ethnology.
 Repeatable to a maximum of 27 cr hrs or 14 completions.

7999 Research in Anthropology: Thesis
 Research for thesis purposes only.
 Repeatable to a maximum of 18 cr hrs or 18 completions. This course is graded S/U.

8193.01 Individual Studies: Theory
 Theory.
 Prereq: Permission of Instructor. Repeatable. This course is graded S/U.

8193.04 Individual Studies: Research Methods
 Research methods.
 Prereq: Permission of Instructor. Repeatable. This course is graded S/U.

8193.05 Individual Studies: Prehistory
 Prehistory.
 Prereq: Permission of Instructor. Repeatable. This course is graded S/U.

8193.06 Individual Studies: Ethnology
 Ethnology.
 Prereq: Permission of Instructor. Repeatable. This course is graded S/U.

8193.07 Individual Studies: Physical Anthropology
 Physical anthropology.
 Prereq: Permission of Instructor. Repeatable. This course is graded S/U.

8193.08 Individual Studies: Unclassified
 Unclassified.
 Prereq: Permission of Instructor. Repeatable. This course is graded S/U.

8193.09 Individual Studies: Cultural Anthropology
 Cultural anthropology.
 Prereq: Permission of Instructor. Repeatable. This course is graded S/U.

8194 Group Studies
 Group studies.
 Repeatable.

8827 Communicating Anthropology
 This course will walk students through the process of communicating research across several common platforms available to academics nowadays. The main goal is to work with students on the development of their academic narratives and then discuss how such narratives can (and should) be adjusted to different audiences.

8882 Writing Research Proposals in Anthropology
 The primary focus of this course is on writing competitive grant proposals in anthropology and students should use this course to develop their own research and grant proposals.

8891.04 Seminars in Cultural Anthropology: Human Ecology
 Human ecology.
 Repeatable to a maximum of 27 cr hrs or 14 completions.

8891.05 Graduate Seminar in Research Design and Ethnographic Methods
 Study design and data analysis.
 Repeatable to a maximum of 8 cr hrs.

8892.01 Seminars in Physical Anthropology: Evolutionary Theory
 Evolutionary theory.
 Prereq: Grad standing in Anthrop. Repeatable to a maximum of 6 cr hrs or 3 completions.

8892.09 Seminars in Physical Anthropology: Biocultural Medical Anthropology
 Explores human reproduction from a biocultural and ecological perspective.
 Repeatable to a maximum of 27 cr hrs.

8892.11 Seminars in Physical Anthropology: Quantitative Methods
 Quantitative methods.
 Repeatable to a maximum of 6 cr hrs or 3 completions.

8892.12 Seminars in Physical Anthropology: Quantitative Methods II: Advanced
 Quantitative Methods II: Advanced.
 Repeatable to a maximum of 27 cr hrs or 14 completions.

8892.13 Seminars in Physical Anthropology: Bioarchaeology
 Seminar on the study of human remains from archaeological contexts; focus on health, disease, injury, biomechanics, diet, and population history.
 Repeatable to a maximum of 27 cr hrs.

8892.14 Seminars in Physical Anthropology:
 Seminars in physical anthropology.
 Repeatable to a maximum of 27 cr hrs or 14 completions.

8893.06 Seminars in Prehistory: Paleodiet
 Advanced survey of current archaeological research on past human diet, with emphasis on methods. Provides graduate-level advanced study of human diet as revealed through the archaeological record.
 Prereq: Not open to students with credit for 830.06.

8999 Research in Anthropology: Dissertation
 Research for dissertation purposes only.
 Repeatable. This course is graded S/U.

Arabic

1101.01 Elementary Modern Standard Arabic I
 Developing the ability to use Arabic functionally and communicatively in context; intensive oral interaction with instructor and fellow students; the basics of the writing system. Classroom track. Not open to native speakers of Arabic.
 Prereq: Not open to students with 1101.02 or 4 cr hrs of 1101.51. This course is available for EM credit. GE for lang course.

1101.02 Elementary Modern Standard Arabic I: Intensive
 Developing the ability to use Arabic functionally and communicatively in context; intensive oral interaction with instructor and fellow students; the basics of the writing system. Intensive classroom track. Not open to native speakers of Arabic.
 Prereq: Permission of department. Concurs: 1102.02. Not open to students with credit for 1101.01, 1101.02, or 4 credit hours of 1101.51. This course is available for EM credit. GE for lang course.

1102.01 Elementary Modern Standard Arabic II
 Developing further language ability through learning how to perform certain functions orally and using them with fellow students; reading and writing passages reflecting their abilities.
 Classroom track. Not open to native speakers of Arabic.
 Prereq: 1101.01 or 4 cr hrs of 1101.51. Not open to students with credit for 1102.02 or 4 cr hrs of 1102.51. This course is available for EM credit. GE for lang course.

1102.02 Elementary Modern Standard Arabic II: Intensive
 Developing further language ability through learning how to perform certain functions orally and using them with fellow students; reading and writing passages reflecting their abilities. Intensive classroom track. Not open to native speakers of Arabic through regular course enrollment, transfer, or EM credit.
 Prereq: Permission of department. Concurs: 1102.02. Not open to students with credit for 1102.01 or 4 hrs of 1102.51. This course is available for EM credit. GE for lang course.

1103.01 Intermediate Modern Standard Arabic I
 Building on previously acquired functional abilities; using Arabic to express opinion and feelings; oral interaction in the classroom; reading authentic texts or various genres. Classroom track. Not open to native speakers of Arabic.
 Prereq: 1102.01, 1102.02, or 4 cr hrs of 1102.51. Not open to students with credit for 1103.02 or 4 cr hrs of 1103.51. This course is available for EM credit. GE for lang course.

1103.02 Intermediate Modern Standard Arabic II: Intensive
 Building on previously acquired functional abilities; using Arabic to express opinion and feelings; increased oral interaction in the classroom; reading simplified original texts. Intensive classroom track. Not open to native speakers of Arabic through regular course enrollment, transfer, or EM credit.
 Prereq: Permission of department. Concurs: 2104.02. Not open to students with credit for 1103.01 or 4 cr hrs of 1103.51. This course is available for EM credit. GE for lang course.

1113 Introductory Arabic for Heritage Learners I
 This intensive course is intended for heritage speakers and qualified Arabic speakers. It combines three semesters of Modern Standard Arabic into one semester and focuses on the productive skills (speaking and writing).
 Prereq: To qualify for this course, students are expected to be able to speak and understand well an Arabic dialect. This prior knowledge of a dialect is essential and will be used as a bridge towards learning Modern Standard Arabic. An interview will be conducted by the course instructor in order to establish a proficiency level. GE for lang course.
Arabic Pronunciation
The Arabic Pronunciation course is designed to improve and perfect the student's pronunciation of Modern Standard Arabic. Students will learn the articulatory features of speech production and ways in which to correct and enhance their oral production. They will gradually be introduced to some basic linguistic terminology of articulatory phonetics. Students will develop functional intelligibility.
Prereq: 1103 or equiv., or permission of instructor.

Intermediate Modern Standard Arabic
Initiating and sustaining communication, reading and understanding short authentic passages, and writing to express many language functions. Regular classroom track. Not open to native speakers of Arabic.
Prereq: 1103.01 or 4 credit hours of 1103.51. Not open to students with credit for 2104.02.

Intermediate Modern Standard Arabic II: Intensive
Initiating and sustaining communication; reading and understanding short original texts and passages; writing to express many language functions. Intensive classroom track. Not open to native speakers of Arabic.
Prereq: Permission of department. Concur: 1103.02. Not open to students with credit for 2104.01.

Colloquial Arabic I
Introduction to the phonology and grammar of the everyday spoken language used in the Eastern Arab World.
Prereq or concur: 1103.01 or 1103.02. Not open to students with credit for 4111.

Colloquial Arabic II
Continued study of the phonology and grammar of the everyday spoken language used in the Eastern Arab world.
Prereq: 2111 or 4111. Not open to students with credit for 4112.

Individual Studies
Prereq: Permission of department or instructor. Repeatable to a maximum of 10 cr hrs or 5 completions. This course is graded S/U.

Group Studies
Prereq: Permission of department or instructor. Repeatable to a maximum of 15 cr hrs or 5 completions.

Contemporary Arab Cultures: Arts, Mass Media, Society
This course explores the intersecting political, artistic, and intellectual currents and practices that have shaped contemporary Arab cultures. It is organized as a survey of different cultural phenomena in Arab societies and diasporas including: the Arabic language and its varieties, music, poetry, law, television & cinema, and more.
GE culture and ideas and diversity global studies course.

Classical and Medieval Arabic Literature in Translation
Reading and analysis of major works of Arabic literature from the 6th to the 17th centuries including classical poetry, the Qur'an, and the Arabian Nights.
Prereq: English 1110 (110). Not open to students with credit for 371. GE lit and diversity global studies course.

Modern Arabic Literature in Translation
Reading and analysis of representative works of the 19th and 20th centuries; by contemporary women authors.
Prereq: English 1110 (110). Not open to students with credit for 2702 (372), 2702H (372H), 372, or WGSSt 2702H (372H). GE lit and diversity global studies course. Cross-listed in WGSSt.

Modern Arabic Literature in Translation
Reading and analysis of representative works of the 19th and 20th centuries by contemporary women authors.
Prereq: Honors standing, and English 1110 (110) or equiv. Not open to students with credit for 372H, 2702 (372), WGSSt 2702 (372), or 2702H (372H). GE lit and diversity global studies course. Cross-listed in WGSSt.

Morocco May Tour: The Arab World Up Close; History, Religion, Culture and Politics
Introduces students to 19th- and 20th-Century as well as contemporary history, politics, literature and culture of Morocco, through conversations with major political, civil, and intellectual figures in visits to such places as the Royal Library, The Royal Academy for Amazigh Studies, Parliament, NGOs premises, as well as to Fez, Meknes, and Marrakesh.

Intermediate Modern Standard Arabic III
Developing reading skills through reading adapted and authentic Arabic texts; selections reflect cultural and literary aspects of Arabic culture.
Prereq: 2104.

Contemporary Folklore in the Arab World
Study of contemporary folklore of the Arab World including verbal art, material culture, visual self-presentation, and performance.
Prereq: Not open to students with credit for 377. GE culture and ideas and diversity global studies course. Cross-listed in CompStd 3657.

Introduction to Arabic Philosophy
Surveying the development and major subjects and thinkers of the most vivid period of Arabic philosophy.

Place, Space, and Migration in Modern Arabic Literature and Film
This course on modern Arabic literature and culture in translation focuses on questions of belonging, relationship to space, and migration. It examines how Arabic literary narratives, films, documentaries, and other arts have imagined modes of belonging to spaces such as cities and nations, the natural world (and even the universe) from the early postcolonial period to the present.
Prereq: English 1110. GE lit and diversity global studies course.

A Thousand and One Nights: Storytelling in Arabic and World Literature
In this course, we will read the 14th century collection of tales that constitute the earliest existing version of The Thousand and One Nights and analyze it both in relation to the medieval genres and concerns that shaped it and through contemporary theoretical frameworks.
Prereq: English 1110. GE lit course.

High Intermediate Modern Standard Arabic
Continued development of language skills through reading and evaluating a variety of authentic Arabic texts and genres; writing compositions on various aspects of Arabic culture.
Prereq: 3105.

Advanced Arabic Grammar
Advanced discussion of Arabic morphology and syntax with readings from both modern and classical texts from various genres.
Prereq: 4106.

Arabic Media
ReadingListening to contemporary media in Arabic—youth culture, politics, contemporary issues.
Prereq: 2104.01 or 2104.02. Not open to students with credit for 420.

Undergraduate Research in Arabic
Offers undergraduates with special aptitudes a greater opportunity to do more independent study and research than is possible in normal course work.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 5 completions. This course is graded S/U.

Undergraduate Honors Research in Arabic
Offers undergraduate honors students a rigorous opportunity to do more independent study and research than is possible in normal coursework.
Prereq: Honors standing, and permission of instructor. Not open to students with credit for 783H. This course is graded S/U.

Undergraduate Thesis
Offers undergraduates with special aptitudes and advanced skills the opportunity to do independent study leading to a thesis.
Prereq: Sr standing, B average in Arabic coursework, permission of instructor. Repeatable to a maximum of 10 cr hrs or 5 completions. This course is graded S/U.

Undergraduate Honors Thesis
Offers undergraduates with special aptitudes the opportunity to do independent study leading to an honors thesis.
Prereq: Honors standing, or permission of instructor. Repeatable to a maximum of 10 cr hrs or 5 completions. This course is graded S/U.

Individual Studies
Prereq: Permission of department. Repeatable to a maximum of 20 cr hrs or 5 completions. This course is graded S/U.

Group Studies
Prereq: Permission of department. Repeatable to a maximum of 20 cr hrs or 5 completions.

Religion, Culture and Politics
Introduction to the phonology and grammar of the everyday spoken language used in the Eastern Arab World.

Translation: Theory and Practice
Examination of some general guidelines for translating from Arabic to English or from English to Arabic, depending on the first language of the student. Requires advanced reading proficiency.
Prereq: Arabic 3105, or permission of instructor. Not open to students with credit for 615.

History of the Arabic Language
Survey of the evolution of the Arabic language in its cultural and historical setting.
Prereq: Not open to students with credit for 611.

Classical Arabic Poetry
Selected readings from classical and medieval Arabic poetry; Arabic metrics and literary theory.
Prereq: 3105 (401), or permission of instructor. Not open to students with credit for 627.

Classical Arabic Prose
Selected readings reflecting the evolution of Arabic prose literature from its origins to the late Abbasid period.
Prereq: 3105 (401), or permission of instructor. Not open to students with credit for 628.
5651  Contemporary Arabic Prose Fiction  U  G  3
Reading and analysis of short stories and novels representative of major developments and
trends of the 20th century.
Prereq: 3105 (401), or permission of instructor. Not open to students with credit for 651.

5652  Contemporary Arabic Poetry and Drama  U  G  3
Reading and analysis of plays and poems representative of major developments and trends of
the 20th century.
Prereq: 3105 (401), or permission of instructor. Not open to students with credit for 652.

5702  Arabic Folk Narrative in Translation  U  G  3
Literary and cultural aspects of 1001 Nights and other popular narratives (epics, legends, folktales)
in the Arab world.
Prereq: Not open to students with credit for 672.

5797  Study at a Foreign Institution  U  G  1 - 10
An opportunity for students to study at a foreign institution and receive Ohio State credit for
that work.
Repeatable to a maximum of 30 cr hrs or 5 completions. This course is progress graded.

6501  Modern Arab-Muslim Thought  U  G  3
Examining critically contemporary responses and revisions of Arab and Muslim classical
Humanism. Repeatable to a maximum of 9 cr hrs.

6701  Major Issues of Arabic Philosophy  U  G  3
Analyzing important texts dealing with God, man, knowledge, society, religion and politics;
discussing modern approaches and interpretations.
Prereq: 6 cr hrs of Arabic Literature at the 5000 level or equiv. Repeatable to a maximum of 9
or more cr hrs.

7601  Studies in Arabic Poetry  U  G  3
Advanced study of specific poetic periods, figures, and/or topics involving extensive reading
and discussion of appropriate primary and secondary source materials.
Prereq: 6 cr hrs of Arabic Literature at the 5000 level or equiv. Repeatable to a maximum of 9
cr hrs.

7602  Studies in Arabic Prose  U  G  3
Advanced study of specific periods, authors and/or genres of prose writing (literary or non-
literary) involving extensive reading and discussion of primary and secondary materials.
Prereq: 6 cr hrs of Arabic Literature at the 5000 level or equiv. Repeatable to a maximum of 12
cr hrs.

7891  Teaching Arabic at the College Level  U  G  3
Methods and techniques for the teaching of Arabic at the college level.
Prereq: GTA in NELC, or permission of instructor. Not open to students with credit for 801.

8891  Seminar in Arabic Studies  U  G  4
Intensive investigation of a selected topic or problem in Arabic linguistics, philology, literature,
or literary culture.
Prereq: Permission of instructor. Repeatable to a maximum of 16 cr hrs.

Architecture

1100  Architecture Survey  U  1
Introduction to the University, the Knowlton School of Architecture, and the disciplines of
architecture, landscape architecture, and city and regional planning.
Prereq: Not open to students with credit for 1100E, 100, 100H, CRPlan 1100 (100), 1100E,
LArch 1100 (100), 1100E, or any survey course. Cross-listed in LArch and CRPlan.

1100E  Architecture Survey Honors  U  1
Introduction to the University, the Knowlton School of Architecture and the professions of
architecture, city and regional planning and landscape architecture. Honors section.
Prereq: Honors standing. Not open to students with credit for 1100, 100, 100H, CRPlan 1100
(100), 1100E, LArch 1100 (100), 1100E, or any survey course. Cross-listed in LArch and CRPlan.

2220  Sustainability and the Built Environment  U  3
Introduction to sustainability and the built environment, emphasis on cultural context, including
contributing geographic, political, social, and economic factors which influence the form of the
constructed world.
Prereq: Not open to students with credit for 201 or 3rd and 4th year Arch majors. GE soc sci
human, nat, and econ resources course.

2220E  Sustainability and the Built Environment  U  3
Introduction to sustainability and the built environment, emphasis on cultural context, including
contributing geographic, political, social, and economic factors which influence the form of the
constructed world.
Prereq: Honors standing. Not open to students with credit for 201, or 3rd and 4th year Arch
majors. GE soc sci human, nat, and econ resources course.

2300  Outlines of the Built Environment  U  3
Introduction to architecture, landscape architecture, and planning as cultural practices that
shape the physical environment.
Prereq: Not open to students with credit for 1210, 2300E, LArch 1210, 2300, or 2300E. GE
cultures and ideas course. Cross-listed in LArch.

2300E  Outlines of the Built Environment  U  3
Introduction to the discipline of architecture and landscape architecture and planning with an
emphasis on the physical artifact and its formal and cultural context. Honors section.
Prereq: Honors standing. Not open to students with credit for 200, 1210, 2300, LArch 1210
(200), 2300, or 2300E. GE cultures and ideas course. Cross-listed in LArch.

2310  Introduction to Design  U  4
Introduction to the design of the physical environment through the exploration of form, space,
and order using drawing and modeling techniques.
Prereq: Not open to students with credit for 1410, 151, LArch 1410 (202), or LArch 2310.
Cross-listed in LArch.

2410  Architectural Design I  U  6
Architectural design with an emphasis on technique.
Prereq: Acceptance into B.S. Arch program. Concur: 5610. Not open to students with credit for
241 or 242.

2420  Architectural Design II  U  6
Architectural design with an emphasis on technique. Continuation of Arch 2410.
Prereq: 2410, or both 241 and 242. Concur: 5610 (only for students pursuing a B.S. in Arch).
Not open to students with credit for 243.

2610  Introduction to Digital Design Software  U  3
This course introduces students to architectural design strategies as they relate to introductory
computer tools.
Prereq: A grade of B- or above in 2310 or LArch 2310. Repeatable to a maximum of 15 or hrs.

3102  Modern Rome  U  3
Introduction to the historic and current architecture of Rome. Tour will reveal timeless and timely
influences on twentieth century North American architects and houses will challenge accepted norms of
home design and how those have evolved. The impact of "high" design on the everyday will be
a theme.
GE VPA course.

3194  Group Studies in Architecture  U  1 - 15
For group-based special studies in architecture within the frame of an instructor guided course.
Prereq: Permission of instructor. Repeatable to a maximum of 15 or hrs or 5 completions.

3195  Modern Rome  U  3
Architectural design with an emphasis on materiality. Continuation of Arch 3410.
Prereq: 3410, or both 341 and 342. Not open to students with credit for 343.

3410  Architectural Design III  U  6
Architectural design with an emphasis on materiality. Continuation of Arch 3195.
Prereq: 3195, or both 319 and 342. Not open to students with credit for 343.

3420  Architectural Design IV  U  6
Architectural design with an emphasis on materiality. Continuation of Arch 3190.
Prereq: 3190, or both 319 and 342. Not open to students with credit for 343.

3420.02  Architectural Design IV  U  3
Architectural design with an emphasis on materiality. Continuation of Arch 3410. Part two of two
with 3420.01.
Prereq: 3410 (341 and 342). Not open to students with credit for 343.

4193  Independent Studies in Architecture  U  1 - 15
For students who wish to pursue special independent studies in architecture with the guidance of
an advisor/instructor.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions. This
course is graded S/U.

4194  For Group Studies in Architecture  U  1 - 15
For group-based special studies in architecture within the frame of an instructor guided course.
Prereq: Permission of instructor. Repeatable to a maximum of 15 or hrs or 5 completions.

4410  Architectural Design V  U  6
Architectural design with an emphasis on organization.
Prereq: 3420 (343). Not open to students with credit for 441 or 442.

4420  Architectural Design VI  U  6
Architectural design with an emphasis on organization. Continuation of Arch 4410.
Prereq: 4410, 4995, or 4999R.

4956  Design Agency on Wicked Problems: World Building  U  3
Your Life
An era in rapid change locally and globally, technologically and socially, we are increasingly
confronted by complex emergent systems problems, or Wicked Problems. This course will
provide a theoretical framework for understanding and working on wicked problems, and uses
design methodologies coming from architectural design to work on the wicked problem of
designing your life.
Prereq: Not open to students with credit for 4956E. GE cultures and ideas and cross-
disciplinary seminar course.
Design Agency on Wicked Problems: World Building  
In an era of rapid change locally and globally, technologically and socially, we are increasingly confronted by complex emergent systems problems, or Wicked Problems. This course will provide a theoretical framework for understanding and working on wicked problems, and uses design methodologies coming from architectural design to work on the wicked problem of designing your life.
Prereq: Honors standing. Not open to students with credit for 4596. GE cultures and ideas course and cross-disciplinary seminar course.

Undergraduate Research Methods  
Focuses on a broad scope of research methods and the development of architectural design and planning research techniques and skills.
Prereq: Enrollment in a major within the Knowlton School of Architecture.

Undergraduate Research Methods  
Focuses on a broad scope of research methods and the development of architectural design and planning research techniques and skills. Honors section.
Prereq: Honors standing, and major within the Knowlton School of Architecture. Not open to students with credit for 738H.

Study Tour  
Group international and domestic travel programs. Opportunities tailored to complement the classroom experience. Repeatable to a maximum of 45 cr hrs or 3 completions.

Study Tour  
Group international and domestic travel programs. Opportunities tailored to complement the classroom experience. Prereq: Honors standing. Repeatable to a maximum of 45 cr hrs or 3 completions.

Interdepartmental Seminar  
Interdepartmental seminar; topics to be announced. Repeatable to a maximum of 15 cr hrs or 5 completions. Cross-listed in CRPlan and LArch.

Design Studio for Thesis  
Topical research/design projects in architecture. Prereq: Permission of instructor.

Architecture Honors Design Studio  
Topical research/design projects in architecture. Honors section.
Prereq: Honors standing, and major within the Knowlton School of Architecture. Not open to students with credit for 784H.

History of Architecture I  
History of architecture from ancient to contemporary: historical inquiry, physical and cultural influences, theories, and analytical techniques. Continues as 5120.
Prereq: Not open to students with credit for 600 and 601.

History of Architecture I  
History of architecture from ancient to contemporary: historical inquiry, physical and cultural influences, theories, and analytical techniques.
Prereq: Honors standing. Not open to students with credit for 600 and 601.

History of Architecture II  
History of architecture from ancient to contemporary: historical inquiry, physical and cultural influences, theories, and analytical techniques. Continuation of 5110.
Prereq: Not open to students with credit for 602.

History of Architecture II  
History of architecture from ancient to contemporary: historical inquiry, physical and cultural influences, theories, and analytical techniques.
Prereq: Honors standing. Not open to students with credit for 602.

History of Architecture III  
This course provides a survey of global architecture and its theoretical underpinnings from the mid-twentieth century to the present.

Professional Experience in Architecture  
Documentation of work experience in the field of architecture or suitable related areas.
Prereq: Permission of instructor. Repeatable to a maximum of 6 completions. This course is graded S/U.

Group Studies in Architecture  
For group-based special studies in architecture within the frame of an instructor guided course.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions.

Forms of Architectural Theory  
Survey of architectural theory that reviews the history of architecture while searching for reinterpretations, strategies, structures, and precedents.
Prereq: 5110 and 5120 (600, 601, and 602), or permission of instructor. Not open to students with credit for 610.

Topics in Architectural Theory  
Investigation of topics in architectural theory.
Prereq: Enrollment in Architecture major, or permission of instructor. Repeatable.
810 Environmental, Mechanical, and Electrical Systems in Architecture II
Qualitative and quantitative aspects of environmental issues and building service systems for architecture.
Prereq: Grad standing. Not open to students with credit for 663.

7193 Graduate Independent Studies in Architecture G 1 - 15
For students who wish to pursue special independent studies in architecture with the guidance of an advisor/instructor.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.

7194 Graduate Group Studies in Architecture G 1 - 15
For group-based special studies in architecture within the frame of an instructor guided course.
Prereq: Grad standing, and permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.

7220 Architectural Theory II G 3
Investigations in architectural theory. Continuation of 7210.
Prereq: Grad standing. Concur: 7240. Not open to students with credit for 803.01.

7310 Practice of the Design Professions G 3
Legal, financial, technical, and ethical issues in architectural practice.
Prereq: Enrollment in Master of Architecture Program. Not open to students with credit for 751 or 752.

7410 Advanced Architectural Design I G 6
Architectural design with an emphasis on materiality and organization.
Prereq: 6420 (843), or Enrollment in the Master of Architecture Graduate Program with advanced standing. Not open to students with credit for 841 or 842.

7420 Advanced Architectural Design II G 8
Architectural design with an emphasis on materiality and organization. Continuation of Arch 7410.
Prereq: 7410 (841). Not open to students with credit for 844.01.

8210 Master Practitioner Seminar G 1 - 3
Contemporary strategies in architectural practice and criticism as articulated by contemporary architects, theoreticians, and historians.
Prereq: Master of Architecture student in third year of program. Repeatable to a maximum of 3 cr hrs or 2 completions.

8220 Master Project Seminar G 3
Articulation of an architectural position that accounts for design production, disciplinary concerns, and cultural forces.
Prereq: Enrollment in Master of Architecture Program.

8410 Advanced Architectural Design III G 8
Advanced topics in architectural design.
Prereq: 7420 or 844.01. Not open to students with credit for 844.02 or 844.03.

8420 Advanced Architectural Design IV G 8
Advanced topics in architectural design.
Prereq: 8410 or 844.02. Not open to students with credit for 844.04.

Architecture 33

2000 Encountering Contemporary Art U 3
In this class, students will explore how and why contemporary artists make the work they do within a globalized art world. Through discussions, readings, virtual art excursions and related assignments, participants will apply critical written, oral, and visual communication skills as they analyze, interpret and respond to significant works of art, their contexts and histories.

2100 Beginning Drawing U 3
Students will explore fundamental freehand drawing techniques with a range of drawing methods, media and concepts; emphasis on drawing from observation and expressive experimentation. Students will apply written, oral and visual communication skills as they evaluate, interpret and respond to significant works of art and their own expressive goals. This course is available for EM credit. GE VPA course.

2100E Beginning Drawing U 3
Students will explore fundamental freehand drawing techniques with a range of drawing methods, media and concepts; emphasis on drawing from observation and expressive experimentation. Students will apply written, oral and visual communication skills as they evaluate, interpret and respond to significant works of art and their own expressive goals. GE VPA course.

2200 Real and Recorded Time U 3
Students will engage in informed observations, explorations and communication through time-based media methods and tools as a practical and theoretical foundation for creating original artworks in video, sound, installation, performance and screen.

2300 Two-Dimensional Studies U 3
Students will create aesthetic and interpretive studies exploring organizational elements and principles of 2D composition, visual perception, critical thinking, invention and material experimentation as they pertain to art practice. Students will advance written, oral and visual communication skills as they interpret and respond to significant works of art and their own expressive goals.
This course is available for EM credit. GE VPA course.

2300E Two-Dimensional Studies U 3
Students will create aesthetic and interpretive studies exploring organizational elements and principles of 2D composition, visual perception, critical thinking, invention and material experimentation as they pertain to art practice. Students will advance written, oral and visual communication skills as they interpret and respond to significant works of art and their own expressive goals.
GE VPA course.

2400 3-Dimensional Art U 3
Basic concepts of three-dimensional art focusing on structure with the organization of space and form, using a variety of materials, processes, tools.
This course is available for EM credit.

2555 Introduction to Digital Photography and Contemporary Issues U 3
Students will learn fundamental digital camera techniques and explore contemporary and historical issues in photography including the relationships between technique, concept, and aesthetics as well as the relationship between images, identity formation, and larger social structures.
Prereq: Not open to students with credit for 3555. GE VPA course.

2555H Introduction to Digital Photography and Contemporary Issues U 3
Students will learn fundamental digital camera techniques and explore contemporary and historical issues in photography including the relationships between technique, concept, and aesthetics as well as the relationship between images, identity formation, and larger social structures.
Prereq: Honors standing, or permission of instructor. Not open to students with credit for 3555H. GE VPA course.

2990 BFA Portfolio Review U 0
Successful BFA portfolio review.
Prereq: 2000 (200), 2100 (205), 2200 (208), 2300 (206), 2400 (207), and one core course in student's proposed area of concentration. Repeatable to a maximum of 2 completions. This course is graded S/U.

3000 Digital Image Manipulation U 3
Students learn to use Adobe Photoshop and Illustrator software while creating digital media artwork and gaining knowledge of digital artists. Experiences include image capture, generation, manipulation, interpretation, critique, working with the fair use principle, and professional artistic output.
Prereq: Not open to students with credit for 2500.

3001 Internet Art U 3
Integration of image, video, animation and audio for the creation of internet art. Issues of tactical media, identity construction and digital aesthetics emphasized.
Prereq: 2500 (350). Not open to students with credit for 451. Repeatable to a maximum of 6 cr hrs.

3002 Intro to Ceramics: Structure U 3
Introduction to Ceramic Structures: lab practices with various modeling and potter's wheel techniques with lectures covering a broad survey of structural ceramics from brick to tile to sculpture.
Prereq: Not open to students with credit for 2502. GE VPA course.

3003 Introduction to Glass Art U 3
Introduction to skills used in molten glass forming, including; gathering, hot sculpting, and blowing. Studio practice is further expanded by experimentation with glass kiln methods. Emphasis on the development of original artworks.
Prereq: Not open to students with credit for 2503. Repeatable to a maximum of 6 cr hrs.

3004 Life Studio Drawing I U 3
Students use a wide range of materials and processes to make drawings based on all aspects of life: the human figure, plants, animals, landscapes, interior spaces, etc. Students practice, appreciate and interpret drawing in relation to various traditions and as a basis for individual development.
Prereq: 2100. Not open to students with credit for 2504. Repeatable to a maximum of 6 cr hrs.

3005 Photography II: Introduction to Darkroom U 3
Students will explore and learn analogue darkroom processes including manual 35mm camera techniques, black and white film development, and archival silver gelatin printing methods. Students will gain knowledge of historical and contemporary issues in photography and develop verbal and written language skills to critique the construction of images. Limited number of loaner film cameras available.
Prereq: 2555 (3555). Not open to students with credit for 4005.
3006 Introduction to Relief and Intaglio Printmaking U 3
Students use a range of traditional processes in relief and intaglio, exploring the dynamics of their applications in the creation of unique works in print media. Students will apply oral and visual communication skills, evaluate, interpret and respond to significant works of art, the work of their peers, and their own expressive goals. 14 Weeks AU SP, 7 Weeks SU. Prereq: 2100 or 2300. Not open to students with credit for 2516.

3009 Film/Video I: Technologies and Analysis U 3
Course is designed as an intro to the fundamental concepts, language, and technologies needed to work in video, grounded in critical and historical context. While the lessons learned in this class will apply broadly to all moving-image work, the focus of the work will be on fine arts approaches to video. Students will work on a series of very short projects throughout the semester. Prereq: Not open to students with credit for 5501.

3012 Intro to Ceramics: Form and Surface U 3
Introduction to Utilitarian uses of Ceramics; lab practices with various modeling and potter's wheel techniques with lectures covering a broad survey of ceramic form and surface, both historic and contemporary. Prereq: Not open to students with credit for 2602.

3014 Visual Studies: Color U 3
Art 3014 Color is an introduction to seeing and using color for all disciplines. Projects deal with color organization, phenomena, and interaction. This course will nurture students' visual sensitivity to color behavior and color relationships in works of art and natural perception. You will also learn and practice effective methods of critical evaluation of works of art with respect to color. Prereq: 2000, 2100, 2300, or 3004 (2504). Not open to students with credit for 2514.

3016 Printmaking - Relief U 3
The practice and examination of several modes of artistic expression in the relief processes of printmaking. Prereq: 162, 170, 172, 182, 260, and 270 (prior to 2003), or Art 375 (after 2003); and HistArt 2001, 2002, 210, 211, 212, 213, or 216. Not open to students with credit for 470 and 376.

3017 Introduction to Sculpture U 3
An introduction to the principles of sculpture, emphasizing basic forming processes and materials. Includes traditional and non-traditional sculpture making concepts, processes and materials through additive, subtractive, and assemblage sculpture making processes. Prereq: 2400, or permission of instructor. Not open to students with credit for 2507.

3024 Painting I U 3
Students explore the dynamics of painting. Students make paintings using a variety of approaches with attention to color, light, form, paint application, space and composition. Students practice, appreciate and interpret painting as related to various traditions and as a basis for individual development. Prereq: Not open to students with credit for 2524.

3026 Printmaking - Serigraphy U 3
The practice and examination of several modes of artistic expression in the serigraphic processes of printmaking. Prereq: 3016, and 162, 170, 172, 182, 260, and 270 (pre 2003) or 375 (post 2003), and HistArt 210, 211, 212, 213, 216, 2001, or 2002. Not open to student with credit for 375 or 477.

3036 Printmaking - Intaglio U 3
The practice and examination of several modes of artistic expression in intaglio processes of printmaking. Prereq: 3006, or 162, 170, 172, 182, 260, and 270 (pre 2003), or 375 (post 2003), and HistArt 210, 211, 212, 213, 216, 2001, or 2002. Not open to students with credit for 375 or 478.

3046 Printmaking - Lithography U 3
The practice and examination of several modes of artistic expression in lithographic processes of printmaking. Prereq: 3016, or 162, 170, 172, 182, 260, and 270 (pre 2003), or 375 (post 2003), and HistArt 210, 211, 212, 213, 216, 2001, or 2002. Not open to students with credit for 375 or 479.

3053 Glass Basics: Blowing & Kiln Forming U 3
This course is designed to give the student a solid foundation in multiple aspects of glassmaking. Through technical demonstrations and hands-on experience students will be exposed to the glass construction methods ranging from cold (cutting, grinding and polishing), warm (kiln forming) and hot (blowing and sculpting). Prereq: 2000, and 2100 or 2200, or permission of instructor. Not open to students with credit for 2553.

3054 Painting II U 3
Students explore a variety of painting mediums emphasizing technical, historical and conceptual fundamentals of constructing paintings or "picture-objects." Students manipulate spatial and thematic pictorial relationships through painting on various surfaces with a variety of processes and begin to develop the ability to pursue individualized research, processes, themes, and aspirations. Prereq: 3024.

3056 Introduction to Lithography and Silkscreen Printmaking U 3
Students use a range of traditional processes in lithography and silkscreen printing, exploring the dynamics of their application in the creation of unique works in print media. Students will apply oral and visual communication skills as they evaluate, interpret and respond to significant works of art, the work of their peers, and their own expressive goals. 14 Weeks AU SP, 7 Weeks SU. Prereq: 2100 or 2300. Not open to students with credit for 2526.

3101 3D Modeling Sculpture U 3
Students learn, practice, and utilize 3D modeling software for generation of form, character, and environment. Includes conceptualization, development, and creation of digital assets for output to formats such as digital prints, 3D rapid prototyping, laser cutters and/or CNC mills. Prereq: 3000. Repeatable to a maximum of 6 cr hrs.

3104 Expanded Drawing U 3
Students expand their definition of drawing by exploring an array of contemporary, historical and conceptual ideas. Students make drawings using a variety of methods and materials, from archival to ephemeral. Students manipulate spatial and thematic pictorial relationships. Students begin to develop the ability to identify and pursue individualized research, processes, themes and aspirations. Prereq: 3004 or 3024.

3107 Life Sculpture U 3
Aspects of the human form studied in relation to the materials of sculpture; experimentation in a range of materials: clay, wax, cement, and plaster. Prereq: 2300 and 3507, or 207 and 307. Not open to students with credit for 482.

3191 Internship U 1 - 3
A cooperative education or internship assignment conducted under the supervision of a faculty member. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions.

3194 Group Studies U 3
Group studies for students in specialized programs. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs.

3201 Holography I U 3
The basic technique of three-dimensional image making; construction of a diode laser and use of this device to make holograms. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

3201H Holography I U 3
The basic technique of three-dimensional image making; construction of a diode laser and use of this device to make holograms. Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 9 cr hrs. GE VPA course. Cross-listed in Physics.

3307 Sculpture: Wood Construction U 3
In Art 3307 students will explore various methods of fabrication and construction to make both functional and expressive works out of wood. This course will proceed through basic introduction exercises and then 2 conceptually based projects, one that highlights additive techniques and one that focuses on the human body. Prereq: 2300. Not open to students with credit for 3007.

4002 Intermediate Ceramics: Architectonics U 3
Intermediate course focusing on the Architectural Ceramics; lab practices with various modeling and construction techniques with lectures covering a broad survey of the range of Architectural Ceramics, from structure to cladding to interior and exterior scale. Prereq: 3002 (2502) or 3012 (2602). Not open to students with credit for 3502.

4004 Special Topics: Drawing U 3
Special topics in intermediate to advanced drawing materials and processes for personal expression with emphasis on development of analytical and critical skills. Prereq: 3104, or Art 470 (after Atr Qtr 2003), or Art 370 (prior to Au Qtr 2003). Repeatable to a maximum of 6 cr hrs.

4006 Upper Level Printmaking: Intaglio + Relief U 3
Students practice/examine individual development and artistic creation through advanced exploration of intaglio & relief printmaking. They begin to develop the ability to identify/pursue individualized research, processes, themes and aspirations while they interpret/respond to significant works of art, work of their peers, and their own expressive goals through rigorous production and critique. Prereq: 3006. Repeatable to a maximum of 9 cr hrs.

4007 Sculpture: Topics in Experiential Making: Structure, U 3
Space, and Material
Exploration of a range of technical and conceptual concerns of Sculpture using primary materials with a focus on research and experimentation. Metal in AU, Wood in SP. Prereq: 4000 and 3017 (2007). Repeatable to a maximum of 6 cr hrs or 3 completions.

4009 Film/Video II: Experimental Strategies U 3
This course is designed as an overview of a broad range of strategies and issues unique to the practice sometimes labeled "experimental film," avant-garde cinema," or "video art." Intermediate theory and practice of creating film/video artwork. Emphasis on personal expression and experimental approaches. Prereq: 3009 or MvngImg 2201 or 2202, or permission of instructor. Not open to students with credit for 5551.
Intermediate Ceramics: Utility and Performance  U  3
Intermediate course focusing on the utilitarian uses of Ceramics; lab practices with various modeling and potter's wheel techniques with lectures covering a broad survey of the broad range of use, from a cup to a tool to performative gestures.
Prereq: 3002 (2502) or 3012 (2602). Not open to students with credit for 3602.

Advanced Painting and Drawing  U  3
This course is designed to assist and guide independent work. Each term will focus on special topics in painting/drawing, with a wide emphasis upon current directions, new media, techniques, social issues. Students will be encouraged to explore the use of a wide range of materials in experimental approaches to drawing/painting. Individual work will be augmented by lectures/discussions/field trips.
Prereq: 3024 and 3054. Repeatable to a maximum of 9 cr hrs.

Upper Level Printmaking: Lithography + Silkscreen  U  3
Students practice/examine individual development and artistic creation through advanced exploration of lithography & silkscreen printmaking. They begin to develop the ability to identify/pursue individualized research, processes, themes and aspirations while they interpret and respond to significant works of art, work of peers, and their own expressive goals through rigorous production/critique.
Prereq: 3056. Repeatable to a maximum of 9 cr hrs.

Moving Image Art  U  3
The creation of 2D animations through the generation, manipulation, and montage of multiple media elements such as drawings, video, and audio. Students gain hands-on experience with software sequencing tools and knowledge of the context of time-based computer imaging within a studio art practice.
Prereq: 3000 (2500) or 3101. Repeatable to a maximum of 6 cr hrs.

Life Drawing Studio II  U  3
Intermediate to advanced level course focusing on issues of the figure.
Prereq: 3104, or Art 470 (Au Qtr 2003 and after), or Art 370 (prior to Au Qtr 2003). Repeatable to a maximum of 6 cr hrs.

New Media Robotics  U  3
Students learn component level electronics and programming languages on microcontrollers to create kinetic and interactive art. Digital control of objects, projections, and sound allow for responsive environments, wearables, and multimedia experiences. Repeatable to a maximum of 6 cr hrs.

Computer Animation  U  3
Students learn and practice the concepts, aesthetics and processes of 3D computer animation. Conceptualizing, producing and integrating 3D renders and sound, with awareness of cinematography and narrative, will culminate in the completion of computer animations.
Prereq: 3000 (2500) or 3101. or permission of instructor. Repeatable to a maximum of 6 cr hrs.

Intermediate Glass Topics  U  3
Exploration of a range of technical and conceptual concerns of Art using glass as a primary material utilizing glass blowing and glass kiln working. Further exploration of a range of hot and cold glass working techniques. Repeatable to a maximum of 6 cr hrs.

Studio Practice: Art and Technology  U  3
Students gain practical experience in the development and exhibition of independent artwork. Students practice planning, presenting, and discussing their art in research as well as participating in the critique of the work of their peers. Techniques of exhibition and documentation will be practiced through writing, video, and photography.
Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs.

UG Scholarship Research / Creative Activity  U  3
Undergraduate research or creative activities in varying topics.
Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

UG Scholarship Research / Creative Activity  U  3
Undergraduate research or creative activities in varying topics.
Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 6 cr hrs.

Senior Exhibition  U  1
Course will provide seniors in the Department of Art with practical experience in the development of an exhibition of their work and exposure to professional practices for artists. This includes the development of an exhibition proposal, adequate documentation of the student's work, an artist's statement (short and long,) and presentation methods.
Prereq: Sr standing, and enrollment in BFA in Art; or permission of instructor.

Honors Thesis Research  U  1 - 3
Senior Honors Thesis.
Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 2 completions. This course is graded S/U.

Art and Professional Practices Seminar  U  3
Students explore, practice, and analyze a range of approaches to presenting their artistic practice in visual, oral and written forms. Students explore multiple options, methods and strategies related to career choices and professional development. Students develop a variety of skills to sustain their practice after graduating with their BA or BFA.
Prereq: Sr or Grad standing in Art.

Aspects of Art and Technology I  U  3
Students explore and practice the technical, aesthetic, and theoretical topics in the field of Art and Technology. Includes interactive installation, biological, surveillance/telepresence, narrative, algorithmic, and performative art.
Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

Drawing Now  U  3
Students explore drawing through individualized projects and in groups to cultivate, develop and refine ideas, research, experimentation, critical thinking and installation methods. Students explore and interpret contemporary issues in drawing, and develop a body of drawings as well as a drawing practice.
Prereq: 4004 or 4104. Repeatable to a maximum of 12 cr hrs.

Alternative Printmaking  U  3
Intensive exploration of reproduction technologies including digital, mechanical, and photographic approaches. Emphasis will be placed on the aesthetic of these methods as tools for creative production.
Prereq: 4006, 4016, 4026, 4036, 377, 378, or 379, or permission of instructor. Repeatable to a maximum of 12 cr hrs.

Advanced Sculpture I  U  3
Group studio with conceptual and material emphasis led by rotating area faculty. Course may have special topic focus.
Prereq: 3207 (481), 3307, and 3507, or 480, 481, and 482. Repeatable to a maximum of 9 cr hrs.

Film/Video III  U  3
Students explore in depth one technology or strategy related to experimental film and video art. Topics have included 16mm film, expanded cinema, and camerless filmmaking.
Prereq: 4009, or permission of instructor. Repeatable to a maximum of 9 cr hrs.

Film/Video IV  U  3
Students explore thematic issues within experimental film and video art or in the relationship of those fields to other art forms or modes of filmmaking.
Prereq: 4009, or permission of instructor. Repeatable to a maximum of 9 cr hrs.

Aspects of Art and Technology II  U  3
Students explore topical art science relationships while building connections between micro and macro, plants and humans, local and global, anthropocentric and eco-centric. Both scientific and artistic methods are used in creative projects surrounding climate stress & adaptation, biotech/bio art, constructed ecosystems, biomimicry, hyper-nature, symbiosis.
Prereq: Permission of Instructor. Repeatable to a maximum of 9 cr hrs.

Kiln Building  U  3
Advanced studies in the design, fabrication, and uses of gas and electric fueled kilns. Practice in welding and electric wire skills and the various types of firing methods.
Prereq: 2502 (340), 2602 (342), 3502 (440), and 3602, or Art 340, 342, and 440; or permission of instructor. Not open to students with credit for 640.

Photography Studio Lighting  U  3
Introduction to lighting equipment, principles, and techniques as applied to constructed/directed photography done predominantly in the studio environment. B&W wet lab with limited digital printing.
Prereq: 3005 (400) and 5275, or Art 400 and 695.10; or permission of instructor. Concur: 5105. Not open to students with credit for 695.03.

Advanced Printmaking - Relief and Intaglio  U  3
An intensive exploration of the relief and intaglio processes as a means for individual printing.
Prereq: 4006 (476) and 4026 (478), or permission of instructor. Repeatable to a maximum of 12 cr hrs or 4 completions.

Individual Studies - Ceramics  U  3
Advanced study for students in specialized programs.
Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

Individual Studies - Glass  U  3
Advanced study for students in specialized programs.
Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

Individual Studies - Photography  U  3
Advanced study for students in specialized programs.
Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

Individual Studies - Printmaking  U  3
Advanced study for students in specialized programs.
Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

Individual Studies - Sculpture  U  3
Advanced study for students in specialized programs.
Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.
5194.20  Group Studies - Ceramics  U G  3
Advanced ceramic studio work developed in consultation with and under close supervision of the instructor.
PreReq: Permission of instructor. Not open to students with credit for 691.03. Repeatable to a maximum of 9 cr hrs or 3 completions.

5194.40  Group Studies - Painting  U G  3
Group studies for students in specialized programs.
PreReq: Permission of instructor. Repeatable to a maximum of 6 cr hrs.

5194.70  Group Studies - Sculpture  U G  3
Group studies for students in specialized programs.
PreReq: Permission of instructor. Repeatable to a maximum of 6 cr hrs.

5202  Mold Making  U G  3
Advanced studies in the design, fabrication, and uses of molds and molds. Utilizing plaster casting, rubber, and other alternative mold making material to explore the process of prototyping and generating multiples.
PreReq: 2502 (340), 2602 (342), and 3502 and 3602, or 440 and 442; or permission of instructor. Not open to students with credit for 641.

5205  Large Format Photography  U G  3
Advanced photography projects with emphasis on aesthetics, mechanics, and psychology of large format photography, including zone system controls. Advanced B&W wet lab experience. PreReq: 5105 and 5115; or permission of instructor. Concur: 5215. Not open to students with credit for 524.

5215  Social/Documentary Photography  U G  3
Student will engage in an advanced production course with emphasis on the conceptual frameworks underpinning the documentary tradition in historical and contemporary photography.
PreReq: 3005 (4005).

5254  Painting Now  U G  3
Students expand approaches and definitions of painting in relation to the chosen topic for the semester. Topics range from studies in abstraction, figuration, conceptual approaches, materials and techniques, landscape/light/space, installation, etc. Independently and in groups, students challenge themselves to make paintings through rigorous experimentation, research and critical reflection.
PreReq: 3054. Repeatable to a maximum of 6 cr hrs.

5302  Material Science for Artists  U G  3
Advanced studio focused on geologic and chemical earth science as it pertains to art. Safe and efficient testing habits will explore applications such as clay and glaze formulation. Parallels will be drawn in metals, glass, paper, and paint.
PreReq: 2502 (340), 2602 (342), and 3502 and 3602, or 440 and 442; or permission of instructor. Not open to students with credit for 640 and 644.

5335  Digital Imaging: Input/Output  U G  3
Exploration of the use of digital technologies in creating and printing images with emphasis on aesthetic content and excellent craft.
PreReq: 5205 (524) and 5215 (695.04), or permission of instructor. Concur: 5225. Not open to students with credit for 695.07.

5338  Digital Input/Output for Photographers  U G  3
Learning to control means of input, manipulation while in and output from the computer and encourage the creation of new work.
PreReq: Jr standing, and enrollment in Art major. Not open to students with credit for 695.07.

5346  Advanced Printmaking - Lithography and Screenprinting  U G  3
An intensive exploration of the lithographic and screenprinting processes as means for individual expression.
PreReq: 4016 (477) and 4036 (479), or permission of instructor. Repeatable to a maximum of 12 cr hrs or 4 completions.

5402  Ceramic Art History  U G  3
Advanced ceramic course designed specifically to give the student an understanding of historical forms and technical processes.
PreReq: 2502 (340), 2602 (342), 3502 (440), or 3602 (442); or permission of instructor. Not open to students with credit for 647.

5445  Alternative Processes in Photography  U G  3
Advanced production and study of antique and alternative processes in photography such as non-silver emulsions, through the creation of a cohesive body of work.
PreReq: 5225, 5235, 695.07, or 695.08; or written permission of instructor. Concur: 4995 or 690. Not open to students with credit for 695.06.

5502  Special Projects - Ceramics  U G  3
Advanced ceramic studio work developed in consultation with and under close supervision of the instructor.
PreReq: 2502, 2602, 3502, 3602, 340, 342, 440, or 442; or permission of instructor. Not open to students with 20 qtr cr hrs for 645. Repeatable to a maximum of 9 cr hrs.

5558  Book Arts  U G  3
Exploration of the history and aesthetics of handmade artist books with emphasis on structure, sequence, and the relationship of image to text.
PreReq: Sr standing in Art, or written permission of instructor. Not open to students with credit for 695.05.

5591  Independent Studio - Art and Technology  U G  3
Advanced studio practice in art and technology.
PreReq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

5592  Independent Studio - Ceramics  U G  3
Advanced ceramic studio work developed in consultation with and under close supervision of the instructor.
PreReq: Permission of instructor. Not open to students with credit for 691.03. Repeatable to a maximum of 9 cr hrs or 3 completions.

5593  Independent Studio - Glass  U G  3
Advanced studio practice in glass art making.
PreReq: Permission of instructor. Not open to students with max credit for 691.04. Repeatable to a maximum of 12 cr hrs.

5594  Independent Studio - Painting/Drawing  U G  3
Advanced studio practice in painting. Repeatable to a maximum of 12 cr hrs.

5595  Independent Studio - Photography  U G  3
Advanced studio practice in photography.
PreReq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

5596  Independent Studio - Printmaking  U G  3
Advanced studio practice in printmaking.
PreReq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

5597  Independent Studio - Sculpture  U G  3
Advanced studio practice in sculpture.
PreReq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

5794  Group Studies - Art and Technology  U G  3
Group studies for students in specialized programs.
PreReq: Sr standing in Art, or written permission of instructor. Not open to students with credit for 896.

5797  Study Tour Foreign  U G  3
Specific content, location, semester offering, and prerequisites vary; contact department office for details.
PreReq: Permission of instructor. Repeatable to a maximum of 6 cr hrs.

5798  Study Tour Domestic  U G  3
Specific content, location, semester offering, and prerequisites vary; contact department office for details.
PreReq: Permission of instructor. Repeatable to a maximum of 6 cr hrs.

5890  Special Topics in Art  U G  3
Open topic that takes into consideration the research interests of current faculty or visiting artists.
PreReq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions.

5903  Advanced Glass Studio Practice  U G  3
Individual studies in glass art.
PreReq: Permission of instructor. Not open to students with credit for 691.04 (to repeat limit). Repeatable to a maximum of 12 cr hrs.

5995  Imagemakers' Seminar  U G  3
Students expand approaches and definitions of photography in relation to the chosen topic for the semester. Topics may range from but are not limited to studies in abstraction, performance for the camera, documentary, conceptual approaches, materials and aesthetics, and the intersections of issues of identity with contemporary photographic practices.
PreReq: 3005 (4005), or permission of instructor.

6008  Directed Studies in Studio Art  G  1 - 3
Independent advanced studio practice.
PreReq: Grad standing in Art. Repeatable to a maximum of 21 cr hrs or 12 completions.

6018  Interdisciplinary Seminar - Practices in Contemporary Art  G  3
An exploration of a broad range of critical, theoretical and professional models for developing an emergent practice of contemporary visual art.
PreReq: Grad standing in Art.

6108  Graduate Teaching Seminar  G  3
Exercises and discussions exploring techniques used in organizing, presenting, and evaluating materials taught in studio art classes with special focus on the process of developing a teaching portfolio, best teaching practices and pedagogy.
PreReq: First year Grad standing in Studio Art, or permission of instructor. Not open to students with credit for 896.

6691  Foundational Studio Practice - Art and Technology  G  1 - 3
Studio practice in Art and Technology.
PreReq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 4 completions.

6692  Foundational Studio Practice - Ceramics  G  1 - 3
Advanced studio practice in ceramics.
PreReq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 4 completions.
Foundational Studio Practice - Glass  
Advanced studio practice in glass.
Prerequisite: Permission of Instructor. Repeatable to a maximum of 12 cr hrs or 4 completions.

Foundational Studio Practice - Painting  
Advanced studio practice in painting.
Prerequisite: Permission of Instructor. Repeatable to a maximum of 12 cr hrs or 4 completions.

Foundational Studio Practice - Photography  
Advanced studio practice in photography.
Prerequisite: Permission of Instructor. Repeatable to a maximum of 12 cr hrs or 4 completions.

Foundational Studio Practice - Printmaking  
Advanced studio practice in printmaking.
Prerequisite: Permission of Instructor. Repeatable to a maximum of 12 cr hrs or 4 completions.

Foundational Studio Practice - Sculpture  
Advanced studio practice in sculpture.
Prerequisite: Permission of Instructor. Repeatable to a maximum of 12 cr hrs or 4 completions.

MFA Studio Critique: Art and Tech  
Interdisciplinary forum where students develop research skills, learn how to best articulate their artistic production, discuss materials related to their research interests, and critique the work of their peers.
Prerequisite: Permission of Instructor. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

MFA Studio Critique: Ceramics  
Interdisciplinary forum where students develop research skills, learn how to best articulate their artistic production, discuss materials related to their research interests, and critique the work of their peers.
Prerequisite: Permission of Instructor. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

MFA Studio Critique: Glass  
Interdisciplinary forum where students develop research skills, learn how to best articulate their artistic production, discuss materials related to their research interests, and critique the work of their peers.
Prerequisite: Permission of Instructor. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

MFA Studio Critique: Painting / Drawing  
Interdisciplinary forum where students develop research skills, learn how to best articulate their artistic production, discuss materials related to their research interests, and critique the work of their peers.
Prerequisite: Permission of Instructor. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

MFA Studio Critique: Photography  
Interdisciplinary forum where students develop research skills, learn how to best articulate their artistic production, discuss materials related to their research interests, and critique the work of their peers.
Prerequisite: Permission of Instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

MFA Studio Critique: Printmaking  
Interdisciplinary forum where students develop research skills, learn how to best articulate their artistic production, discuss materials related to their research interests, and critique the work of their peers.
Prerequisite: Permission of Instructor. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

MFA Studio Critique: Sculpture  
Interdisciplinary forum where students develop research skills, learn how to best articulate their artistic production, discuss materials related to their research interests, and critique the work of their peers.
Prerequisite: Permission of Instructor. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

Seminar in Studio Art  
Presentations by students, faculty, and visiting artists, with critical discussion emphasizing contemporary issues.
Prerequisite: Grad standing. Repeatable to a maximum of 9 cr hrs.

Intermediate Group Studies - Art  
Group studies for students in specialized programs.
Prerequisite: Permission of Instructor. Repeatable to a maximum of 12 cr hrs or 6 completions.

Research and Writing for Artists  
A graduate-level seminar emphasizing research and writing strategies for the required MFA thesis as well as other writing that artists may have to undertake.

Intermediate Studio Practice - Art and Technology  
Graduate level studio practice.
Prerequisite: Permission of Instructor. Repeatable to a maximum of 12 cr hrs or 4 completions.

Intermediate Studio Practice - Ceramics  
Advanced graduate studio practice.
Prerequisite: Permission of Instructor. Not open to students with 12 cr hrs for 691.03. Repeatable to a maximum of 12 cr hrs or 4 completions.

Intermediate Studio Practice - Glass  
Advanced graduate studio practice.
Prerequisite: Permission of Instructor. Repeatable to a maximum of 12 cr hrs or 4 completions.

Intermediate Studio Practice - Painting  
Advanced graduate studio practice.
Prerequisite: Permission of Instructor. Repeatable to a maximum of 12 cr hrs or 4 completions.

Intermediate Studio Practice - Photography  
Advanced graduate studio practice.
Prerequisite: Permission of Instructor. Repeatable to a maximum of 12 cr hrs or 4 completions.

Intermediate Studio Practice - Printmaking  
Advanced graduate studio practice.
Prerequisite: Permission of Instructor. Repeatable to a maximum of 12 cr hrs or 4 completions.

Intermediate Studio Practice - Sculpture  
Advanced graduate studio practice.
Prerequisite: Permission of Instructor. Repeatable to a maximum of 12 cr hrs or 4 completions.

Introduction to Arts Management  
This Introduction to Arts Management is a survey of non-profit and for profit arts management topics and issues. Students will examine members of the creative sector in various fields within the arts and cultural sector and what their impact is on the global marketplace. Using scholarly articles and various media, students will identify examples of these individuals around the world.
### Art Education

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>2250</td>
<td>Introduction to Art Education</td>
<td>U 3</td>
<td>Ideas, issues, and career possibilities in art education explored through readings, dialogue, and site visitation. Prereq: Not open to students with credit for 225.</td>
</tr>
<tr>
<td>2367.01</td>
<td>Visual Culture: Investigating Diversity &amp; Social Justice</td>
<td>U 3</td>
<td>A study of the artists, the artworks, and art worlds from diverse ethnic cultures in North America. Prereq: English 1110, and Soph standing. Not open to students with credit for 2367.01H. GE writing and comm course: level 2 and VPA and diversity soc div in the US course.</td>
</tr>
<tr>
<td>2367.01H</td>
<td>Visual Culture: Investigating Diversity &amp; Social Justice</td>
<td>U 3</td>
<td>A study of the artists, the artworks, and art worlds from diverse ethnic cultures in North America. Prereq: Honors standing, English 1110, and Soph standing. Not open to students with credit for 2367.01 (367.01) or 367.01H. GE writing and comm course: level 2 and VPA and diversity soc div in the US course.</td>
</tr>
<tr>
<td>2367.02</td>
<td>Writing Art Criticism</td>
<td>U 3</td>
<td>Focuses on critical literacy and writing about contemporary American art by a variety of artists with diverse points of view. Prereq: English 1110, and Soph standing. Not open to students with credit for 367.02. GE writing and comm course: level 2.</td>
</tr>
<tr>
<td>2367.03</td>
<td>Criticizing Television</td>
<td>U 3</td>
<td>A critical analysis of a wide variety of television programs through viewing, discussing, reading, and writing. Prereq: English 1110, and Soph standing. Not open to students with credit for Theatre 2367.03. GE writing and comm course: level 2 and diversity soc div in the US course. Cross-listed in Theatre.</td>
</tr>
<tr>
<td>2520</td>
<td>Digital Artmaking</td>
<td>U 3</td>
<td>Introductory study of digital artmaking through interpreting contemporary artists, constructing a language of art critique, and producing images using graphic design software. GE VPA course.</td>
</tr>
<tr>
<td>2520S</td>
<td>Digital Artmaking</td>
<td>U 3</td>
<td>Introductory study of digital artmaking through interpreting contemporary artists, constructing a language of arts critique, and producing images using design software. Prereq: Not open to students with credit for 252. GE VPA course.</td>
</tr>
<tr>
<td>2550</td>
<td>Introduction to Visual Culture: Seeing and Being Seen</td>
<td>U 3</td>
<td>An introduction to issues of representation, spectacle, surveillance, and voyeurism, explored through a range of visual images and sites. Prereq: Not open to students with credit for 255. GE cultures and ideas and diversity soc div in the US course.</td>
</tr>
<tr>
<td>3600</td>
<td>Exploring the Creative Industry: Arts Issues in the 21st Century</td>
<td>U 3</td>
<td>Explores the relationships within the creative sector; Artistic workforce, contemporary art trends, organizational structure and variety within the industries. Prereq: 2100. Not open to students without credit for 2100 who are also enrolled in the Arts Management program.</td>
</tr>
<tr>
<td>3681</td>
<td>Managing Non-profit Arts Organizations: Balancing Continuity &amp; Change</td>
<td>U 3</td>
<td>Introduces the purposes of non-profit organizations and their functions such as governance, program planning, marketing, and fundraising; encourages critical thinking in managerial decision making through practical assignments. Prereq: 2100. Not open to students without credit for 2100 who are also enrolled in the Arts Management program.</td>
</tr>
<tr>
<td>3690</td>
<td>Arts Entrepreneurship</td>
<td>U 3</td>
<td>This course helps students gain skills toward using creativity and artistry to solve problems and identify their personal sites of expertise as they begin to think about their future careers. Identifying opportunities in the arts can take on aspects of using artistic skill to address social problems, create economic value, and bring aesthetic solutions to social, cultural, and business problems.</td>
</tr>
<tr>
<td>3900</td>
<td>Art &amp; Curriculum Concepts for Teachers</td>
<td>U 2</td>
<td>Problems of teaching in terms of personal knowledge about art, insight into children's art work, and understanding of elementary school curriculum. Prereq: Not open to students with credit for 600. Not open to art education teacher-candidates. Admis Cond course.</td>
</tr>
<tr>
<td>4000</td>
<td>Pedagogies of Critical Multiculturalism in Teaching Visual Culture</td>
<td>U 3</td>
<td>Investigating the interrelationship of social and visual cultural issues and their impact on the curriculum and teaching practice. Prereq: Art Education Licensure students, or permission of instructor. Not open to students with credit for 601 or 605. Admis Cond course.</td>
</tr>
<tr>
<td>4100</td>
<td>Processes of Making and Responding to Art</td>
<td>U 3</td>
<td>Interpreting and writing critically about contemporary art, methods, and strategies that enhance student artmaking. Prereq: Art Education Licensure students, or permission of instructor.</td>
</tr>
</tbody>
</table>

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<tbody>
<tr>
<td>4189.02</td>
<td>Teaching Practicum: Pre K-12</td>
<td>U 12</td>
<td>Field-based teaching practicum at the prekindergarten through Grade 12 levels. Prereq: Art Education Licensure students, or permission of instructor. Not open to students with credit for 786 or 787. Admis Cond course.</td>
</tr>
<tr>
<td>4191</td>
<td>Internship</td>
<td>U 1 - 9</td>
<td>Students intern at non-public school sites to synthesize and apply what they have learned in the classroom through concentrated practice in the field. Prereq: Jr standing or above, and permission of instructor. Repeatable to a maximum of 9 or 9 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>4193</td>
<td>Individual Studies</td>
<td>U 1 - 9</td>
<td>Individual studies and project work in specified problems in the field of art education. Prereq: Written permission. Not open to students with credit for 493. This course is graded S/U.</td>
</tr>
<tr>
<td>4194</td>
<td>Group Studies</td>
<td>U 1 - 12</td>
<td>Group studies and project work in specified problems of the field of art education. Prereq: Permission of instructor. Repeatable to a maximum of 12 of 12 or 12 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>4200</td>
<td>Concepts for Planning Art Education Curricula</td>
<td>U 3</td>
<td>Planning for and management of the social and physical environment of art education. Prereq: Art Education Licensure students, or permission of instructor. Not open to students with credit for 607. Admis Cond course.</td>
</tr>
<tr>
<td>4300</td>
<td>History &amp; Philosophy of Art Education, Schools, and Society</td>
<td>U 3</td>
<td>History of the field with an emphasis on major ideas in philosophy and learning theory that affect current trends. Prereq: Art Education Licensure students, or permission of instructor. Not open to students with credit for 603. Admis Cond course.</td>
</tr>
<tr>
<td>4400</td>
<td>Art Education for Children with Special Needs</td>
<td>U 3</td>
<td>Strategies that can be used in teaching art to students with special needs and lesson planning for inclusion. Prereq: Art Education Licensure students, or permission of instructor. Not open to students with credit for 608. Admis Cond course.</td>
</tr>
<tr>
<td>4491</td>
<td>Applied Research</td>
<td>U 1 - 6</td>
<td>Studies in empirical, philosophical, curriculum, and studio problems in art education. Prereq: Permission of instructor. Repeatable to a maximum of 6 or 6 or 6 completions.</td>
</tr>
<tr>
<td>4495</td>
<td>Seminar on Topical Issues in Art Education</td>
<td>U 1 - 9</td>
<td>Seminar on topical issues in art education. Repeatable to a maximum of 9 or 9 or 9 or 9 completions.</td>
</tr>
<tr>
<td>4500</td>
<td>Clinical Experience</td>
<td>U 3</td>
<td>Contact with practicum sites and collaborative work with cooperating teachers to plan and deliver instruction. Prereq: Art Education Licensure students, or permission of instructor. Not open to students with credit for 665. Admis Cond course.</td>
</tr>
<tr>
<td>4674</td>
<td>The City As Art</td>
<td>U 3</td>
<td>This course will examine the ways that cities throughout the world integrate arts and culture into their planning, as well as whether being a cultural city can build the brand, draw in residents and attract visitors. We will investigate cultural tourism, urban cultural policy and temporary built culture such as festivals and fairs. Team-taught w/ faculty in CRP. Prereq: Jr or Sr standing. Not open to students with credit for CRP 4674. Cross-listed in City and Regional Planning.</td>
</tr>
<tr>
<td>4740</td>
<td>Docent Training</td>
<td>U 3</td>
<td>Introduces students to theory and techniques of teaching in museum galleries at the Weimer Center for the Arts. Students are trained to lead tours by studying contemporary art, tour planning strategies and interactive techniques. Prereq: Permission of instructor.</td>
</tr>
<tr>
<td>4900</td>
<td>Teaching Seminar</td>
<td>U 3</td>
<td>Concurrent to teaching practicum. Prereq: Art Education Licensure students, or permission of instructor. Admis Cond course.</td>
</tr>
<tr>
<td>4998</td>
<td>Creative Activity in Art Education: Undergraduate Scholarship</td>
<td>U 1 - 9</td>
<td>Undergraduate scholarship. Repeatable to a maximum of 9 or 9 or 2 or 2 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>4999</td>
<td>Thesis Research</td>
<td>U 1 - 9</td>
<td>A program of reading and research arranged for each student, with individual conferences and reports. Prereq: Permission of instructor. Repeatable to a maximum of 9 or 9 or 2 or 2 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>4999H</td>
<td>Honors Thesis Research</td>
<td>U 1 - 9</td>
<td>A program of reading and research arranged for each student, with individual conferences and reports and honors thesis. Prereq: Honors standing, and permission of instructor. Not open to students with credit for 783H. Repeatable to a maximum of 9 or 9 or 2 or 2 completions. This course is graded S/U.</td>
</tr>
</tbody>
</table>
5367  Reel Injuns: Identity and Representation  U G  3
Introduces broad range of issues, theories, and practices of visual culture within the gaze of American Indians and how reaction to or rejection shapes indigenous identities, as well as non-native understandings of American Indians. This course will explore action research practices, historical research methodologies, and critical readings.
Prereq: Not open to students with credit for 3367.

5670  Public Policy and the Arts  U G  3
Introduction to the purposes, rationales, interests, issues, political dynamics, and performances of agency/programs in the U.S. cultural policy system.
Prereq: Not open to students with credit for 670.

5671  Organizational Leadership in the Nonprofit Arts  U G  3
Students will be assisted in enhancing their knowledge and ability to take responsible leadership roles in non-profit arts organizations and as a major constituent of public arts agencies.
Prereq: Not open to students with credit for 671.

5672  Managing Cultural Policy Change  U G  3
Planning and executing strategic change in public arts agencies. Explores implications of shifting from a supply/demand to a value-based cultural policy paradigm.
Prereq: Not open to student with credit for 672.

5674  The Creative Sector and Creative Cities  U G  3
Examines policy experiences of U.S. and other countries pertaining to the composition, workforce, and support systems of the creative industries across non-profit, commercial, community, and embedded settings.

5675  International Cultural Relations  U G  3
Explores cultural exchange as a policy tool of international cultural engagement, national branding, and cultural diplomacy. Also considers international festivals and exhibitions, cultural trade, and international collaboration.

5682  Nonprofit Arts Institution Governance and Board Leadership  U G  3
Research-based, practical exploration of nonprofit boards critically examines governance policies and practices; specifically focusing on management, board and staff relations and issues of accountability.
Prereq: Not open to students with credit for 782.

5683  Developing Arts Careers: Positioning Passion  U G  3
Prepares students as entrepreneurs to enter nonprofit, commercial, public and/or academic careers through independent investigation, dossier development, research proposals, and grant writing.
Prereq: Not open to students with credit for 683.

5684  Arts Participation, Cultural Literacy, and Audience Development  U G  3
Building on empirical and theoretical research, this course constructs a framework to understand audience participation, understanding and reception of specific art forms.
Prereq: Not open to students with credit for 781.

5685  Arts/Cultural Organizations: Resource Management & Revenue Streams  U G  3
An analysis of current issues in resource management and revenue streams available to arts & cultural organizations, and its application to marketing and development practice.

5686  Cultural Program Design, Implementation, and Evaluation  U G  3
Research of program theory, design, and their application implementation.

5687  The Social World of the Arts  U G  3
We often think about the arts as primarily aesthetic endeavors, but the social world around the creation, production, distribution, and reception of art are key in understanding the role of art and of artists in society. In this class, students will use a sociological lens to examine how individuals and groups create, produce, distribute, and consume art.

5795  Seminar on Topical Issues in Art Education  U G  3
Seminar on topical issues in Art Education. Repeatable to a maximum of 30 cr hrs.

5797.01  Study at a Foreign Institution  U G  1 - 9
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Students will pay Ohio State fees in excess of Ohio State tuition, as well as all travel and subsistence costs.
Repeatable to a maximum of 15 cr hrs or 5 completions.

5797.02  Exploring Jamaican Arts and Culture  U G  3
Focuses on arts and cultural practices in schools, colleges, museums, and cultural institutions in Jamaica. Students explore and analyze policies, practices, content, and pedagogies of the arts in Jamaica in comparison and contrast with our understandings of such in the United States.

5797.03  Ireland: Places, Spaces & Earthworks  U G  3
This course offers students an introduction to Neolithic to historic Christian to contemporary Irish material culture. It is designed to use the resources at University College Dublin to develop knowledge through research, critical reading/analysis, and oral and visual expression in fostering an understanding of the pluralistic and historic nature of institutions, society, and Irish cultures.

5798.01  Study Tour: Domestic  U G  1 - 9
Specific content, location, semesters of offering, and prerequisites vary; contact department office for details. Repeatable for differently titled study tours only. Repeatable to a maximum of 27 cr hrs or 3 completions.

5798.02  Cultural Equity, Arts Policy & Advocacy in Puerto Rico  U G  3
This course is a special course of study for those interested in the impact & role of cultural arts in engaging issues of social justice within communities. Renowned community experts and scholars culturally grounded in the arts, public policy and advocacy will present and engage with students on best practices that have made positive and significant contributions to diverse communities.

6098  Research for Non-thesis  G  1 - 9
Research for non-thesis purposes only.
Prereq: Permission of instructor. Repeatable to a maximum of 27 cr hrs. This course is graded SU.

6099  Research for Thesis  G  1 - 9
Research for thesis purposes only.
Prereq: Permission of instructor. Repeatable to a maximum of 27 cr hrs or 9 completions. This course is graded SU.

7000.10  Concepts, Theories, and Issues in Art Education  G  2
Review of analytical reading and writing; overview of topics for art education research; graduate faculty research; national and international issues; research resources. Must be taken during the first year of graduate study.

7000.20  Concepts, Theories, and Issues in Arts/Culture Policy  G  2
Review of analytical reading and writing; overview of topics for arts policy & admin; research; graduate faculty research; national and international issues; research resources. Must be taken during the first year of graduate study.

7000.30  Issues, Frameworks and Theories for Art Educators  G  3
This course is a required introductory course in Art Education. In this online course, we will critically analyze articles that provide an overview of topics for art education research; graduate faculty research; national and international issues, and research resources.

7100  Histories and Policies of Arts Education  G  3
Students explore arts/education history while developing skills in researching cultural practices, programs and protocols, and analyzing the impact of arts programs/initiatives and social interventions on citizens and communities.
Prereq: Not open to students with credit for 701 or 704.

7200.10  Introduction to Research Methodologies and Methods  G  3
Introduction to research philosophies, methodologies and methods in arts education, policy, and administration.
Prereq: Not open to students with credit for 705.

7200.20  Overview of Research Planning for Arts Policy & Administration  G  3
Introduction to a range of research resources and methods applicable to APA students including historical, case studies, surveys & interviews. Using the literature to frame research questions, build a conceptual framework and inform research plan.
Prereq: Not open to students with credit for 705 or 809.

7200.30  Overview of Research for Arts Educators  G  3
Introduction to a broad range of qualitative educational research methodologies in the field of art education, mainly in an art teacher's classroom, a museum setting, or community arts space. Includes research terminology and methodologies, data collection methods, and discusses the power of teachers as researchers in their own classrooms. Practices collecting and analyzing data.

7300  Introduction to Teaching Arts Education at the College Level  G  2
An introduction to theories, methods and issues related to teaching arts education at the college level.
Prereq: New or recently reassigned ARTEDUC GTAs, or permission of instructor. Not open to students with credit for 707.

7604  Teaching of Studio Activities  G  3
Exploration of instructional application of various art materials for educational settings.
Prereq: Not open to students with credit for 604.

7606  Technology and Digital Texts  G  3
Theory and practice of engaging others in technologies and digital texts relative to art education practice.
Prereq: Not open to students with credit for 606.
40 Art Education

7607 Curriculum Planning and Assessment in Art Education G 3
Introduction to curriculum development including artmaking practices and assessment strategies.
Prereq: Not open to students with credit for 604, 607 or 731.

7681 Arts/Cultural Institutions, Organizational Theories & Management Practice G 3
Building on organizational theories, this course examines the purpose and function of art and cultural institutions and current management practices in the creative sector.
Prereq: Not open to students with credit for 681.

7701 Contemporary Theory and Art Education G 3
Investigation of contemporary theory from an interdisciplinary perspective and the implications for art education.

7707 Action Research Theory and Practice G 3
Exploration of action research theories and practices in school, community, and organizational settings.

7708 Universal Design for Learning: Disability Studies and Art Education G 3
This course explores Universal Design for Learning in Art Education for the purposes of enhancing the learning experiences of students with disabilities and all learners and makes practical applications to classroom experiences.

7709 Arts-Based Education Research Approaches G 3
Survey a range of arts-based research methods in the multiple arts and education fields. Explore/develop and analyze innovations in data gathering, analyses, performance/presentation and publication.

7710 Experimental Writing in Qualitative Research G 3
Offers readings, discussion, and practice in writing new texts that expand the conception of qualitative research. Students engage in workshops with peers and established arts-informed writers. Completion of one qualitative research course is recommended but not required for enrollment.

7711 Designing and Writing Research Proposals G 3
This course is designed to assist in understanding the nature and purpose of the dissertation proposal as well as the strategies necessary to conceive of it and construct it.

7725 Re-imagining Research Writing Through Creative Inquiry G 3
This trans-disciplinary writing seminar encourages graduate researchers to develop a philosophy and practice of writing that reflects a full range of scholarly expression. Beginning with a review of expository writing, students engage with the theory and practice of shaping new ways to conceive of and write scholarly research in their respective disciplines.

7735 Art Museum History, Theory, and Practices G 3
Critical examination of the historic and theoretical foundations of art and other museums as an institution, drawing on multiple disciplinary perspectives. Counts toward Museum Education specialization.

7736 Teaching and Learning in Art Museums G 3
A theoretical and practical study of teaching and learning in and through museums. Counts toward Museum Education specialization.

7740 Docent Training G 3
Introduces students to theory and techniques of teaching in museum galleries at the Wexner Center for the Arts. Students are trained to lead tours by studying contemporary art, tour planning strategies and interactive techniques.
Prereq: Permission of instructor.

7748 Art Museum Education & Administration Practicum G 3
An examination of the role of education in art museums through an in-depth experience in a museum setting. Counts toward Museum Education specialization.

7756 Semiotics and Visual Culture G 3
Traditional and contemporary theories of semiotics applicable to visual culture. Understanding how cultural meanings are created, maintained and habits are shifted.

7766 Exploring Practices of Meaning Making and Artmaking G 3
Exploring meaning making practices and artmaking through materiality, play, and affect. Theoretical perspectives derive from Deleuzian philosophy, semiotics, and poststructuralist theory.

7767 Critical Analysis of Multicultural Art Education G 3
Investigation and analysis of multicultural theories, issues, and practices for art education.
Prereq: Not open to students with credit for 767.

7775 Social and Cultural Theories in Art and Art Education G 3
Critical investigation of theoretical, artistic, and pedagogical concepts related to diversity.

7777 Research to Advocacy G 3
This course engages practicing arts educators in developing effective advocacy strategies, arguments and approaches grounded in reliable research and assessment measures. Educators clearly communicating these measures can effectively leverage them in persuading administrators, parents and policy makers to energetically support and advance the critical work of arts education.

7795 Seminar on Topical Issues in Art Education G 3
Seminar on Topical Issues in Art Education. Repeatable to a maximum of 30 cr hrs.

7890 Colloquium G 1½
An interdisciplinary forum of students and faculty for discussing themes selected by graduate students in the Department of Art Education. Repeatable to a maximum of 3 cr hrs or 2 completions. This course is graded S/U.

8191.01 Internship in Arts Management G 1 - 9
Supervised professional experience in performing arts, visual arts, literary arts, or museum/historical organization.
Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 9 completions. This course is graded S/U.

8191.02 Art and Cultural Policy Internship G 1 - 9
Supervised professional experience in government arts or a cultural agency at any level - local, state, regional, national, or international - or within a trade or professional association engaged in arts advocacy.
Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 9 completions. This course is graded S/U.

8191.03 Internship: Engaging with Art Museums & Communities G 1 - 9
Supervised professional experience within a museum or public gallery that provides educational services.
Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 9 completions. This course is graded S/U.

8191.04 Community Arts Internship G 1 - 9
Supervised professional experience in a community setting that provides programs addressing arts education.
Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 9 completions. This course is graded S/U.

8193 Individual Studies G 1 - 5
Individual Studies.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 3 completions. This course is graded S/U.

8194 Group Studies G 3
Group studies for students in specialized programs.
Repeatable to a maximum of 9 cr hrs or 3 completions.

8798.02 Study Tour Foreign G 1 - 9
Specific content, location, semester(s) of offering, and prerequisites vary; contact department office for details. Foreign. Repeatable for different study tours only. Repeatable to a maximum of 12 cr hrs.

8911 Research Problems in Art Education G 1 - 9
Research problems in Art Education.
Prereq: Permission of instructor. Repeatable to a maximum of 27 cr hrs or 3 completions.

8998 Research for Candidacy Examination G 1 - 9
Research for candidacy examination.
Prereq: Permission of instructor. Repeatable to a maximum of 27 cr hrs or 9 completions. This course is graded S/U.

8999 Research for Dissertation G 1 - 9
Research for dissertation purposes only.
Prereq: Permission of instructor. Repeatable to a maximum of 27 cr hrs or 9 completions. This course is graded S/U.

Arts and Sciences

1100.01 Arts and Sciences Survey: General U 1
Academic requirements; University procedures, grading system, resources; student rights and responsibilities; overview of Arts and Sciences academic areas of study and services.
Prereq: Permission of department or instructor. Not open to students with credit for any College Survey 100.xx course. This course is graded S/U.

1100.01H Arts and Sciences Survey: General (Honors) U 1
Academic requirements; University procedures, grading system, resources; student rights and responsibilities; overview of Arts and Sciences academic areas of study and services.
Prereq: Honors standing, or permission of instructor or department. Not open to students with credit for any College Survey 100.XX course. This course is graded S/U.

1100.02 Arts and Sciences Survey: Special U 1
Academic requirements; University procedures, grading system, resources; student rights and responsibilities; overview of Arts and Sciences academic areas of study and services.
Prereq: Permission of department or instructor. Not open to students with credit for any College Survey 100.xx course. This course is graded S/U.

1100.03 Arts and Sciences Survey: PASS U 1
Academic requirements; University procedures, grading system, resources; student rights and responsibilities; overview of Arts and Sciences academic areas of study and services.
Prereq: Permission of department or instructor. Not open to students with credit for any College Survey 100.xx course. This course is graded S/U.
Academic requirements; University procedures, grading system, resources; student rights and responsibilities; overview of Arts and Sciences academic areas of study and services. Prereq: Permission of department or instructor. Not open to students with credit for any College Survey 100.xx course. This course is graded S/U.

1100.05 Arts and Sciences Survey: Art U 1
Academic requirements; University procedures, grading system, resources; student rights and responsibilities; overview of Arts and Sciences academic areas of study and services. Prereq: Permission of department or instructor. Not open to students with credit for any College Survey 100.xx course. This course is graded S/U.

1100.06 Arts and Sciences Survey: Arts and Humanities U 1
Academic requirements; University procedures, grading system, resources; student rights and responsibilities; overview of Arts and Sciences academic areas of study and services. Prereq: Permission of department or instructor. Not open to students with credit for any College Survey 100.xx course. This course is graded S/U.

1100.07 Arts and Sciences Survey: Biological Sciences U 1
Academic requirements; University procedures, grading system, resources; student rights and responsibilities; overview of Arts and Sciences academic areas of study and services. Prereq: Permission of department or instructor. Not open to students with credit for any College Survey 100.xx course. This course is graded S/U.

1100.09 Arts and Sciences Survey: Design U 1
Academic requirements; University procedures, grading system, resources; student rights and responsibilities; overview of Arts and Sciences academic areas of study and services. Prereq: Permission of department or instructor. Not open to students with credit for any College Survey 100.xx course. This course is graded S/U.

1100.10 Arts and Sciences Survey: Mathematical and Physical Sciences U 1
Academic requirements; University procedures, grading system, resources; student rights and responsibilities; overview of Arts and Sciences academic areas of study and services. Prereq: Permission of department or instructor. Not open to students with credit for any College Survey 100.xx course. This course is graded S/U.

1100.11 Arts and Sciences Survey: Music U 1
Academic requirements; University procedures, grading system, resources; student rights and responsibilities; overview of Arts and Sciences academic areas of study and services. Prereq: Permission of department or instructor. Not open to students with credit for any College Survey 100.xx course. This course is graded S/U.

1100.14 Arts and Sciences Survey: Social and Behavioral Sciences BA U 1
Academic requirements; University procedures, grading system, resources; student rights and responsibilities; overview of Arts and Sciences academic areas of study and services. Prereq: Permission of department or instructor. Not open to students with credit for any College Survey 100.xx course. This course is graded S/U.

1100.15 Arts and Sciences Survey: Social and Behavioral Sciences BA/BS U 1
Academic requirements; University procedures, grading system, resources; student rights and responsibilities; overview of Arts and Sciences academic areas of study and services. Prereq: Permission of department or instructor. Not open to students with credit for any College Survey 100.xx course. This course is graded S/U.

1101 First or Second Year Seminar U 1
Seminars on varying topics taught by University faculty. Prereq: Fresh or Soph standing, or permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

1102 Regional Honors Seminar U 1
Seminars on varying topics taught by University faculty on regional campuses and intended to provide a common experience for Honors students. Prereq: Honors standing, or permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

Arts and Sciences Survey: Transfer U 1
Introduction to major topics and themes in International Affairs; introduction to expectations and guidelines of the IA Scholars Program; overview of university resources and services related to the IA Scholars theme; overview of professional development and potential career paths; connections to and awareness of campus, city, and national resources related to IA Scholars theme. Prereq: Enrollment in International Affairs Scholars Program.

1120.04 International Affairs Scholars Seminar U 1
Prereq: Enrollment in International Affairs Scholars Program.

1120.05 Politics, Society, & Law Scholars Seminar U 1
This seminar course is designed to explore interdisciplinary opportunities, campus and community resources, personal and professional development, and themes specific to the Politics, Society, and Law Scholars Program. Thematic topics will include but are not limited to those related to China's judicial system, free speech, communication, and conflict. Prereq: Enrollment in Politics, Society, and Law Scholars Program.

1120.06 STEM Exploration & Engagement Scholars Seminar U 1
This seminar course is designed for first year Scholars students to explore personal interests, interdisciplinary opportunities, campus and local community resources, and specific thematic activities related to STEM Exploration and Engagement Scholars Program.

1137.01 First-Year Seminar U 1
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs.

1137.02 First-Year Seminar U 1
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs.

1137.03 First-Year Seminar U 1
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs.

1137.04 First-Year Seminar U 1
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs.

1137.05 First-Year Seminar U 1
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs.

1137.06 First-Year Seminar U 1
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs.

1137.07 First-Year Seminar U 1
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs.

1137.08 First-Year Seminar U 1
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs.

1137.09 First-Year Seminar U 1
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs.

1137.10 First-Year Seminar U 1
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs.

1137.11 First-Year Seminar U 1
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs.
1137.12 **First-Year Seminar**  
U 1  
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs.

1137.13 **First-Year Seminar**  
U 1  
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs.

1137.14 **First-Year Seminar**  
U 1  
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs.

1137.15 **First-Year Seminar**  
U 1  
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs.

1137.16 **First-Year Seminar**  
U 1  
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs.

1137.17 **First-Year Seminar**  
U 1  
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs.

1137.18 **First-Year Seminar**  
U 1  
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs.

1137.19 **First-Year Seminar**  
U 1  
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs.

1137.20 **First-Year Seminar**  
U 1  
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. This seminar has a service-learning component. Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs.

1137.21 **First-Year Seminar**  
U 1  
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs.

1137.22 **First-Year Seminar**  
U 1  
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs.

1137.23 **First-Year Seminar**  
U 1  
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs.

1137.24 **First-Year Seminar**  
U 1  
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs.

1137.25 **First-Year Seminar**  
U 1  
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs.

1137.26 **First-Year Seminar**  
U 1  
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs.

1137.27 **First-Year Seminar**  
U 1  
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs.

1137.28 **First-Year Seminar**  
U 1  
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs.

1137.29 **First-Year Seminar**  
U 1  
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs.

1137.30 **First-Year Seminar**  
U 1  
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs.

1137.31 **First-Year Seminar**  
U 1  
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs.

1137.32 **First-Year Seminar**  
U 1  
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs.

1137.33 **First-Year Seminar**  
U 1  
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs.

1137.34 **First-Year Seminar**  
U 1  
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs.

1137.35 **First-Year Seminar**  
U 1  
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs.

1137.36 **First-Year Seminar**  
U 1  
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs.

1137.37 **First-Year Seminar**  
U 1  
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs.

1137.38 **First-Year Seminar**  
U 1  
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs.

1137.39 **First-Year Seminar**  
U 1  
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs.
1138.01 First-Year Seminar  U  1
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit.
Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

1138.02 First-Year Seminar  U  1
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit.
Prereq: Fresh standing or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

1138.03 First-Year Seminar  U  1
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit.
Prereq: Fresh standing or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

1138.04 First-Year Seminar  U  1
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit.
Prereq: Fresh standing or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

1138.05 First-Year Seminar  U  1
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit.
Prereq: Fresh standing or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

1138.06 First-Year Seminar  U  1
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit.
Prereq: Fresh standing or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

1138.07 First-Year Seminar  U  1
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit.
Prereq: Fresh standing or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

1138.08 First-Year Seminar  U  1
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit.
Prereq: Fresh standing or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

1138.09 First-Year Seminar  U  1
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit.
Prereq: Fresh standing or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

1138.10 First-Year Seminar  U  1
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit.
Prereq: Fresh standing or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

1138.11 First-Year Seminar  U  1
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit.
Prereq: Fresh standing or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

1138.12 First-Year Seminar  U  1
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit.
Prereq: Fresh standing or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

1138.13 First-Year Seminar  U  1
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit.
Prereq: Fresh standing or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

1138.14 First-Year Seminar  U  1
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit.
Prereq: Fresh standing or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

1138.15 First-Year Seminar  U  1
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit.
Prereq: Fresh standing or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

1138.16 First-Year Seminar  U  1
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit.
Prereq: Fresh standing or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

1138.17 First-Year Seminar  U  1
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit.
Prereq: Fresh standing or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

1138.18 First-Year Seminar  U  1
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit.
Prereq: Fresh standing or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

1138.19 First-Year Seminar  U  1
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit.
Prereq: Fresh standing or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

1138.20 First-Year Seminar  U  1
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit.
Prereq: Fresh standing or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

1138.21 First-Year Seminar  U  1
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit.
Prereq: Fresh standing or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

1138.22 First-Year Seminar  U  1
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit.
Prereq: Fresh standing or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

1138.23 First-Year Seminar  U  1
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit.
Prereq: Fresh standing or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

1138.24 First-Year Seminar  U  1
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit.
Prereq: Fresh standing or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

1138.25 First-Year Seminar  U  1
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit.
Prereq: Fresh standing or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

1138.26 First-Year Seminar  U  1
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit.
Prereq: Fresh standing or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

1138.27 First-Year Seminar  U  1
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit.
Prereq: Fresh standing or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.
44 Arts and Sciences

1138.28 First-Year Seminar U 1
Affords first-year students the opportunity for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit.
Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 or hrs. This course is graded S/U.

1138.29 First-Year Seminar U 1
Affords first-year students the opportunity for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit.
Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 or hrs. This course is graded S/U.

1138.30 First-Year Seminar U 1
Affords first-year students the opportunity for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit.
Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 or hrs. This course is graded S/U.

1138.31 First-Year Seminar U 1
Affords first-year students the opportunity for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit.
Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 or hrs. This course is graded S/U.

1138.32 First-Year Seminar U 1
Affords first-year students the opportunity for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit.
Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 or hrs. This course is graded S/U.

1138.33 First-Year Seminar U 1
Affords first-year students the opportunity for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit.
Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 or hrs. This course is graded S/U.

1138.34 First-Year Seminar U 1
Affords first-year students the opportunity for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit.
Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 or hrs. This course is graded S/U.

1138.35 First-Year Seminar U 1
Affords first-year students the opportunity for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit.
Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 or hrs. This course is graded S/U.

1138.36 First-Year Seminar U 1
Affords first-year students the opportunity for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit.
Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 or hrs. This course is graded S/U.

1138.37 First-Year Seminar U 1
Affords first-year students the opportunity for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit.
Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 or hrs. This course is graded S/U.

1138.38 First-Year Seminar U 1
Affords first-year students the opportunity for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit.
Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 or hrs. This course is graded S/U.

1138.39 First-Year Seminar U 1
Affords first-year students the opportunity for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit.
Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 or hrs. This course is graded S/U.

1138.40S First-Year Seminar U 1
Affords first-year students the opportunity for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit.
Prereq: Fresh standing, or permission of instructor. Only one First-Year Seminar per semester allowed. Repeatable to a maximum of 2 or hrs. This course is graded S/U.

1191 Non-Credit Internship U 0
Internship conducted under the supervision of the employer; enrollment and evaluation coordinated by ASC Career Services. Student is responsible for finding the internship prior to the start of the term. Requires permission to enroll.
Prereq: GPA 2.0 or above. Repeatable to a maximum of 6 completions. This course is graded S/U.

1900 Career Readiness for Arts & Sciences Majors U 1
Broadens understanding of career fields and learn about how to increase readiness for obtaining work related to career goals. Also covers writing resumes, obtaining internships, and effective strategies for finding employment after graduation.
Prereq: Not open to students with credit for 400.01 or ESCE 2271 (EduPAES 270.01). This course is graded S/U.

2120 Information Search, Evaluation and Use U 2
This seven-week course will help you develop skills and habits that will allow you to responsibly find, consume, create, and share information online. Among these habits is the creation of a search strategy, critical evaluation of online sources, and the use of copyrighted materials. We hope you leave this course as an intentional, reflective, and critical consumer of information.

2121 Academic Online Research U 2
The purpose of this course is to help you develop skills and habits that will help you to be successful on research assignments in college, as well as situations that require you to use information in your professional, personal, and civic lives. In other words, we hope you leave this course as an intentional, reflective, and critical consumer of information.

2193 Individual Studies U 1 - 3
Individual Studies for undergraduate students.
Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs or 2 completions. This course is graded S/U.

2194 Interdisciplinary Group Studies U 1 - 3
Study of special or interdisciplinary topics at an introductory level. 2194H (honors) may be available.
Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions.

2400 Conversations on Morality, Politics, and Society U 3
Students will explore the topic of the COMPAS program from a variety of disciplinary perspectives and be required to attend to or view recordings of the various COMPAS events.
GE culture and ideas course.

2400E Conversations on Morality, Politics, and Society U 3
Students explore the COMPAS program topic from a variety of perspectives and attend or view recordings of various COMPAS events. They also complete additional readings, have 5-6 hours of meetings with the instructor, and write a term paper.
Prereq: Honors standing, or permission of instructor. GE cultures and ideas course.

2797.02 Contemporary India U 3
This interdisciplinary course introduces students to contemporary India, with a focus on the foundational diversities of Indian society, culture, religion, politics, and economy. Students will also critically reflect on how their study abroad has impacted their understanding of India and our contemporary world.
GE education abroad course.

2798.02 Study Tour: Foreign U 1 - 10
Specific content, location, semesters of offering, and prerequisites vary; contact department office for details. Repeatable for differently titled study tours only. Non GE.
Prereq: Permission of instructor. Repeatable to a maximum of 10 or hrs or 5 completions.

2798.03 Study Tour: Introduction to the History, Politics, and Culture of Great Britain U 3
This interdisciplinary study tour introduces students to the History, Politics, and Culture of Great Britain. An examination of certain core British institutions, traditions, and problems mainly through the lens of imaginative literature - especially poetry and short stories - but will also incorporate other kinds of sources.
GE education abroad course.

2798.04 Introduction to Quebec U 3
This interdisciplinary course introduces students to the history and culture of Quebec with time spent in Montreal, Ottawa, and Quebec City. The course examines core institutions and traditions through lecture, discussion and experiential learning of the region's history, politics, literature, geography and science.
Prereq: Permission of instructor. GE education abroad course.

2798.05 Cuba: Race, Revolution, and Culture U 3
This course analyzes the role of race and culture in the formation of contemporary Cuban politics and national identity, with emphasis on Cuba's African roots and attention to the role of the arts as a means of resistance to social injustice. Instruction is at the Newark campus (3 weeks) and in Cuba (10 days in Havana and Varadero).
Prereq: Permission of instructor. GE education abroad course.

2798.06 The Past, Present, and Future of Liverpool U 3
This interdisciplinary study tour introduces students to the history, literature, and culture of Liverpool, England. The course examines core institutions, traditions, and issues through lecture, discussion, and experiential learning of government, literature, history, culture, and other relevant materials.
Prereq: Permission of instructor. GE education abroad course.
Online Research and the Science Literature

Internship & Career Exploration

Internship

U

G

Interdisciplinary Group Studies

Undergraduate Research: Thesis

U

G

Group Studies

The Ohio State University: Its History and Its World

For-Credit Internship

Study at a Foreign Institution

Asian American Studies Workshop

Course is graded S/U.

Prereq: GPA 2.50 or above, and Soph standing or above. Repeatable to a maximum of 12 cr hrs or 4 completions. This course is graded S/U.

Interdisciplinary Group Studies

Study of special or interdisciplinary topics at the upper-division level. 4194H (Honors) may be available.

Prereq: Jr or Sr standing, or permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions.

4194H

Interdisciplinary Group Studies

Study of special or interdisciplinary topics at the upper division level.

Prereq: Honors standing, and Jr or Sr standing; or permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

4870

The Ohio State University: Its History and Its World

An introduction to the past and present of OSU, its importance, its disciplines, the interrelations of the academic and other components of the institution, and the contributions over the years of OSU to the wider world.

Prereq: Not open to students with credit for History 4870. GE cultures and ideas course. Cross-listed in History.

4998

Undergraduate Research in the Arts and Sciences

Undergraduate research or creative activities in variable topics.

Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 5 completions. This course is graded S/U.

5194

Group Studies

Study of special or interdisciplinary studies. 5194H (honors) may be available.

Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

5194H

Group Studies

Study of special or interdisciplinary studies.

Prereq: Honors standing, or permission of department or instructor. Repeatable to a maximum of 9 cr hrs or 3 completions.

5797

Study at a Foreign Institution

An opportunity for students to study at a foreign institution and receive OSU credit for work completed there. Students will pay OSU fees and any fees in excess of OSU tuition, as well as all travel and subsistence costs.

Prereq: Permission of department chairperson. Repeatable to a maximum of 54 cr hrs or 3 completions.

6110

Health Literacy

Examine and analyze issues of low health literacy, including populations at risk, research, measurement tools, writing in plain language; health communication techniques; and organizational approaches.

Prereq: Grad standing. Not open to students with credit for 709, Nursing 6110 (710), Pfr 7090 (Pharmacy 709), AlliMed 7010 (710), or MedColl 7710 (710). Cross-listed in Pfr 7090, Nursing 6110, AlliMed 7010, and MedColl 7710.

6750

Multidisciplinary Seminar for Artists

A multidisciplinary seminar for graduate students in the arts throughout the university, in which we will look at the process of art-making through the lens of each medium as well as the wider lens we can provide as a group.

Prereq: Not open to students with credit for 750.

8194

Group Studies

Study of special or interdisciplinary topics at the graduate level. Repeatable to a maximum of 9 cr hrs or 3 completions.

4998

Undergraduate Research

Undergraduate research in variable topics related to Asian American Studies. Student-initiated projects.

Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

4998H

Undergraduate Honors Research

Undergraduate honors research in variable topics related to Asian American Studies. Student-initiated projects.

Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

4999

Undergraduate Research: Thesis

A program of reading, research, writing, and/or creative work arranged for each student, with individual conferences, progress reports, and a thesis.

Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 4 completions. This course is graded S/U.

4999H

Honors Thesis Research

A program of reading, research, writing, and/or creative work arranged for each student, with individual conferences, progress reports, and honors thesis.

Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 12 cr hrs or 4 completions. This course is graded S/U.

5191

Internship

UG

G

1 - 3

Workplace experience requiring writing and/or research.

Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

5193

Individual Studies

UG

G

1 - 3

Individual directed study for work not typically offered in courses.

Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

5194

Group Studies

Study of special or interdisciplinary topics at the upper division level.

Prereq: Honors standing, and Jr or Sr standing; or permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

5700

Asian American Studies Workshop

UG

G

1 - 3

Structured participation in seminar or event organized for that semester. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

Astronomy

1101

From Planets to the Cosmos (With Lab)

UG

4

Overview of the Copernican revolution, the discovery of the nature of our solar system, light, gravity, and planets around other stars; the nature and evolution of stars and origin of the chemical elements; the history of galaxies and the expanding universe. Weekly laboratory.

Not recommended for students who plan to major in astronomy or physics.

Prereq: Math 1505 (155) or 102, or an ACT math subscore of 22 or higher that is less than two years old, or Math Placement R or higher; or permission of instructor. Not open to students with credit for 1140, 1144, 1161H (H161), 1162H (H162), 2161H, 2162H, 2291 (291), or 2292 (292). GE nat sci phys course.

1102

From Planets to the Cosmos (No Lab)

UG

3

Overview of the Copernican revolution, the discovery of the nature of our solar system, light, gravity, and planets around other stars; the nature and evolution of stars and origin of the chemical elements; the history of galaxies and the expanding universe. Not recommended for students who plan to major in astronomy or physics.

Prereq: Math 1505 (155) or 102, or an ACT math subscore of 22 or higher that is less than two years old, or Math Placement R or higher; or permission of instructor. Not open to students with credit for 1101, 1140, 1144, 1161H (H161), 1162H (H162), 2161H, 2162H, 2291 (291), or 2292 (292). GE nat sci phys course.

1140

Planets and The Solar System

UG

3

Physical nature of the sun and its family of planets, satellites, comets and minor bodies; gravitation, light, and telescopes. Not recommended for students who plan to continue in astronomy or physics.

Prereq: ACT Math Subscore of 22 or higher, or Math Placement Level R or better, or Math 1050 (1075) or 102, or permission of instructor. Not open to students with credit for 1161 (161), 1161H (161H), 2291 (291), or 171. This course is available for EM credit. GE nat sci phys course. NS Admis Cond course.

1141

Life in the Universe

UG

3

Potential for life elsewhere in the universe, based on discovery of extra-solar planets and nature of life on Earth; search strategies for such life.

Prereq: Not open to students with credit for 141. This course is available for EM credit. GE nat sci phys course. NS Admis Cond course.

1142

Black Holes

UG

3

The nature, formation, and discovery of black holes in the universe.

Prereq: ACT Math Subscore of 22 or higher, or Math Placement Level R or better, or Math 1050 (1075), or permission of instructor. Not open to students with credit for 142. This course is available for EM credit. GE nat sci phys course. NS Admis Cond course.

1143

Cosmology: History of the Universe

UG

3

Description of the history of the universe from Big Bang to present; how observations led to discovery of this history.

Prereq: Not open to students with credit for 2292 (292) or 1162 (162) or 143 or 172. This course is available for EM credit. GE nat sci phys course. NS Admis Cond course.
### Astronomy

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Grade</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>1144</td>
<td>Stars, Galaxies, and the Universe</td>
<td>U</td>
<td>3</td>
<td>Structure, motions, and evolution of stars, interstellar material, galaxies, and the universe as a whole. Not recommended for students who plan to continue in astronomy or physics. Pre-req: ACT Math Subscore of 22 or higher, or Math Placement Level R or better, or Math 1050 (075), 102, or permission of instructor. Not open to students with credit for 2292 (292), 1162 (162), 1162H (162H), or 172. This course is available for EM credit. GE nat sci phy. course. NS Admin Cond course.</td>
</tr>
<tr>
<td>1221</td>
<td>Astronomy Data Analysis</td>
<td>U</td>
<td>3</td>
<td>Overview of data analysis in astronomy. The course will combine select topics in modern astronomy with contemporary data analysis methods implemented in the Python programming language, illustrating how astronomical data lead to scientific conclusions. It is intended for students with interest in astronomy and analysis of large data sets; prior astronomy experience not required. Pre-req or co-prereq: Math 1141, 1151, or 1161. GE nat sci phy. course.</td>
</tr>
<tr>
<td>2193</td>
<td>Individual Studies</td>
<td>U</td>
<td>1 - 10</td>
<td>Independent library or laboratory work on a special problem or topic in observational or theoretical astronomy. Pre-req: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 3 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>2194</td>
<td>Group Studies</td>
<td>U</td>
<td>1 - 10</td>
<td>Special studies not otherwise offered. Pre-req: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 2 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>2291</td>
<td>Basic Astrophysics and Planetary Astronomy</td>
<td>U</td>
<td>3</td>
<td>Motions and physical nature of objects in the solar system; electromagnetic radiation, telescopes, and astronomical detectors. Pre-req: Physics 1251 (133), or permission of instructor. Not open to students with credit for 291. This course is available for EM credit. GE nat sci phy. course.</td>
</tr>
<tr>
<td>2292</td>
<td>Stellar, Galactic, and Extragalactic Astronomy and Astrophysics</td>
<td>U</td>
<td>3</td>
<td>Observational and physical properties of the sun and stars; stellar structure and evolution; interstellar medium; galaxies and cosmology. Pre-req: Physics 1251 (133), or permission of instructor. Not open to students with credit for 292. This course is available for EM credit. GE nat sci phy. course.</td>
</tr>
<tr>
<td>2895</td>
<td>Topics in Astrophysics</td>
<td>U</td>
<td>1</td>
<td>Prospective astronomy majors will meet weekly with different astronomy faculty to learn about current research topics, facilities, and opportunities available in the undergraduate astronomy program. Pre-req: Not open to students with credit for two sections of 295. This course is graded S/U.</td>
</tr>
<tr>
<td>3350</td>
<td>Methods of Astronomical Observation and Data Analysis</td>
<td>U</td>
<td>3</td>
<td>Astronomical observational techniques and quantitative analysis of astronomical data; practical experience with modern astronomical instrumentation and computer-based reduction, analysis, and interpretation of astronomical data. Pre-req: 1162 (162), 1162H (162H), or 2292 (292), and Math 1152 (153), and Physics 1251 (133). Not open to students with credit for 350. GE data any course.</td>
</tr>
<tr>
<td>4193</td>
<td>Individual Studies</td>
<td>U</td>
<td>1 - 10</td>
<td>Independent library or laboratory work on a special problem or topic in observational or theoretical astronomy. Pre-req: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 3 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>4194</td>
<td>Group Studies</td>
<td>U</td>
<td>1 - 10</td>
<td>Special studies not otherwise offered. Pre-req: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 2 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>4998</td>
<td>Non-Thesis Research</td>
<td>U</td>
<td>1 - 10</td>
<td>Directed undergraduate research (non-thesis). Pre-req: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 4 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>4998H</td>
<td>Honors Non-Thesis Research</td>
<td>U</td>
<td>1 - 10</td>
<td>Directed undergraduate research (non-thesis). Pre-req: Honors standing; and permission of instructor. Repeatable to a maximum of 30 cr hrs or 4 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>4999</td>
<td>Thesis Research</td>
<td>U</td>
<td>1 - 10</td>
<td>Directed undergraduate research for thesis. Pre-req: Permission of department and instructor. Repeatable to a maximum of 30 cr hrs or 10 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>4999H</td>
<td>Honors Thesis Research</td>
<td>U</td>
<td>1 - 10</td>
<td>Directed undergraduate research (thesis). Pre-req: Permission of department and instructor. Repeatable to a maximum of 30 cr hrs or 10 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>5681</td>
<td>Principles of Stellar Evolution and Nucleosynthesis</td>
<td>U</td>
<td>3</td>
<td>Physics of stellar structure, evolution, and nucleosynthesis. Pre-req: Math 2174, 2255 (255), or 2415 (415); and Physics 5500 (631); or permission of instructor. Not open to students with credit for 681 or Physics 681.</td>
</tr>
<tr>
<td>5682</td>
<td>Introduction to Cosmology</td>
<td>U</td>
<td>3</td>
<td>Structure and evolution of the Universe. Pre-req: Math 2174 or 2255 (255) or 2415 (415); and Physics 2301 (263); or permission of instructor. Not open to students with credit for 692 or Physics 692.</td>
</tr>
<tr>
<td>5683</td>
<td>Observed Properties of Astronomical Systems</td>
<td>U</td>
<td>5</td>
<td>Observed properties of planets (including extrasolar planets), the solar system, stars, and both active and quiescent galaxies. Pre-req: Permission of instructor. Not open to students with credit for 830.</td>
</tr>
<tr>
<td>6891</td>
<td>Astronomy Seminar I</td>
<td>G</td>
<td>2</td>
<td>First and second year graduate students will participate in weekly departmental colloquia and journal club. Pre-req: Grad standing in Astron. Not open to students with 4 cr hrs or 801. Repeatable to a maximum of 4 cr hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>6892</td>
<td>Astronomy Seminar II</td>
<td>G</td>
<td>2</td>
<td>First and second year graduate students will participate in weekly departmental colloquia and journal club. Pre-req: Grad standing in Astron. Not open to students with 8 cr hrs in Astron 802 and/or 803. Students with no more than 4 cr hrs in Astron 802 and/or Astron 803 may take this course only once. This course is graded S/U.</td>
</tr>
<tr>
<td>7810</td>
<td>Order of Magnitude Astrophysics</td>
<td>G</td>
<td>2</td>
<td>Methods for solution of a wide range of astrophysical problems, building on basic physical principles. Pre-req: Grad standing in Astron, or permission of instructor. Not open to students with credit for 822 and/or 803. Students with no more than 4 cr hrs in Astron 810. Students with no more than 4 cr hrs in 810 may enroll only once. Repeatable to a maximum of 4 cr hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>8823</td>
<td>Atomic and Radiative Processes in Astrophysics</td>
<td>G</td>
<td>3</td>
<td>Continuum and discrete radiative processes relevant to astrophysics. Pre-req: Grad standing in Astron; or permission of instructor. Not open to students with credit for 822 and 823.</td>
</tr>
<tr>
<td>8824</td>
<td>Numerical and Statistical Methods in Astrophysics</td>
<td>G</td>
<td>2</td>
<td>Practical applications of numerical and statistical methods used in modern astrophysics. Pre-req: Grad standing in Astron; or permission of instructor.</td>
</tr>
<tr>
<td>8831</td>
<td>Stellar Structure and Evolution</td>
<td>G</td>
<td>3</td>
<td>Theoretical aspects of the structure and evolution of single stars. Pre-req: Grad standing in Astron; or permission of instructor. Not open to students with credit for 831.</td>
</tr>
<tr>
<td>8870</td>
<td>Dynamics</td>
<td>G</td>
<td>3</td>
<td>Planetary dynamics, stellar dynamics, and astrophysical gas dynamics. Pre-req: Grad standing in Astron; or permission of instructor. Not open to students with credit for 825 and 870.</td>
</tr>
<tr>
<td>8871</td>
<td>The Interstellar Medium and the Intergalactic Medium</td>
<td>G</td>
<td>3</td>
<td>The physics of low-density gases, with application to the interstellar medium and the intergalactic medium. Pre-req: Grad standing in Astron; or permission of instructor. Not open to students with credit for 871.</td>
</tr>
<tr>
<td>8873</td>
<td>Cosmology</td>
<td>G</td>
<td>3</td>
<td>Structure and evolution of the universe, physical processes in the early universe, formation of cosmic structure. Pre-req: Grad standing in Astron; or permission of instructor. Not open to students with credit for 873.</td>
</tr>
<tr>
<td>8998</td>
<td>Directed Research in Astronomy and Astrophysics</td>
<td>G</td>
<td>1 - 12</td>
<td>Directed laboratory or library research under the direction of a faculty member that is not leading directly to a dissertation or thesis. Pre-req: Grad standing in Astron, or permission of instructor. Repeatable to a maximum of 60 cr hrs or 20 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>8999</td>
<td>Research in Astronomy and Astrophysics</td>
<td>G</td>
<td>1 - 12</td>
<td>Research for dissertation or thesis. Pre-req: Grad standing in Astron, and permission of instructor. Repeatable to a maximum of 20 completions. This course is graded S/U.</td>
</tr>
</tbody>
</table>
**Athletic Training**

**2000 Basic Athletic Training**
- U 3
- Introduction to the profession of Athletic Training, its governing organizations and basic knowledge and skills in prevention, recognition, management and rehabilitation of injuries and illnesses.
- Prereq: Enrolled in School of Health and Rehabilitation Sciences, or permission of instructor.
- Not open to students with credit for 303. Admis Cond course.

**2010 Athletic Training Pre-Clinical Skills**
- U 1
- Instruction and assessment of foundational athletic training skills. Course also includes directed observations in selected athletic training facilities.
- Prereq or concur: 2000.

**2100 Athletic Training Skills Assessment I**
- U 1
- Assessment of student mastery in selected Athletic Training Clinical Skills.
- Prereq: 2300.

**2189 Introduction to Clinical Care in Athletic Training**
- U 3
- Introduction to clinical field experience in Athletic Training. Includes limited supervised clinical experience in selected Athletic Training facilities.
- Concur: 2300.

**2200 Foundations of Athletic Training Diagnosis**
- U 3
- In depth exploration of the morphological and functional changes that are influenced by and result from sport participation, injury, and illness and that are foundational for making accurate diagnoses.
- Prereq: Anatomy 2300 or 3300, and admission to the Athletic Training Program.

**2289 Athletic Training Clinical Experience First Year Multisite**
- U 3
- Supervised clinical field experience in Athletic Training rotating through multiple selected facilities.
- Prereq: 2189.

**2300 Athletic Training Diagnosis and Acute Management I**
- U 3
- Pathology, evaluation, diagnosis, on-field care, and management of lower extremity & axial skeleton pathologies by athletic trainers. Special emphasis on management of acute trauma and return to play determinations.
- Prereq: 2200.

**2310 Athletic Training Diagnosis and Acute Management II**
- U 3
- Pathology, evaluation, diagnosis, on-field care, and management of upper extremity & head pathologies by athletic trainers. Special emphasis on management of acute trauma and return to play determinations.
- Prereq: 2300.

**3100 Athletic Training Skills Assessment II**
- U 1
- Assessment of student mastery in selected Athletic Training Clinical Skills.
- Prereq: 2100.

**3110 Athletic Training Skills Assessment III**
- U 1
- Assessment of student mastery in selected Athletic Training Clinical Skills.
- Prereq: 3100.

**3189 Athletic Training Clinical Experience: Collegiate I**
- U 5
- Supervised Athletic Training clinical experience in the intercollegiate athletics setting. First of three course sequence.
- Prereq: 2289.

**3289 Athletic Training Clinical Experience: Collegiate II**
- U 5
- Supervised Athletic Training clinical experience in the intercollegiate athletics setting. Second of three course sequence.
- Prereq: 3189.

**3389 Athletic Training Clinical Experience: Collegiate III**
- U 1
- Supervised Athletic Training clinical experience in the intercollegiate athletics setting. Third of three course sequence.
- Prereq: 3289.

**3500 Athletic Training Therapeutic Modalities**
- U 3
- Theory and clinical application of physical agents including heat, cold, light, sound, electromagnetic and mechanical energy in treatment and rehabilitation performed by Athletic Trainers.
- Prereq: 2310.

**3600 Athletic Training Biomechanics**
- U 3
- Theory and clinical application of biomechanics, kinetics, and kinematics by Athletic Trainers in the prevention, diagnosis, management, and rehabilitation of injuries.
- Prereq: 2310.

**3700 Athletic Training Therapeutic Exercise**
- U 3
- Theory and clinical application of therapeutic exercise in rehabilitation by Athletic Trainers.
- Prereq: 3500, 3600, and KnHES 5500.

**3750 Musculoskeletal Screening and Corrective Techniques**
- U 1
- Use of musculoskeletal screening to identify injury risks and development and implementation of specific strengthening programs to minimize those risks.
- Prereq: 3600.

**3800 Care of Medical Emergencies, Trauma, and Disease**
- U 4
- Diagnosis, on-field care, and ongoing management of disease and non-orthopedic trauma by athletic trainers. Special emphasis on management of catastrophic injury and on inflammation and repair.
- Prereq or concur: 2310.

**4100 Athletic Training Skills Assessment IV**
- U 1
- Assessment of student mastery in selected Athletic Training Clinical Skills.
- Prereq: 3110.

**4110 Athletic Training Skills Assessment V**
- U 1
- Assessment of student mastery in selected Athletic Training Clinical Skills.
- Prereq: 4100.

**4120 Athletic Training Skills Assessment VI**
- U 1
- Assessment of student mastery in selected Athletic Training Clinical Skills.
- Prereq: 4100.

**4189 Athletic Training Clinical Experience: High School**
- U 5
- Supervised Athletic Training clinical experience in the high school athletics setting.
- Prereq: 2189.

**4289 Athletic Training Clinical Experience: General Medicine**
- U 1
- Supervised Athletic Training clinical experience in the physician extender/general medical setting. Recommended prereq: 3389.
- Prereq: 3289.

**4389 Athletic Training Clinical Experience: Elective**
- U 1 - 12
- Elective supervised Athletic Training clinical experience. Intended to provide interested students with additional, non-required clinical practice experiences. Requires pre-approval by AT Division's Director of Clinical Education.
- Prereq: Permission of Director of Clinical Education. Repeatable to a maximum of 36 hrs or 4 completions.

**4500 Administration in Athletic Training**
- U 3
- Administration of Athletic Training programs. Includes management of personnel, budget, facilities, medical records, insurance, legal liability, emergency plans, public relations, and other topics.
- Prereq: 3700.

**4600 Psychosocial Issues, Identification and Mediation in Physically Active Patients**
- U 3
- Psychosocial theory and facilitation of development. Disorders are outlined to help athletic trainers identify poor coping mechanisms, psychological disorders, mediation and referral strategies and processes.
- Concur: 4500.

**Atmospheric Sciences**

**2193 Individual Studies in Atmospheric Sciences**
- U 1 - 9
- Independent studies on selected atmospheric sciences related topics.
- Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.

**2194 Group Studies in Atmospheric Sciences**
- U 1 - 3
- Special studies on topics directly related to the atmospheric sciences.
- Repeatable to a maximum of 15 cr hrs or 5 completions.

**2940 Basic Meteorology**
- U 3
- Introduction to the underlying physics of the atmosphere; basic equations of thermodynamics, radiation, and dynamics are presented and used to explain selected atmospheric phenomena.
- Prereq: Math 1151 and Physics 1250. Not open to students with credit for 230 or 5000 (520).

**4191 Internship in Atmospheric Sciences**
- U 1 - 6
- An opportunity for practical experience and on-the-job learning in an atmospheric sciences related work place.
- Prereq: 12 cr hrs in major program, and permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.

**4193 Individual Studies in Atmospheric Sciences**
- U 1 - 9
- Independent studies on selected atmospheric science-related topics.
- Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.

**4194 Group Studies in Atmospheric Sciences**
- U 1 - 3
- Special studies on topics directly related to the atmospheric sciences.
- Repeatable to a maximum of 15 cr hrs or 5 completions.

**4998 Undergraduate Research in Atmospheric Sciences**
- U 1 - 9
- Undergraduate research on topics in Atmospheric Sciences.
- Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.
499H  Honors Undergraduate Research in Atmospheric Sciences
Undergraduate research on topics in Atmospheric Sciences.
PreReq: Honors standing, and permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.

4999 Thesis Research
A program of research that includes individual conferences and culminates in a thesis.
PreReq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.

4999H Thesis Research
A program of research which includes individual conferences and which culminates in an honors thesis and an oral defense.
PreReq: Honors standing, and permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.

5191 Internship in Atmospheric Sciences
An opportunity for practical experience and on-the-job learning in an atmospheric sciences related work place.
PreReq: 12 cr hrs in major program, and permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.

5193 Individual Studies in Atmospheric Sciences
Independent studies on selected atmospheric sciences related topics.
PreReq: Permission of instructor. Repeatable to a maximum of 5 completions. This course is graded S/U.

5194 Group Studies in Atmospheric Sciences
Special studies on selected atmospheric sciences related topics.
Repeatable to a maximum of 15 cr hrs or 5 completions.

5797 Study at a Foreign Institution
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
PreReq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions.

5901 Climate System Modeling: Basics and Applications
An examination of climate system modeling, including their component atmospheric, oceanic, sea ice and land surface models, and their coupling, and their applications.
Prereq: A grade of C- or above 2040 or Geog 5900, or permission of instructor.

5940 Synoptic Meteorology Laboratory
Introduction to reading and interpretation of synoptic weather maps and diagram- and data-communication systems.
PreReq: 2940 (230) or Geog 5900 (520). Not open to students with credit for 620 or Geog 5940 (620). Cross-listed in Geog.

5950 Atmospheric Thermodynamics
An analysis of the fundamentals of atmospheric thermodynamics and their application to meteorological problems.
Prereq: Math 1152 (153). Not open to students with credit for 631.

5951 Dynamic Meteorology I
Fundamental problems in dynamic meteorology; components of the equations of atmospheric motion are derived, and vorticity and divergence in the development of meteorological systems.

5952 Dynamic Meteorology II
Advanced problems in dynamic meteorology; use of the equations of motion in numerical models of the atmosphere, especially those used by the National Weather Service.
Prereq: Math 2255, and a grade of C- or above in AtmosSc 5951 or AeroEng 2405.

7193 Individual Studies in Atmospheric Sciences
Independent studies on selected atmospheric sciences related topics.
Prereq: Permission of instructor. Repeatable to a maximum of 5 completions. This course is graded S/U.

7194 Group Studies in Atmospheric Sciences
Special studies on topics directly related to the atmospheric sciences.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions.

8900 Atmospheric Sciences Seminar
A multidisciplinary seminar reviewing selected topics in atmospheric sciences and related fields.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

8999 Research in Atmospheric Sciences
Research for thesis or dissertation purpose only.
Repeatable to a maximum of 5 completions. This course is graded S/U.

2000 Introduction to the Aviation Industry
Introduction to the aviation industry, including its elements, components, and structures. Topics include: aircraft, airports, airspace, a survey of industry segments and purposes, and careers and career paths.

2100 Private Pilot Fundamentals
Study of flight fundamentals, aircraft operations, weather, and regulations required for Private Pilot certification. This course is conducted under Federal Aviation Administration Regulations Part 141.
PreReq: Not open to students with credit for Aviation 310.01. This course is available for EM credit.

2101 Private Pilot Flight Lab I
The first course in a series of two courses that culminate in the attainment of a private pilot certificate with airplane single engine land privileges. An application and orientation process is required before enrollment.
PreReq: A grade of B- or above in 2100, and CPHR 2.0 or above. Not open to students with credit for Aviation 341.

2102 Private Pilot Flight Lab II
The second course in a series of two courses that culminate in the attainment of a private pilot certificate with airplane single engine land privileges.
PreReq: 2101, and CPHR 2.0 or above. Not open to students with credit for Aviation 342.

2200 Aviation Communication
Consideration of oral, written, operational, professional, impromptu, prepared, and management communication. Emphasis on aviation communication protocols and formats.
PreReq: 2000 and 2100.

2300 Aircraft Performance and Weather
Weather theory, patterns, data, and analysis. Data formats and sources. Consideration of weather conditions as they relate to aircraft and flight performance.
PreReq: Aviation 2000 and 2100. Not open to students with credit for Aviation 410 or 411.

2501 Commercial Cross Country Flight Lab
Course study of flight and weather as they relate to aircraft and flight performance.
PreReq: 2100, 2101, and 2102; and CPHR 2.0 or above; and permission of instructor.

2900 Air Traffic Control Fundamentals
This course is an in-depth examination of the role and function of the Air Traffic Control environment as it relates to operations and pilot communications within the National Airspace System (NAS).
PreReq: 2300, or permission of instructor.

3000 Aviation Management and Marketing
Consideration of management and marketing concepts and models. Analysis of management and marketing strategies and practices in the aviation industry.
PreReq: 2000 and 2100. Concur: 2200, or a second-level writing course. Not open to students with credit for Aviation 550 or 654.

3100 Instrument Flight Fundamentals
Study of flight by reference to instruments, IFR regulations, and procedures in the National Airspace System.
PreReq: A grade of B- or above in Aviation 2100, 2101, and 2102. Not open to students with credit for Aviation 415.

3101 Instrument Flight Lab
Instrument flight operations, navigation, patterns, maneuvers, regulations, approach protocols, and cross country flight planning and execution.
PreReq: 2100 and 2102; and CPHR 2.0 or above. Concur: 3100. Not open to students with credit for Aviation 441 or 442.

3193 Individual Studies in Aviation
Research, project(s), and/or investigation into aviation topics that are not treated in existing classes.
PreReq: Permission of instructor. Repeatable to a maximum of 7 cr hrs or 2 completions. This course is graded S/U.

3194 Group Studies in Aviation
Research, project(s), and/or investigation into comprehensive and larger aviation topics that are not treated in existing classes and are best served by a team.
PreReq: Permission of instructor. Repeatable to a maximum of 7 cr hrs or 2 completions.

3200 Aviation Regulations and Policy
Consideration and analysis of aviation regulatory environments and processes, such as regulatory certifications, rulemaking, and legislation. Maintenance, airports, aircraft, and operations. Law, environment, safety, security, and operations.
PreReq or concur: 3000.

3300 Aviation Human Factors and Safety
Consideration of Human Factors including all sensory, perceptive, cognitive and decision making dynamics as they are expressed in aviation. Consideration of aviation safety including incidents, accidents, crew resource management, and performance.
PreReq or concur: 3000. Not open to students with credit for Aviation 540 or 560.

3340.01 Aviation Human Factors Transition
First half of the curriculum of the new semester course AVN 3300 - "Aviation Human Factors" which is the combination of AVN 540 - Aviation Human Factors, and AVN 560 - Aviation Safety, under the quarter system. This course will focus solely on the aviation human factors component of the combined course curriculum. The course will be offered for 2 semester units.
PreReq: Aviation 560. Not open to students with credit for Aviation 540.
3400 Aviation Accident Investigation U 3
Review of accident investigation techniques and methodologies that will be reinforced with case examples.
Prereq: 2000 and 2100.

3500 Airline Labor Relations U 3
Provides students with an overview of the modern airline labor system in the United States as regulated by the Railway Labor Act. Areas of focus include the organizing process, collective bargaining, negotiation tools and techniques, dispute resolution, corporate structures, mergers, and the union's role in safety.
Prereq: 2000, 2100, and 3000.

3600 Business and Corporate Aviation Management U 3
Analysis and review of the principles and challenges of operating an on-demand air transportation system. Consideration of decision making strategies and sound operating practices that are needed to define and manage a corporate flight department. Presentation of information via textbook, assigned readings, videos, lecture and guest speakers.
Prereq: 3000.

3700 Building a Diverse Workforce in Aviation U 3
This course is an analysis of what it takes to create and sustain a diverse and inclusive workforce in the aviation industry. Students will engage with guest speakers and readings to understand how diversity, inclusion, and equity are defined. Readings will cover the historical significance of diversity and inclusion efforts.
Prereq: 2000, 2100, and 2200; or permission of instructor.

4000 Air Transportation Analysis I U 3
Analysis of domestic and international air transportation systems and models. Particular focus on supply and demand components. Consideration of major industry segments, such as commercial, business, cargo, and general aviation.
Prereq: Aviatn 3000. Not open to students with credit for Aviation 650 or 652.

4100 Commercial Flight Fundamentals U 3
Study of regulations, aerodynamics, systems, performance profiles, navigation, weather, and operations for the commercial pilot certificate.
Prereq: A grade of B- or above in Aviatn 2100, 2102, and 3101; or permission of instructor. Not open to students with credit for Aviation 413.

4101 Commercial Flight Lab U 3
Second course toward Commercial Pilot certificate single engine land.
Prereq: 2102 and 3101; and a CPHR 2.0 or above. Not open to students with credit for Aviation 444 or 445.

4200 Aircraft Dispatch Fundamentals U 3
Aircraft Dispatch Fundamentals is the first in a two course sequence of Aircraft Dispatch oriented courses that lead to FAA Aircraft Dispatch Certification. This course provides an overview of aerodynamics, navigation, weather theory and forecasting, and flight planning. Small general aviation aircraft are used as examples in the course. Note: Age Requirements: All students must be 21 years of age upon completion of AVN 4201-Applied Aircraft Dispatch in order to receive a graduation certificate that allows students to sit for the FAA Aircraft Dispatch Practical Exam. This is to ensure compliance with the requirements found in FAR 65.53.
Prereq: 2100, 2300, and permission of instructor.

4201 Applied Dispatching U 3
Study of dispatch fundamentals, aircraft systems, performance, ATC requirements, and the practical application of dispatching an aircraft. Note: Age Requirements: All students will be required to be 21 years of age upon completion of AVN 4201-Applied Aircraft Dispatch in order to receive a graduate certificate that allows you to sit for the FAA Aircraft Dispatch Practical Exam. This is to ensure compliance with the requirements found in FAR 65.53.
Prereq: 4200.

4300 Advanced Multi-Engine Operations U 2
Introduction and consideration of Part 121 and 135 operations with a comprehensive study of the principles of advanced aircraft operations.
Prereq: Aviatn 4100. Not open to students with credit for Aviation 417.

4301 Commercial Multi Engine Flight Lab U 2
Aeronautical knowledge and flight training required to attain an airplane multi engine rating in addition to the Commercial Pilot certificate.
Prereq: A grade of B- or above in 3100 and 4100; 2501 and 3101; and a CPHR 2.0 or above. Not open to students with credit for Aviation 446.

4400 Airport Management U 3
Comprehensive study of airport operations and management; role of the airport manager in planning, finance, administration, public relations, socio-political and environmental considerations, and operational requirements and maintenance.
Prereq: Aviatn 3000. Not open to students with credit for Aviation 552.

4500 Aviation Capstone U 3
Directed research, preparation, and presentation of relevant and coordinated information that summarizes current or predicted significant aviation topics, issues, and developments. Partnership with industry is encouraged.
Prereq: Aviatn major, and completion of the Aviatn major core.

4800 Professional Practices in Industry U 2 - 5
Application of academic skills, knowledge, and training to identify issues, problems, or research in the student's aviation industry workplace. Employment and faculty sponsorship, problem identification, analysis, and solution proposals.
Prereq: Approval of faculty sponsor and/or industry employer/sponsor. Not open to students with credit for Aviation 489. Repeatable to a maximum of 7 cr hrs or 2 completions. This course is graded S/U.

4999H Aviation Engineering Research for Honors Thesis U 1 - 3
Supervised research and project work arranged individually for honors students resulting in a written Honors thesis.
Prereq: Honors standing in the College of Engineering, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 4 completions.

5000 Air Transportation Analysis II U 3
Consideration of commercial air transportation systems with emphasis on performance measurement, productivity, optimization, and network analysis.
Prereq: Aviatn 4000. Not open to students with credit for Aviation 591 or 750.

5100 Flight Instructor Methodology U 2
Study of learning theories, communication techniques, the teaching process, teaching methods, and evaluation. Application of these concepts to develop lesson plans and course(s) of study.
Prereq: A grade of B- or above in Aviatn 2300, 3100, and 4100. Not open to students with credit for Aviation 421.

5101 Flight Instructor ASE Flight Lab U 2
Aeronautical knowledge, experience and skills necessary to meet or exceed FAR Part 61 requirements for a flight instructor certificate with airplane single engine land privileges.
Prereq: A grade of B- or above in 5100, and CPHR 2.0 or above. Not open to students with credit for Aviation 461.

5102 Flight Instructor AME Lab U 1
Aeronautical knowledge and flight training necessary to attain an airplane multi-engine rating in addition to the Flight Instructor ASE Flight certificate.
Prereq: Aviatn 4301 and 5101. Not open to students with credit for Aviation 463.

5193 Individual Studies in Aviation U 2 - 5
Research, projects, and/or investigations into aviation topics that are not treated in existing classes.
Prereq: Permission of instructor. Repeatable to a maximum of 7 cr hrs or 2 completions.

5194 Group Studies in Aviation U 2 - 5
Team research, projects, and/or investigation into comprehensive and larger aviation topics that are not treated in existing classes.
Prereq: Permission of instructor. Repeatable to a maximum of 7 cr hrs or 2 completions.

5200 Instrument Flight Instructor Methodology U 2
Teaching methods and evaluation procedures for a course of study leading to an Instrument Instructor rating.
Prereq: A grade of B- or above in Aviatn 3100 and 5100. Not open to students with credit for Aviation 422.

5201 Flight Instructor Instrument Flight Lab U 1
Necessary aeronautical knowledge, experience, and skills to meet or exceed FAR Part 61 requirements for instrument flight instructor certification.
Prereq: Aviatn 5101, or Flight Instructor Certificate. Not open to students with credit for Aviation 462.

5300 Airport Planning, Design, and Development U 3
A comprehensive study of airport planning, design and development, the role of the airport and its components as part of the overall air transportation system, the issues related to the planning, design, and development of the airport and its system.
Prereq: Aviatn 3000, CRPlan 3100, or Sr standing in CivilEn major, or Grad standing, or permission of instructor. Cross-listed in CRPlan and CivilEn.

5999H Honors Research in Aviation U 1 - 6
Designed to give the student an opportunity to pursue special studies in Aviation at an honors level on topics not otherwise offered.
Prereq: Honors standing, or permission of instructor. Repeatable to a maximum of 6 cr hrs or 2 completions. This course is graded S/U.

Biochemistry

2194 Group Studies U 1 - 4
Group Studies.
Prereq: Permission of instructor. Repeatable to a maximum of 16 cr hrs or 4 completions. This course is graded S/U.

2210 Elements of Biochemistry U 4
A survey of biochemistry stressing the qualitative rather than the quantitative approach. Credit does not count toward a major in biochemistry.
Prereq: Chem 1110 (102) or 1210 (122), or equiv. Not open to students with credit for 211 and 212. This course is available for EM credit.
50 Biochemistry

290H Early Experience in Research in Biochemistry: Seminar U 1
Introduction to biochemical research through seminars and laboratory tours by faculty in the department. Biology 1113 (113) recommended but not required. Prereq: Honors standing, and Chem 1200 (123), 1620 (163), or 1920H (203H); or permission of instructor. Not open to students with credit for 1900H or 200H. This course is graded S/U.

2998H Early Experience in Research in Biochemistry: Laboratory U 1 - 3
A laboratory sequel to Biochem 2900H to introduce undergraduates to biochemical research. Prereq: Honors standing, and 2900H; or permission of instructor. Not open to students with credit for 1998H or 200H. This course is graded S/U.

3798.02 Study Tour: Foreign U 1 - 10
Study Tour. Specific content, location, semester(s) of offering, and prerequisites vary; contact department office for details. Foreign locations only. Prereq: Permission of instructor. Repeatable. This course is graded S/U.

4193 Individual Studies U 1 - 5
Individual Studies. Prereq: Permission of instructor. Repeatable to a maximum of 25 cr hrs or 8 completions. This course is graded S/U.

4194 Group Studies U 1 - 4
Group Studies. Prereq: Permission of instructor. Repeatable to a maximum of 16 cr hrs or 4 completions. This course is graded S/U.

4511 Introduction to Biological Chemistry U 4
An introductory course in biochemistry dealing with the molecular basis of structure, metabolism, genetic replication, transcription, and translation in plants, animals, and microorganisms. Prereq: Chem 1220 (123) or 1250 (125), and 2510 (252) or 2310 (231), and one of Molecular Sciences; or permission of instructor. Not open to students with credit for 511. This course is available for EM credit.

4998 Undergraduate Research in Biochemistry U 1 - 5
Undergraduate research in biochemistry, structural and molecular biology. Prereq: Permission of instructor under whose supervision the work is to be completed. Repeatable to a maximum of 20 cr hrs or 5 completions.

4998H Undergraduate Honors Research in Biochemistry U 1 - 5
Undergraduate research in biochemistry, structural and molecular biology. Prereq: Honors standing, and permission of instructor under whose supervision the work is to be completed. Repeatable to a maximum of 20 cr hrs or 5 completions.

4999 Thesis Research in Biochemistry U 1 - 5
A program of reading and research for each student with individual conferences and reports, culminating in the preparation of a thesis. Prereq: Permission of instructor under whose supervision the work is to be completed. Repeatable to a maximum of 20 cr hrs or 5 completions.

4999H Honors Thesis Research in Biochemistry U 1 - 5
A program of reading and research for each student with individual conferences and reports, culminating in the preparation of an honors thesis. Prereq: Honors, and Jr or Sr standing, and permission of instructor under whose supervision the work is to be completed. Repeatable to a maximum of 20 cr hrs or 5 completions.

5193 Individual Studies U G 1 - 5
A program of supervised independent study for each student with individual conferences and reports. Prereq: Permission of instructor under whose supervision the study is to be completed. Repeatable to a maximum of 25 cr hrs or 8 completions. This course is graded S/U.

5194 Group Studies U G 1 - 3
Group Studies. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions.

5613 Biochemistry and Molecular Biology I U G 3
An introductory course in biochemistry and molecular biology developing in three semesters the molecular basis of structure and function of living cells. Prereq: Chem 2510 (252), 2610, or 2901H. Prereq or concur: Chem 2520 (253), 2620, or 2920H, and one semester in Biological Sciences. Not open to students with credit for 613 or 4511 (511).

5614 Biochemistry and Molecular Biology II U G 3
Continuation of Biochem 5613. Prereq: A grade of C- or above in 5613.

5615 Biochemistry and Molecular Biology III U G 3
Continuation of Biochem 5614. Prereq: A grade of C- or above in 5614.

5621 Biochemistry and Molecular Biology Laboratory U G 4
Laboratory course covering the principles and application of basic lab techniques, protein purification, enzyme assays, and recombiant DNA technologies. Prereq: A grade of C- or above in 4511 or 5613, or equiv.

5701 DNA Transactions and Gene Regulation U G 3
Understanding mechanisms of DNA replication, DNA repair and recombination, transcription, translation, regulation of gene expression, and the experimental approaches to these topics. Prereq: 5615 or equiv., and MolGen 4193 or 4500, and Sr or Grad standing, or permission of instructor. Not open to students with credit for MolGen 5701. Cross-listed in MolGen.

5721 Physical Biochemistry I U G 3
Introduction to physical chemistry with emphasis on biological applications; designed for students in the life sciences. Prereq: Biology 1113; Math 1152 (113), 1172, 1181H, or 2162 (162); and Physics 1201 (113) or 1251 (133). Prereq or concur: Chem 2520 (253), 2620, or 2920H. Not open to students with credit for 7210.1 (7210) or 4200 or 4300.

5722 Physical Biochemistry II U G 3
Continuation of Biochem 5721. Prereq: 5721, or Chem 4200 or 4300. Not open to students with credit for 721.02 and 721.03.

6701 Advanced Biochemistry: Molecular Biology G 3
An advanced treatment of the biochemical principles of gene and genome function. Prereq: 5615 and MolGen 4500, or equiv. Concour: 6761 or BioPhrm 6761, or permission of instructor. Not open to students with credit for BioPhrm 7610, Microbio 6768, 6810, or MolGen 5701. Cross-listed in BioPhrm.

6761 Advanced Biochemistry: Macromolecular Structure and Function G 3
An advanced treatment of the physical and chemical properties, biological function, and structural biology of proteins and nucleic acids. Prereq: 5615 (615), Chem 2520 (253), 2550 (255), and 4210 (521), or equiv; or permission of instructor. Not open to students with credit for 761 and 766, or Chem 761 and 766, or BioPhrm 7617 (7617) and 7681. Cross-listed in BioPhrm.

6762 Advanced Biochemistry: Enzymes G 1½
An advanced treatment of enzymology and enzyme mechanisms. Prereq: 5615 (615), and Chem 2520 (253) or 2550 (255), and 4210 (521), or equiv; or permission of instructor. Not open to students with credit for 762, Chem 762, or MolBioc 6762 (762). Cross-listed in MolBioc.

6763 Advanced Biochemistry: Membranes and Lipids G 1½
An advanced treatment of membranes structure, function, and lipids. Prereq: 5615 (615), Chem 2520 (253), 2550 (255), and 4210 (521), or equiv; or permission of instructor. Not open to students with credit for 763, Chem 763, or MolBioc 6763 (763). Cross-listed in MolBioc.

6765.01 Advanced Biochemistry: Physical Biochemistry G 1½
An advanced treatment of physical biochemistry including topics in spectroscopy. Prereq: 5615 (615), Chem 2520 (253), 2550 (255), and 4210 (521), or equiv; or permission of instructor. Not open to students with credit for 6765.02 (765), Chem 765, or MolBioc 765.

6765.02 Advanced Biochemistry: Physical Biochemistry G 3
An advanced treatment of physical biochemistry including topics in spectroscopy. Prereq: 5615 (615), Chem 2520 (253), 2550 (255), and 4210 (521), or equiv; or permission of instructor. Not open to students with credit for 6765.01 (765), Chem 765, or MolBioc 765.

6998 Graduate Research in Biochemistry G 1 - 12
Research in biochemistry, structural and molecular biology. Repeatable. This course is graded S/U.

6999 Research for Masters Thesis G 1 - 12
Research for Masters thesis only. Repeatable. This course is graded S/U.

7766.01 Advanced Biochemistry: Nucleic Acids G 1½
Advanced understanding of the structure and function of nucleic acids, their interactions with other biological molecules, and of the techniques for detailed mechanistic investigation of nucleic acid structure and function. Prereq: 6701 or 6761, or permission of instructor. Not open to students with credit for 7766.02.

7770.01 Advanced Biochemistry: Protein Engineering G 1½
Current research on genetic and protein engineering of proteins for biotechnological and theoretical studies. Prereq: 6761 (761), Chem 6761 (761), or MolBioc 6761 (761), or equiv, or permission of instructor. Not open to students with credit for 7770.02 (770).

8900.01 Advanced Biochemistry: Biomolecular NMR G 1½
Application of NMR spectroscopy to the study of biological macromolecules. Heteronuclear NMR, product operators, multidimensional spectra, proteins, nucleic acids, structure determination, dynamics, ligand complexes. Prereq: Grad standing in Biochemistry, Biophysics or Chemistry, or permission of instructor. Not open to students with credit for 8900.02 (805).

8900 Advanced Topics in Biochemistry G 1 - 4
Advanced treatment of areas of current interest in biochemistry; topics will be announced each semester. Prereq: 5615 (615) or equiv, or permission of instructor. Repeatable to a maximum of 16 cr hrs or 4 completions.
### Bioethics

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<tr>
<td>8999</td>
<td>Research for Dissertation</td>
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Research for doctoral dissertation only. Repeatable. This course is graded S/U.

#### Bioenergy and Water Treatment Management

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<tr>
<td>1201T</td>
<td>Exploring Bioenergy and Water Treatment Management</td>
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Promotes student success in college and preparation for a career; explores personal and career interests, needs, goals, and the support services available for student success.

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<tr>
<td>2010T</td>
<td>Introduction to Bioenergy and Water Treatment Management</td>
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</table>

An Introduction to conventional and alternative energy (with emphasis on bioenergy and bioproducits), including conservation, economic and environmental issues. Water Consumption, scarcity, pollution, and water resource recovery will be emphasized. Fermentation technology and bioethics of microbial breakdown of carbohydrates, proteins, and lipids will be introduced. This course is available for EM credit.

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<tr>
<td>2020T</td>
<td>Bioenergy and Wastewater Technologies</td>
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A detailed description of technologies employed in bioenergy-generating processes and wastewater treatment. Scientific and technical backgrounds of fermentation technology will be introduced. A critical evaluation of the environmental impacts of organic wastes. Bioreactor design; management of industrial, agricultural, and municipal solid wastes and wastewater will be covered. Prereq: 2010T; Chem 1110 or 1210. This course is available for EM credit.

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<tr>
<td>2030T</td>
<td>Feedstock Evaluation and Analysis</td>
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An Introduction to feedstocks used in the bioenergy/bio-products industry, including analytical tools for feedstock evaluation and handling, and logistical and economic aspects of industrial biomass feedstocks. Prereq: 2010T. This course is available for EM credit.

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<tr>
<td>2035T</td>
<td>Sustainable Bio-Based Technologies</td>
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The science and economics of composting, recycling, bioremediation, and phytoremediation will be introduced. Bioconversion of organic wastes and plant-derived sugars to value-added non-fuel products (platform chemicals and other bio-products) will be explored through classroom sessions and laboratory experiments. Prereq: 2010T; Chem 1210. This course is available for EM credit.

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<tr>
<td>2040T</td>
<td>Bioenergy and Water Management Projects</td>
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This capstone course provides a general overview of bioenergy-generating and wastewater treatment systems with emphasis on planning and logistics, project management, economics, and operations in a real-world setting. Practical applications for managing waste-to-energy projects and wastewater treatment will be emphasized through hands-on and on-site experience. Prereq: 2020T; 2030T.

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<tr>
<td>2198T</td>
<td>Bioenergy and Water Management Practicum</td>
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</table>

Supervised practical experience in a relevant work environment-bioenergy laboratory, wastewater treatment plant, biogas plant-with emphasis on developing competencies related to classroom and career activities. A grade of C or better required to meet graduation requirements. Repeatable to a maximum of 4 cr hrs or 2 completions.

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<tr>
<td>2191T</td>
<td>Bioenergy and Water Management Internship</td>
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Employment experience in a bioenergy/biological waste management work environment that provides varied occupational experience, supervised by an employer and coordinated by faculty. A grade of C or better required to meet graduation requirements. Prereq: GPA 2.00 or above, and permission of instructor.

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<tr>
<td>2193T</td>
<td>Individual Studies</td>
<td>U</td>
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Designed to give an individual student an opportunity to pursue special studies not offered in other courses. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

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<tr>
<td>2194T</td>
<td>Group Studies</td>
<td>U</td>
<td>1 - 3</td>
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Designed to give groups of students an opportunity to pursue special studies not offered in other courses. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

### Biochemistry

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<tr>
<td>2010</td>
<td>Ethics of Biomedical Science Research</td>
<td>U</td>
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Provides a foundation in traditional ethics, a consideration of the subcategories of bioethics, neuroethics, and eugenics and instructs students in how to apply ethics to contemporary issues in research and technology. This course also satisfies the basic components of Responsible Conduct of Research (RCR) education.

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<tr>
<td>2020</td>
<td>Bioethics in Film, Media &amp; Society: Explorations in Culture and Biopolitics</td>
<td>U</td>
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This course is designed as a forum for identifying and discussing moral, societal, and political issues in bioethics as represented through various forms of moving-image culture, primarily in film but also including still photography, television, and digital media.

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<tr>
<td>3000</td>
<td>Case Studies in Medical and Healthcare Ethics</td>
<td>U</td>
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The field of medical ethics has been and is continually shaped by major cases, both famous and infamous. This course surveys the causes and contexts, as well as the philosophical and ethical issues embedded within these cases.

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<tr>
<td>4000</td>
<td>Readings in Bioethics</td>
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Readings in Bioethics entails a close reading of classic bioethics texts from Hippocrates through the beginning of the modern bioethics period (i.e., Fletcher, Ramsey, and Singer) and through the contemporary era. Religious and secular writings from diverse perspectives will be included. This course combines lecture presentation, class discussion, and student presentations.

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<tr>
<td>6000</td>
<td>Bioethics Theory and Foundations</td>
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Offers a philosophical survey of the moral foundations of contemporary bioethical theories and health care policies.

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<tr>
<td>6010</td>
<td>Biomedical Research Ethics</td>
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The broad intent of this course is to highlight the importance of ethics in biomedical research and to explore how critical ethical thinking can be used to analyze personal decision-making, public regulation, and the law concerning advanced biomedical sciences/technologies and their clinical applications.

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<tr>
<td>6020</td>
<td>Clinical Bioethics I</td>
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Explore the major clinical ethical issues confronting the practices of medicine and biomedical science.

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<tr>
<td>6030</td>
<td>Bioethics, Law, &amp; Public Policy</td>
<td>G</td>
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Instructs students in rudimentary legal research skills, constitutional foundations of health care law applicable to some classical and contemporary legal issues, and an overview of the structures of the legal system of the United States.

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<tr>
<td>6040</td>
<td>Bioethics Symposium I</td>
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<td>1½</td>
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This unique course follows a longitudinal format with monthly 3-hour lectures, presentations, panel discussions, and/or debates led by various OSU faculty and guest lecturers. The intent of the course is to present to students a wide exposure to the most relevant, contemporary, and controversial topics in bioethics presented from a wide array of experts in the disciplines intersecting bioethics. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

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<tr>
<td>6050</td>
<td>Bioethics Symposium 2</td>
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<td>1½</td>
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This unique Symposium II course follows a longitudinal format with monthly 3-hour lectures, presentations, panel discussions, and/or debates led by various OSU faculty and guest lecturers. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

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<tr>
<td>7000</td>
<td>Advanced Clinical Bioethics</td>
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Building upon Clinical Bioethics (BIOETHIC 6020), this course will engage students in the more advanced processes and procedures of clinical ethical analysis, focusing on ethical reflection, negotiation, and decision making in clinical ethical scenarios. Theoretical frameworks, concepts, and applied analytical strategies will be examined in light of their usefulness for practice.

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<tr>
<td>7010</td>
<td>End of Life Ethics</td>
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Over 2/3rds of clinical ethics dilemmas involve end-of-life decision-making, End-of-life care and palliative care are growing fields. This course will engage the essential ethics issues involved in end-of-life care. Clinical cases and medical knowledge will be explored. The prevailing procedural ethics of our time will be utilized to discuss ethical dilemmas.

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<tr>
<td>7030</td>
<td>History of Medical Ethics and Bioethics</td>
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The main goal of this course is to explore the historical roots of the field of bioethics. The course will be divided into a few main parts: the first is a broad survey of key figures and movements in medical history from antiquity to modernity, including the Hippocratics, Galenic medicine, the birth of dissection, Christian hospitality, Medieval medicine, modern surgery, the age of antibiotics, etc.

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<tr>
<td>7040</td>
<td>Bioethics and the Holocaust</td>
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This course is designed to allow students an in-depth study of one of the most troubling periods in the history of medicine the active participation of physicians in the Holocaust. We will attempt to understand the distorted rational behind this genocide by ordinary men and women. We will also discuss, in depth, analogies to today’s medical practice.
Bioethics

7050 Pediatric and Perinatal Bioethics  G  3
This course focuses on key ethical issues surrounding women's health and the pre, peri, and postnatal care of the mother and the newborn, including but not limited to ethics of: preimplantation genetic diagnosis, prenatal diagnosis, maternal decision making, in vitro fertilization, prenatal diagnosis, fetal treatment/surgery, neonatal care, genetic counseling, gene therapy, and genetic testing.

7060 Religious and Theological Perspectives in Bioethics  G  3
This course addresses the discourses and interplay of secular, religious, and theological perspectives in the field of bioethics. One central goal of this course is to identify the thought and language of secular, immanent bioethics in comparison/contrast with religious, transcendent bioethics without glossing the thick plurality of religious differences and perspectives in the major religions.

7070 President's Bioethics Councils  G  1½
This course will survey the writings of the various president's bioethics councils beginning in 1974 to the most recent bioethics commission established by President Obama.

7080 Belmont Report  G  1½
This course will delve deeply into the text of the Belmont Report, including reading essays in the appendices of the report and additional outside material.

7800 Research Methods in Bioethics  G  3

Students will explore the variety of methods used to address ethical concerns surrounding clinical care, biomedical research, and health care policy. The course will equip students with analytic and practical skills to engage in research of their own.

7890 Clinical Bioethics, Healthcare Mediation, and Conflict Resolution  G  3
This course emphasizes learn-by-doing approach to conflict resolution through online and on-site elements. The course familiarizes participants with a 'toolbox' of skills essential to conflict resolution applicable to bioethics consultations.

PreReq: 6020, or permission of instructor. This course is graded S/U.

7895 Bioethical Issues in Genetic Counseling  G  3
The course aims to give students the ethical background to lead in an ongoing national dialogue about the ethical, legal, and social implications of advances in genomic technology, reproductive health and the professional responsibility of counseling.

8000 Directed Readings in Bioethics  G  3
This course of directed readings provides additional research preparation for a particularly high-level MA Thesis. Admission to this course requires a sponsoring faculty member and approval from the Director of the MA program. The syllabus for this course will be written in conjunction between the student and sponsoring faculty member and approved by the Director of the MA program.

PreReq: 6000-level BioEth course, or approval of Program Director. This course is graded S/U.

8010 Bioethics Practicum  G  3
Alongside the MA Thesis Project, the Ethics Practicum is one of two possible capstone projects in the MA program. Having selected the Ethics Practicum, students two options or fields of focus for the practicum: clinical ethics or research ethics. Both areas of focus for the practicum are based upon a Personal Learning Plan (PLP). This course will be co-taught and supervised by a faculty member and approved by the Program Director.

PreReq: 6000-level BioEth course, or approval of Program Director. This course is graded S/U.

8020 Bioethics Masters Thesis  G  3

The master's thesis is a carefully argued scholarly paper of approximately 12,000 to 13,000 words (roughly 50 pages). Students will undergo the supervision of a faculty advisor to craft and write an original argument with sources. The thesis must have a substantial research component and a focus on a suitable topic within the field of bioethics as a final element in the master's degree.

PreReq: BioEth 6000-level course. This course is graded S/U.

Biological Chemistry and Pharmacology

3311 Fundamentals of Medical Biochemistry I  U  3
Includes organic chemistry necessary for biochemistry. Basic structures and interactions of biomolecules in health and disease. Topics essential to human nutrition, dietetics, clinical chemistry, and paramedical fields. Proteins, enzymes, and vitamins. PreReq: Chem 1110 (102), 1210 (121), or 1220. Not open to students with credit for 311.

3312 Fundamentals of Medical Biochemistry and Molecular Biology II  U  3
A continuation of 3311. Energy production; the chemistry and metabolism of carbohydrates, lipids and amino acids; nucleic acids and protein biosynthesis; integration and control of metabolic pathways, and the biochemistry of body fluids. PreReq: Chem 1110, 1210, or 1220.

4250 Undergraduate Independent Study in Pharmacology/Pharmacogenomics  U  1 - 10
Offers undergraduate students the opportunity to gain research experience in laboratories in Pharmacology/Pharmacogenomics and learn the latest techniques and approaches. PreReq: Permission of instructor. Repeatable to a maximum of 20 cr hrs or 20 completions. This course is graded S/U.

4998 Undergraduate Research  U  1 - 10
Undergraduate research or study in an area molecular and/or cellular biochemistry under the direction of a departmental faculty member.

PreReq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 3 completions.

4998H Undergraduate Research for an Honors Program  U  1 - 10
Undergraduate research or study in an area of molecular and/or cellular biochemistry under the direction of a departmental faculty member.

PreReq: Honors standing, and permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

4999 Thesis Research in Biological Chemistry and Pharmacology  U  1 - 10
A program of reading and research for each student with individual conferences and reports, culminating in the preparation of an honors thesis.

PreReq: GPA 3.0 and above, and permission of the instructor under whose supervision the work is to be completed.

4999H Honors Thesis Research in Biological Chemistry and Pharmacology  U  1 - 10
A program of reading and research for each student with individual conferences and reports, culminating in the preparation of an honors thesis.

PreReq: Honors status, GPA of 3.4 or higher, Junior or Senior standing, and permission of the instructor under whose supervision the work is to be completed.

5050 Molecular Basis of Oxidative Stress  U  G M  2
The inter-relationships between reactive species and development of human diseases will be the highlight of lectures and discussions.

PreReq: Chem 2520, 2620, or 2620H.

5193 Individual Studies  U  G M  1 - 10
Qualified students can conduct a minor investigation under the direction of a faculty member. Au. Sp. of Su Sems. PreReq: Course work in Biochemistry, and permission of instructor. Repeatable to a maximum of 10 cr hrs or 4 completions. This course is graded S/U.

5300 Molecular Pharmacology  U  G  2
Identification of drug receptor genes and their second messenger pathways provides information unavailable from traditional approaches. We will examine how this information is used to develop new medications to treat a wide range of disorders with improving efficacy and safety.

PreReq: Permission of instructor.

5400 Chemotherapeutic Drugs for Cancer and Infectious Diseases  U  G  2
Over the course of the last century a wide variety of drugs have been developed for chemotherapy of cancer and infectious disease. The mechanisms of action of these drugs involves diverse biological processes. In this course we will examine the molecular components targeted by anticancer, antimycobacterial, antifungal, antiprotozoal, anthelminthic and antiviral drugs.

PreReq: Prior coursework in biochemistry or physiology or equiv., or permission of instructor.

5500 Cardiovascular Pharmacology  U  G  2
Covers basic principles of drug action for specific drug classes, including chemical properties, mechanisms of drug action, clinical uses, disposition, contraindications, adverse reactions, clinically significant drug interactions, and drug-disease interactions.

PreReq: Prior coursework in biochemistry or physiology or equiv., or permission of instructor.

5510 Responsible Conduct in Biomedical Research  U  G M  1 - 2
The broad intent of this course is to highlight the importance of responsible conduct in biomedical research and to explore how critical ethical thinking can be used to analyze personal decision-making, public regulation, and the law concerning advanced biomedical sciences/technologies and their clinical applications. This course will introduce students to professional and ethical issues.

5555 Epigenetics  U  G M  3
This course will provide an in depth understanding of the molecular mechanisms underlying epigenetic inheritance, which is the inheritance of traits not encoded in the sequence of a genome. In addition, the course will provide students an opportunity to demonstrate command of the subject matter through a presentation from the current scientific literature.

PreReq: MolGen 4606; or Biochem 5613, 5614, and 5615; or Grad standing; or permission of instructor.

5600 Introduction to General Pharmacology  U  G  3
Introductory course emphasizing the general principles of pharmacology using a systems-based and mechanism-based approach. The course provides a simple overview of the subject.

PreReq: Prior coursework in physiology, or permission of instructor. Not open to students with credit for Pharmac 6502.

5700 Introduction to Personalized Therapeutics and Pharmacogenomics  U  G  3
Exploration of the trend to therapy tailored to the individual patient rather than "one drug fits all," inter-individual differences in drug responses, with emphasis on genetic and genomic factors; ethical, regulatory and economic issues that impact drug therapies. Introductory biology course recommended.
5733 Human Genetics U G M 2

The principles of human genetics covering mapping of disease genes, defects causing human disease, the cloning of disease genes, gene therapy, transgenics, and specific pathological disorders. Open to seniors who have completed the prerequisites. Prereq: MolGen 4500 (500) or 4606 (606), or equiv. Not open to students with credit for 733, MolGen 5733 (733), or Pathol 5733 (733). Cross-listed in MolGen and Pathol.

5800 Stem Cell Biology and Applications for Human Regenerative Medicine U G M 3

Basics of stem cell biology, as applied to multiple disease models of the brain and other organs, cancer research and aging. Practical examples and models from patients with neurodevelopmental and neurodegenerative diseases. Demonstration of laboratory strategies and techniques will be presented.

Prereq: One year of basic biology, or permission of instructor.

5824 Pharmacology of the Nervous System U G 3

Pharmacological agents are valuable tools with which to probe the molecular and cellular basis of brain function. The scientific rational underlying the use of drugs to treat a wide range of neurologic and psychiatric disorders will be examined.

Prereq: Undergraduate Biochemistry or Physiology (or equivalent), or permission of instructor. Cross-listed in Psych.

5852 Biology of Aging U G 2

Covers molecular, cellular and organismal aspects of aging. Experimental evidence as well as current and historically important theories of aging will be discussed. The course will rely on analysis of original peer-reviewed publications.

Prereq: Not open to students with credit for 5852 (852). CT Admin Cond course.

6701 Advanced Biochemistry: Molecular Biology G 3

An advanced treatment of the biochemical principles of gene and genome function.

Prereq: Biochem 5615 and MolGen 4500, or equivs. Concur: BioPhrm 6761 or Biochem 6761; or permission of instructor. Not open to students with credit for Biochem 6701, Microbio 6080, 6010, or MolGen 5701. Cross-listed in Biochem.

6761 Advanced Biochemistry: Macromolecular Structure and Function G 3

An advanced treatment of the physical and chemical properties, biological function, and structural biology of proteins and nucleic acids.

Prereq: Biochem 5615 (615), and Chem 2520 (253), 2550 (255) and 4210 (521), or equiv; or permission of instructor. Not open to students with credit for 6701 (761 and 766), Chem 761 and 766, or Biochem 6761 (761 and 766). Cross-listed in Biochem.

6785 DNA Microarray Technology G M 1

Covers the major areas of microarray technology, including theory, target preparation and labeling, manufacturing methods, imaging, and analysis and mining of data. Offered every other year.

Prereq: BioChem 511 or equiv. Not open to students with credit for 785.

6850 Research in Progress Seminars G 1

Seminar presentations from faculty laboratories of ongoing research.

Prereq: Grad standing. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

7050 Neurobiology of Disease G 3

Neurobiology of Disease will explore the basis of major diseases affecting the nervous system.

Prereq: Grad standing. Not open to students with credit for BioPhrm 705 or BioPhrm 706. Cross-listed in NeuroSc 705.

7193.01 Individual Studies in Pharmacology G 1 - 30

Digital pharmacodynamics; neuropharmacology; endocrine pharmacology; cardiovascular pharmacology, autonomic pharmacology, clinical pharmacology, biochemical pharmacology; pharmacogenomics; toxicology.

Prereq: Permission of instructor. Repeatable. This course is graded S/U.

7510 Professional and Ethical Issues in Biomedical Sciences G 2

A discussion course based on case scenarios dealing with ethical issues facing biomedical researchers, such as publishing practices, confidentiality, mentoring.

Prereq: Grad standing, and enrollment in Biomedical Sciences program. This course is graded S/U. Cross-listed in VetBiog 751.

7550 Research Applications of Clinical Pharmacology G 3

Application of basic and advanced concepts in pharmacology to contemporary research literature to solidify understanding of the pharmacologic principles underlying the individualization of drug therapy and contemporary drug development. Fundamentals of clinical pharmacology for the development, evaluation, and clinical use of pharmaceutical products.

Prereq: 5600, MPHSc 5510, Phr 5010, or other general pharmacology course; or permission of instructor. Cross-listed in Phr.

7560 Clinical Trials I: Design and Regulation G 3

This course provides a fundamental overview of clinical trial design, methods, and regulation with an emphasis on medical product development, clinical trial protocols, predicacl research requirements, and the appraisal of published clinical trials.

Prereq: Enrollment in the MS Pharmacology program, or permission of instructor. Not open to students with credit for Nursing 7770 or Phr 7770. Cross-listed in Nursing and Phr.
54 Biology

1110 Biology for the Health Sciences U 4
A survey of biological topics including evolution; structure and function; information flow, exchange and storage; pathways and transformations of energy and matter; and systems intended as preparation for Pre-Nursing and Pre-HRS students. Not intended for students on a Pre-Medicine or related track, or for students intending to major in biology or related areas. Prereq: Not open to students with credit for 1101, 1102, 1113, or 1114. GE nat sci bio course.

1113 Biological Sciences: Energy Transfer and Development U 4
Exploration of biology and biological principles; evolution and the origin of life, cellular structure and function, bioenergetics, and genetics. A broad introduction to biology comprises both Biology 1113 and 1114. Prereq: Math 1130 (130), 1148, 1150, or above, or Math Placement Level L or M. Prereq or concur: Chem 1110 (101), 1210 (121), 1610, or 1910H (201H), or permission of course coordinator. Not open to students with credit for 113. This course is available for EM credit. GE nat sci bio course. NS Admis Cond course.

1113E Biological Sciences: Energy Transfer and Development U 4
Exploration of biology and biological principles; evolution and the origin of life, cellular structure and function, bioenergetics, and genetics. A broad introduction to biology comprises both Biology 1113E and 1114E. Prereq: Honors standing; and Math 1149 or 1150 or above, or Math Placement Level L. Prereq or concur: Chem 1210, 1610, or 1910H, or permission of course coordinator. GE nat sci bio course.

1113H Biological Sciences: Energy Transfer and Development U 4
Exploration of biology and biological principles; evolution and the origin of life, cellular structure and function, bioenergetics, and genetics. A broad introduction to biology comprises both Biology 1113H and 1114H. Prereq: Honors standing; and Math 1149 or 1150 or above, or Math Placement Level L. Prereq or concur: Chem 1210, 1610, or 1910H, or permission of course coordinator. Not open to students with credit for 115H. GE nat sci bio course. NS Admis Cond course.

1114 Biological Sciences: Form, Function, Diversity, and Ecology
Exploration of biology and biological principles; evolution and specialization, diversity in structure, function, behavior, and ecology among prokaryotes and eukaryotes. A broad introduction to biology comprises both Biology 1113 and 1114. Prereq: Math 1130 (130), 1148, or 1150, or above, or Math Placement Level L or M. Prereq or concur: Chem 1110 (101), 1210 (121), 1610, or 1910H (201H), or permission of course coordinator. Not open to students with credit for 114. This course is available for EM credit. GE nat sci bio course. NS Admis Cond course.

1114E Biological Sciences: Form, Function, Diversity, and Ecology
Exploration of biology and biological principles; evolution and specialization, diversity in structure, function, behavior, and ecology among prokaryotes and eukaryotes. A broad introduction to biology comprises both Biology 1113E and 1114E. Prereq: Honors standing; and Math 1149, 1150, or above, or Math Placement Level L. Prereq or concur: Chem 1210, 1610, or 1910H, or permission of course coordinator. GE nat sci bio course.

1114H Biological Sciences: Form, Function, Diversity, and Ecology
Exploration of biology and biological principles; evolution and specialization, diversity in structure, function, behavior, and ecology among prokaryotes and eukaryotes. A broad introduction to biology comprises both Biology 1113H and 1114H. Prereq: Honors standing; and Math 1149, 1150, or above, or Math Placement Level L. Prereq or concur: Chem 1210 (121), 1610, or 1910H (201H), or permission of course coordinator. Not open to students with credit for 116 or 116H. GE nat sci bio course. NS Admis Cond course.

1131 Peer Led Team Learning for Biology 1113 Students U 1
Peer-led team learning (PLTL) provides a structure within which students will actively work together in groups to complete a series of activities and deepen their understanding of concepts associated with Biology 1113. A peer leader will work with the group on challenging and relevant activities to prepare biology students to apply scientific reasoning to authentic problems. Concur: Biology 1113. This course is graded S/U.

1141 Peer Led Team Learning for Biology 1114 Students U 1
Peer-led team learning (PLTL) provides a structure within which students will actively work together in groups to complete a series of activities and deepen their understanding of concepts associated with Biology 1114. A peer leader will work with the group on challenging and relevant activities to prepare biology students to apply scientific reasoning to authentic problems. Concur: 1114. This course is graded S/U.

2194 Group Studies U 1 - 4
Group study of a selected topic in biology not provided by other courses. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 4 completions.

2200 Genome Biology U 1
DNA sequencing and analysis of bacteriophage genomes. Special emphasis on mycobacteriophage as part of the Howard Hughes Medical Institute National Genomics Research Initiative. Prereq: 1113 (with participation in the Howard Hughes Medical Institute National Genomics Research Initiative), or permission of instructor. Cross-listed in Micro.

2797 Study at a Foreign Institution U 1 - 10
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Prereq: Permission of advisor. Repeatable to a maximum of 30 or hrs or 8 completions.

3401 Integrated Biology U 4
A case studies approach is used to gain a better understanding of biological concepts and principles. This course is designed for biology majors. Prereq: 1113, 1114, Chem 1220, and Math 1140, or 1148 and 1149, or 1150 or above; or permission of instructor.

4191 Internship in Biology U 1 - 5
A cooperative education or internship assignment conducted under the supervision of a faculty member. Prereq: Permission of instructor. Repeatable to a maximum of 8 cr hrs or 8 completions. This course is graded S/U.

4193 Individual Studies U 1 - 5
A program of individual study in the biological sciences appropriate for the student's needs. Prereq: Permission of instructor. Repeatable to a maximum of 12 or hrs or 12 completions. This course is graded S/U.

4194 Group Studies U 2 - 4
Group studies of topics not otherwise offered in Biology. Prereq: Permission of instructor. Repeatable to a maximum of 15 or hrs or 7 completions.

4797 Study at a Foreign Institution U 1 - 15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Prereq: Permission of advisor. Repeatable to a maximum of 30 or hrs or 8 completions.

4798 Biological Roots in England U 3
A short-term study-abroad course on the history of science in England, with emphasis on biology. Prereq: 6 cr hrs taken in Biological Sciences. Not open to students with credit for 500.

4998 Research U 1 - 5
Undergraduate research in biology. Prereq: Permission of advisor. Repeatable to a maximum of 30 or hrs or 8 completions. This course is graded S/U.

4998H Honors Undergraduate Research U 1 - 5
Undergraduate research in biology. Prereq: Honors standing, and permission of advisor. This course is graded S/U.

4999 Thesis Research U 1 - 5
A program of individual research in the biological sciences appropriate for the student's needs and culminating in a thesis and oral examination. Prereq: 1113 (113) or 1113H (115H), and 1114 (114) or 1114H (116H), and permission of advisor. Repeatable to a maximum of 12 cr hrs or 8 completions. This course is graded S/U.

4999H Honors Thesis Research U 1 - 5
A program of individual research in the biological sciences appropriate for the student's needs and culminating in an honors thesis and oral examination. Prereq: Honors standing, and 1113 (113) or 1114 (114), and permission of advisor. Repeatable to a maximum of 12 or hrs or 8 completions. This course is graded S/U.

5001.01 Topics in Biology Teaching U G 1
Students actively participate in workshops and other activities, including the development of new instructional materials and SOTL projects, that enhance their preparedness for college teaching. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

5001.02 Topics in Biology Teaching U G 1
Students actively participate in workshops and other activities, including the development of new instructional materials and SOTL projects, that enhance their preparedness for college teaching. Students will complete a portfolio assignment. Students in the Graduate Interdisciplinary Specialization will be able to apply each instance of this course as an elective that work. Prereq: Grad standing in BioSci. Not open to students with credit for Biology 701.

5193 Graduate Independent Studies G 1 - 4
Graduate independent studies. Repeatable to a maximum of 4 or hrs or 4 completions. This course is graded S/U.

Biomedical Engineering

2000 Introduction to BME U 3
Introduction to the application of engineering to modern healthcare utilizing lectures from engineering, medicine, and life science. Prereq: Permission of instructor. Not open to students with credit for 202 or 500.
2001 Professional Development U 1
Development of professional skills; engineering economy; project planning; ethics, best business practices.
Prereq or concur: 2000. Not open to students with credit for 4900.

2193 Individual Studies in Biomedical Engineering U 1 - 12
Provides the opportunity to pursue special studies or research in biomedical engineering not otherwise covered.
Prereq; Permission of instructor. Repeatable to a maximum of 12 cr hrs or 10 completions. This course is graded SU.

2194 Group Studies in Biomedical Engineering U 1 - 6
Provides groups of students opportunities to pursue special studies not otherwise offered.
Prereq; Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

2200 Quantitative Principles of Cellular and Molecular Systems U 3
An introduction to quantitative principles in molecular and cellular biology in the context of potential biomedical engineering applications. Topics covered: molecular structure and function; receptor-ligand and antigen-antibody specificity; cell energetics; enzyme catalysis; genetic information, disease state; Cell-surface interaction.

2700 Numerical Simulations in BME U 2
Focuses on the application of computer-based numerical and graphical display skills for solving problems relevant to biomedical engineering.
Prereq; 2000, Eng 1182 or 1282, MechEng 2040, Math 2174, and Biology 1113 or equiv, and enrollment in BiomedE major.

2800 Anatomy for Engineers U 3
This course investigates the basic anatomical structure and physiological function of the human body with a biomechanical emphasis.
Prereq; Enrollment in Biomedical Engineering pre-major or major; or permission of instructor.
Not open to students with credit for Anatomy 2220.

3701 Biomedical Engineering Domain Lab U 2
Laboratory course for Biomedical Engineering majors. Biomedical laboratory skills, as well as designing, performing and analyzing experiments, documentation, and technical communication skills are developed in this course.
Prereq; 2000 and Stat 3450; or permission of instructor. Not open to students with credit for 4711, 4712, 4713, 4714, 4715, or 4716.

3702 Measurements and Instrumentation Lab U 3
Introduces students to the mathematical and numerical techniques used to develop, solve and analyze quantitative models of physiological systems.
Prereq; 2700, Anatomy 2220, and Math 2174; or permission of instructor.

4110 Biomechanics U 3
Introduction to measurement techniques like x-ray, computed tomography, magnetic resonance and ultrasound.
Prereq; 2000, Physics 1251, Math 2174, Anatomy 2220 or ECEB 2520; or permission of instructor.

4193 Individual Studies in Biomedical Engineering U 1 - 12
Provides the opportunity to pursue special studies or research in biomedical engineering not otherwise covered.
Prereq; Permission of instructor. Repeatable to a maximum of 12 cr hrs or 10 completions. This course is graded SU.

4194 Group Studies in Biomedical Engineering U 1 - 6
Provides groups of students opportunities to pursue special studies not otherwise offered.
Prereq; Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

4210 Biotransport U 3
Covers transport concepts in biomedical engineering. Emphasis is put on mass and momentum transport with applications related to biology, medical science and biotechnology.
Prereq; 2000 and Math 2174, or permission of instructor. Concur: MechEng 3500 or FABEng 3120.

4310 Biomaterials U 3
Principles of materials science; biocompatibility and biological reactions to implanted materials; natural biomaterials and synthetic materials used in biological applications.
Prereq; 2000, Math 2174, and MechEng 2040; or permission of instructor.

4410 Biomechanics U 3
Mechanical characterization of biological tissues at the cellular, organ, and system level; exploration of biomechanical factors of physiological and pathological conditions.
Prereq; 2000, Math 2174, and MechEng 2040; or permission of instructor.

4510 Cell, Molecular, and Tissue Engineering U 3
Application of engineering methods to study, measure, repair, or replace biological functions and the molecular or tissue-level length scales.
Prereq; 2000 and Math 2174, or permission of instructor. Concur: 2200 or Biochem 4511.

4610 Biomedical Micro/Nanotechnology U 3
Introduction to micro/nanotechnology in biomedical settings, including micro/nanotechnologies used to investigate biological systems, physiological responses to nanotherapeutics, and first principles of microfluidics and microfabrication.
Prereq; 2000, MatSciEn 2010, and Biochem 4511 or BiomedE 2200; or permission of instructor.

4711 Bioimaging Lab U %
Hands-on lab that teaches students technical skills associated with Bioimaging. Lab components include hypothesis testing and analysis, computer simulation, lab safety and instrument training, and technical communication.
Concur: 4110, or permission of instructor.

4712 Biotransport Lab U %
Hands-on lab that teaches students technical skills associated with Biotransport. Lab components include hypothesis testing and analysis, computer simulation, lab safety and instrument training, and technical communication.
Concur: 4210, or permission of instructor.

4713 Biomaterials Lab U %
Hands-on lab that teaches students technical skills associated with Biomaterials. Lab components include hypothesis testing and analysis, computer simulation, lab safety and instrument training, and technical communication.
Concur: 4310, or permission of instructor.

4714 Biomechanics Lab U %
Hands-on lab that teaches students technical skills associated with Biomechanics. Lab components include hypothesis testing and analysis, computer simulation, lab safety and instrument training, and technical communication.
Concur: 4410, or permission of instructor.

4715 Molecular, Cell, and Tissue Engineering Lab U %
Hands-on lab that teaches students technical skills associated with Cell and Tissue Engineering. Lab components include hypothesis testing and analysis, computer simulation, lab safety and instrument training, and technical communication.
Concur: 4510, or permission of instructor.

4716 BME Micro/Nanotechnology Lab U %
Hands-on lab that teaches students technical skills associated with BME Micro/Nanotechnology. Lab components include hypothesis testing and analysis, computer simulation, lab safety and instrument training, and technical communication.
Concur: 4610, or permission of instructor.

4901 Biomedical Engineering Capstone Design I U 3
First course in a two-course BME capstone sequence. Introduction to design principles; challenges of biomedical device design; projects focus on helping persons with disabilities.
Prereq; Sr standing in BiomedE. Not open to students with credit for 501 or 565.01.

4902 Biomedical Engineering Capstone Design II U 3
Second course in a two-course BME capstone sequence. Applying design principles; challenges of biomedical device design; engineering and testing devices that focus on helping persons with disabilities.
Prereq; 4901, or permission of instructor. Not open to students with credit for 502 or 565.02.

4998.01 Undergraduate Research in Biomedical Engineering U 1 - 6
Individual Studies in Biomedical Engineering.
Prereq; Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

4998.02 Undergraduate Research in Biomedical Engineering U 1 - 12
Individual Studies in Biomedical Engineering.
Prereq; Permission of instructor. Repeatable to a maximum of 12 cr hrs or 10 completions. This course is graded SU.

4999 Biomedical Engineering Undergraduate Thesis U 1 - 6
Research Students are offered the opportunity to pursue an independent distinction project/research. Student presentations and thesis writing included.
Prereq; Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

5001 Cardiovascular Bioengineering U G 3
Overview of biomedical engineering approaches in imaging and intervention in cardiovascular medicine.
Prereq; Sr or Grad standing in Engineering or Medicine, or permission of instructor. Not open to students with credit for 701.
Biomedical Engineering

5110 Biomedical Microscopic Imaging U G 3
Principles and applications of microscopy techniques (light, electron and atomic force microscopy) for biomedical research.
Prereq: 4110 or equiv, and Sr standing; or Grad standing; or permission of instructor. Not open to students with credit for 611.

5120 Biomedical Optics U G 3
Introduction of light-tissue interaction, optical imaging, and spectroscopy.
Prereq: 4110 or equiv, and Sr standing; or Grad standing; or permission of instructor. Not open to students with credit for 612.

5170 Fundamentals of Medical Imaging U G 3
Fundamentals of mathematical and physical principles and signals and systems concepts involved in medical imaging modalities of x-ray, computed tomography, magnetic resonance and ultrasound.
Prereq: Math 2177, or Grad standing, or permission of instructor.

5177 Biomedical Atomic Force Microscopy U G 3
Applications of Atomic Force Microscopy (AFM) in bio-imaging, biomechanics, and nanomanipulation.
Prereq: 5110 (611) or equiv, and Sr or Grad standing; or permission of instructor.

5186 Biomedical Ultrasound U G 3
Introduction to use of ultrasound in biomedical applications, including interaction of ultrasound with tissue; generation, reception and interpretation of ultrasonic signals; and clinical instrumentation.
Prereq: 4110 or equiv, and Sr standing; or Grad standing; or permission of instructor. Not open to students with credit for 686 or 716.

5193 Individual Studies in Biomedical Engineering U G 1-12
Provides the opportunity to pursue special studies or research in biomedical engineering not otherwise covered.
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 10 completions. This course is graded S/U.

5194.01 Group Studies in Biomedical Engineering U G 1-6
Provides groups of students opportunities to pursue special studies not otherwise offered.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

5194.02 Group Studies in Biomedical Engineering U G 1-6
Provides groups of students opportunities to pursue special studies not otherwise offered.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

5194.03 Group Studies in Biomedical Engineering U G 1-6
Provides groups of students opportunities to pursue special studies not otherwise offered.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

5194.04 Group Studies in Biomedical Engineering U G 1-6
Provides groups of students opportunities to pursue special studies not otherwise offered.
Prereq: Permission of instructor. Not open to students with credit for 510. Repeatable to a maximum of 10 cr hrs or 10 completions.

5194.05 Group Studies in Biomedical Engineering U G 1-6
Provides groups of students opportunities to pursue special studies not otherwise offered.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

5194.06 Group Studies in Biomedical Engineering U G 1-6
Provides groups of students opportunities to pursue special studies not otherwise offered.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

5194.07 Group Studies in Biomedical Engineering U G 1-6
Provides groups of students opportunities to pursue special studies not otherwise offered.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

5194.08 Group Studies in Biomedical Engineering U G 1-6
Provides groups of students opportunities to pursue special studies not otherwise offered.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

5194.09 Group Studies in Biomedical Engineering U G 1-6
Provides groups of students opportunities to pursue special studies not otherwise offered.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

5310 Advanced Biomaterials U G 3
Basic and advanced concepts of materials science; biocompatibility and biological reactions to implanted materials; natural biomaterials and synthetic materials used in biomedical applications.
Prereq: 4310 or equiv, and Sr standing; or Grad standing; or permission of instructor. Not open to students with credit for 631.

5353 Hard-Tissue Biomaterials U G 3
In-depth literature review of selected current concepts in the material science of hard tissues and related implant materials.
Prereq: 5310, or permission of instructor. Not open to students with credit for 733.

5359 Extracellular Matrix in BME U G 3
Extracellular matrix (ECM) present in mammalian tissue(s) is important for the integrity and tensile strength of the underlying tissue as well as for cell-matrix interactions and matrix mineralization. This course provides an overview of the composition, structure and function of ECM and its application(s) for the BME domains of biomaterials, tissue engineering and biomechanics.
Prereq: 4310 and Chem 2310; or Grad standing; or permission of instructor. Not open to students with credit for 632 or 739.

5420 Mechanobiology U G 3
Introduction to the incorporation of living components and compatible biomaterials to study, repair, or replace biological functions.
Prereq: 4410, and Sr standing; or Grad standing; or permission of instructor. Not open to students with credit for 642.

5421 Tissue Mechanics U G 3
Mechanical characteristics and behavior of tissues at the organ and system level and how these properties relate to physiological and pathological function.
Prereq: 4410 or equiv, and Sr or Grad standing; or permission of instructor. Not open to students with credit for 641 or 741.

5430 Finite Element Applications in BME U G 3
The finite element method for solution of differential equations for modeling biomedical engineering applications (implemented using COMSOL Multiphysics software).
Prereq: Math 2177 or equiv, and Anatomy 2220 or equiv, and Sr or Grad standing; or permission of instructor. Not open to students with credit for 643.

5470 Cell & Tissue Mechanics U G 3
This course will focus on the application of mechanics to biological cells and tissues. We will explore experimental methods used to measure mechanical properties of cells and tissues and mathematical models used to interpret experimental observations of cell and tissue mechanics. Computational mechanics and FE models will be used to investigate cell and tissue mechanics.
Prereq: 4410, and MechEng 2040, and Sr or Grad standing; or Grad standing; or permission of instructor. Not open to students with credit for 740.

5510 Advanced Tissue Engineering U G 3
The incorporation of living components and compatible biomaterials to study, repair, or replace biological functions.
Prereq: 4510 or equiv, and Sr or Grad standing; or permission of instructor. Not open to students with credit for 651.

5550 Engineering Principles in Cancer U G 3
The purpose of this course is to introduce engineering principles in the context of cancer progression and therapy.
Prereq: MechEng 3510, 3503, or CBE 3420; or permission of instructor. Not open to students with credit for CBE 5550 or MechEng 5550. Cross-listed in CBE and MechEng.

5560 Biomedical Engineering Applications in Cancer Biology U G 3
Introduction to cancer biology and the application of biomedical engineering disciplines, such as biomaterials, biomechanics, biomasaging, cell and tissue engineering, to fundamental and applied cancer research.
Prereq: Biology 1113; and BiomedE 4110, or 4310, or 4410, or 4510; or permission of instructor.

5580 Excitable Cell Engineering U G 3
Quantitative approaches to understanding excitable cell function. Advanced engineering methods applied to study these specialized cells will be addressed.
Prereq: Math 415 or equiv, and EEB 3510 (415) or equiv; or Grad standing in BiomedE; or permission of instructor.

5610 Biomedical Microdevices U G 3
Course covers the application of microdevices for biomedical applications, including review of microfabrication and biophysical chemistry. Discussion and analysis of current research.
Prereq: 4610 or equiv, or Grad standing; or permission of instructor. Not open to students with credit for 651 or 762.

5635 Cellular Nanotechnology U G 3
Application of nanotechnology to cells for sensing and subcellular manipulation. Synthesis and biological modification of quantum dots and magnetic nanostructures, their unique material properties, and their application.
Prereq: Sr or Grad standing in Engineering; or permission of instructor. Not open to students with credit for 765 or ChBE 735. Cross-listed in CBE and ChBE.

5639 Medical Device Development and Regulation U G 3
Basic principles and essential steps for medical device design and commercialization.
Prereq: 2000, and Sr or Grad standing; or Grad standing; or permission of instructor.

5661 Biomedical Nanotechnology U G 3
Survey of biomedical micro and nanotechnology with particular emphasis on design and construction strategies for therapeutic nanodevices incorporating biological components.
Prereq: 4610 or equiv, and Sr standing; or Grad standing; or permission of instructor. Not open to students with credit for 761. Cross-listed in CBE 5769.
Introduction to Microfluidics and Nanofluidics U G 3
Principles of incompressible fluid mechanics and electrokinetic phenomena at the micro and nanoscale; biomedical applications with a laboratory introducing fabrication techniques and experimental methods.
Prereq: MechEng 3503 or equiv, or Grad standing, or permission of instructor. Not open to students with credit for 763 or MechEng 715. Cross-listed in MechEng 6515.

BioMEMS Microfabrication U G 3
A detailed overview of microfabrication technologies, including silicon microfabrication, polymer microfabrication, and advanced microfabrication topics, with application to specific MEMS and BioMEMS devices.
Prereq: Sr or Grad standing in Engineering, or permission of instructor.

Biomedical Microtransducers U G 3
Examination of the Micro-Electro-Mechanical-Systems (MEMS) as a tool for detecting signals or performing functions for biomedical research and clinical purposes.
Prereq: Sr or Grad standing in Engineering, or permission of instructor. Not open to students with credit for 768.

Biomedical Industry and Professionalism Seminar U G 1
Seminar series for medical product industry. Speakers will be invited from companies relevant to medical product development and industry. Students will also gain skills in professional etiquette, and creating a design portfolio and resume for internships and careers in medical product development.
Prereq: Sr or Grad standing in Engr, or permission of instructor. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

Medical Product Development I U G 3
First course in a two-course sequence, focused on taking a medical product or device from concept/prototype to commercialization. Topics include medical product or device testing, IP protection, business models, manufacturability, FDA approvals, and commercialization.
Prereq: 4902, Engr 5902.02H, or equiv.; and permission of instructor.

Medical Product Development II U G 3
Second course in a two-course sequence, focused on taking a medical product or device from concept/prototype to commercialization. Topics include medical product or device testing, IP protection, business models, manufacturability, FDA approvals, and commercialization.
Prereq: 5901, or permission of instructor.

Scientific Methods in Biomedical Engineering G 1
Instruction on basic concepts and skills necessary for graduate students in Biomedical Engineering including literature search, proposal preparation, critical evaluation, and research presentation.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 600.

Research Ethics G 2
Introduction to professional and ethical issues confronting biomedical research and researchers and approaches to dealing with such issues.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 883.

Biomedical Engineering Research for Thesis G 1 - 16
Research for thesis purposes only.
Prereq: Permission of Instructor. Repeatable. This course is graded S/U.

Individual Studies in Biomedical Engineering G 1 - 16
Provides the opportunity to pursue special studies or research in biomedical engineering not otherwise covered.
Prereq: Permission of Instructor. Repeatable. This course is graded S/U.

Group Studies in Biomedical Engineering G 1 - 6
Provides groups of students opportunities to pursue special studies not otherwise offered.
Prereq: Permission of Instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

Biomedical Engineering Seminars I G 0
First course in two course sequence. Seminar series for introducing the state-of-the-art development of biomedical engineering.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 881.02, or 881.03. This course is progress graded (S/U).

Biomedical Engineering Seminars II G 1
Second course in two course sequence. This is a seminar series for introducing the state-of-the-art development of biomedical engineering.
Prereq: 8810 (881.01 or 881.02), or permission of instructor. Not open to students with credit for 881.03. This course is graded S/U.

Biomedical Engineering Seminars III G 0
Seminar series for introducing the state-of-the-art development of biomedical engineering.
Prereq: 8811 or 881.03, or permission of instructor. Not open to students with credit for 881.04 or 881.05. This course is progress graded (S/U).

Biomedical Engineering Seminars IV G 1
Second course in two course sequence. This is a Seminar series for introducing the state-of-the-art development of biomedical engineering.
Prereq: 8812 (881.04 or 881.05), or permission of instructor. Not open to students with credit for 881.06. This course is graded S/U.

Biomedical Engineering Research for Dissertation G 1 - 16
Research for dissertation purposes only.
Prereq: Permission of instructor. Repeatable. This course is graded S/U.

Introduction to Biomedical Informatics U G 3
A survey of biomedical informatics theories and methods employed in the design, implementation and management of information systems supporting basic science, clinical and translational research, clinical care, and public health. Recommended course work in computer science, statistics, anatomy, physiology, and medical terminology.
Prereq: Not open to students with credit for 710.

Introduction to Bioinformatics U G 3
Introduces students to basic topics of bioinformatics including sequence analyses, proteomics, microarrays, regulatory networks, sequence and protein databases. Recommended background in molecular biology and computer science.
Prereq: Not open to students with credit for ISP 730.

Introduction to Research Informatics U G 3
A survey of biomedical informatics theories and methods employed in the design, implementation and management of clinical and translational research programs.
Recommended experience with computer science, statistics, anatomy, medical terminology, and molecular biology.

Methods in Biomedical Informatics U G 3
An intensive, application-oriented survey of methods used during the course of the design, implementation and evaluation of BMI platforms, including clinical info systems, decision support systems, databases, elec, data capture instruments, data visualization tools and other analytical "pipelines". These methods span a broad spectrum from information needs assessments to systems evaluation.
Prereq: Basic knowledge of the following areas - basic computer science principles (logic, procedural and/or object oriented programming, data structures and algorithms), statistical methods, and medical terminology.

Public Health Informatics U G 3
Introduction to the emerging and critical field of Public Health informatics. This course will highlight the history, current and future use of informatics in the public health settings, and give students an understanding of the role and broad application of informatics to promoting health and preventing disease.
Cross-listed in PubHlth.

Health Analytics: Data to Discovery to Dissemination U G 3
Health Analytics is the science of analyzing health data for knowledge discovery and decision making. The sheer diversity of data types in health care settings results in what scholars call a DRIP environment: Data Rich-Information Poor. Data has become ubiquitous in healthcare settings from clinical decision making to operational/business planning; health decisions are now being made similarly. No programming experience is required, but students are expected to vigorously engage in their own learning and parts of courses will require that students use and adapt to tools demonstrated during class.

Programming for Biomedical Informatics U G 3
This course will offer the foundational and working knowledge, skills and tools for programming for biomedical informatics. Biomedical informatics is a field that leverages complex and heterogeneous data. Working with these data requires knowledge of multiple programming languages and software in order to take advantage of existing tools and eventually build new tools.

Individual Studies in Biomedical Informatics U G 1 - 15
Enables graduate students to do research projects with faculty other than their adviser.
Prereq: Permission of instructor. Repeatable to a maximum of 60 cr hrs or 4 completions. This course is graded S/U.

Clinical Informatics G 3
This course provides training in the theories, methods, and application of clinical informatics (CI). CI is the field concerned with the use of data and information technology applied to the delivery of healthcare services. CI has a wide array of healthcare delivery application areas in the clinical domain, including: pharmacy, nursing, and patient care operational areas. There are no formal prerequisite course requirements, but a familiarity with United States healthcare delivery and medical terminology is strongly encouraged.

Metabolomics, Principles and Practice G 3
Introduces students to the principles and practice of metabolomics. Metabolomics is the study of the totality of small molecules existing within a system. We will focus here on the application of metabolomics to plant, food, nutrition and health-related research, although concepts are applicable to other disciplines.
Prereq: Permission of instructor. Cross-listed in FdScTe, HCS, and HumnNtr.

Design and Methodological Approaches in Biomedical Informatics G 3
An introduction to research design and methods in Biomedical Informatics. It is organized around elements of proposal writing, grant writing, and study design. We will be surveying aspects of research, including the formulation of research questions, testable hypotheses, the selection of appropriate research designs and methods, data collection and analysis.
58  Biomedical Informatics

7830  Systems Biology  G  3
Critical analysis of experiments in systems biology.
Prereq: 730 or BGSP 705, or permission of instructor. Not open to students with credit for 830.

7891  Seminar in Biomedical Informatics  G  1
Faculty, trainees, and outside speakers will give presentations on current biomedical informatics (BMI) and BMI-related research and theory. Alternate classes will consist of journal-style discussions moderated by faculty.
Prereq: Permission of instructor. Not open to students with credit for 881. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

7999  Thesis Research in Biomedical Informatics  G  1 - 15
Research for thesis purposes only.
Prereq: Permission of instructor. Repeatable to a maximum of 99 cr hrs or 20 completions. This course is graded S/U.

8030.01  Special Topics in BMI: Computational Biology and Bioinformatics  G  1 - 5
This is an advanced discussion-based seminar exploring new methods, technologies, and research in computational biology and bioinformatics.
Prereq: Grad standing in a graduate program of study and permission of the instructor. Repeatable to a maximum of 27 cr hrs or 9 completions.

8040.01  Special Topics in BMI: Clinical and Translational Informatics  G  1 - 5
This is an advanced discussion-based seminar exploring new methods, technologies, and research in clinical and translational informatics.
Prereq: Grad standing in a master, doctoral, or professional program; and permission of the instructor. Repeatable to a maximum of 27 cr hrs or 9 completions.

8050.01  Special Topics in BMI: Data Science  G  1 - 5
This is an advanced discussion-based seminar exploring new methods, technologies, and research in biomedical data analytics and data science.
Prereq: Graduate standing in a master, doctoral, or professional program; and permission of the instructor. Repeatable to a maximum of 27 cr hrs or 9 completions.

8130  Analysis and Applications of Genome-Scale Data  G  3
This course introduces trainees to the fundamental algorithms needed to understand and analyze genome-scale expression data sets. The course will cover three major kinds of applications: Class Comparison, Class Discovery, and Class Prediction. We will also discuss methods for cross-validation and independent validation of predictive models. R software environment will be introduced and utilized.

8140  Measuring patient experience and preferences  G  3
This course will cover theory and concepts of empirical tools to describe disease burden, health state utilities, patient reported outcomes, patient experience, and patient preferences, important policy contexts that govern the study of patient preferences (e.g. regulatory, pricing/reimbursement) and good research practice documents that guide empirical studies of the patient experience.

8150  Rigorous and Reproducible Design and Data Analysis  G  3
Students will learn to: computationally analyze datasets using best practices in experimental design and analysis; use the R language to analyze datasets from transcriptome, genome, and clinical studies; use examples from experimental design literature that are rigorous and with built-in flaws; identify sources of bias and the impact these have on results/conclusions.
This course is graded S/U.

8193  Individual Studies in Biomedical Informatics  G  1 - 5
Graduate study of a selected topic.
Prereq: Grad standing and permission of instructor. Repeatable to a maximum of 27 cr hrs or 9 completions. This course is graded S/U.

8999  Research in Biomedical Informatics  G  1 - 15
Research for thesis or dissertation purposes only.
Prereq: Permission of instructor. Repeatable to a maximum of 99 cr hrs or 20 completions. This course is graded S/U.

Biomedical Science

1100  Biomedical Science Survey  U  1
Introduction to the Biomedical Science major and College of Medicine. Emphasis on academic requirements and resources, career exploration, university policies, and student rights and responsibilities.
Prereq: Enrollment in Biomedical Sciences major, or permission of instructor. Not open to students with credit for 100.

2891H  Mastering the Biomedical Literature I  U  2
First course in a two semester series. Includes searching for, organizing, and analyzing the biomedical literature for applications in biomedical research and scholarly communication.
Prereq: Honors standing, and Biomedical Science Major; or permission of instructor. Not open to students with credit for 220.01H or 220.02H.

2892H  Mastering the Biomedical Literature II  U  2
Second course in a two semester series analyzing the biomedical literature. Designed in two week blocks to read an original paper in depth, and then to meet and discuss the work with the author.
Prereq: Honors standing, 2891H, and a Biomedical Science Major; or permission of instructor.

2900H  Biomedical Science Laboratory Techniques  U  2
Lab exercises to teach the theory and practice of basic techniques in cell and molecular biology; including tissue isolation, protein analysis, microscopy, DNA isolation, PCR, bacterial and mammalian cell transfactions, and product analysis.
Prereq: Honors standing, Biology 1113 & 1114 or equivalent, General Chemistry or equivalent, and a Biomedical Science Major; or permission of instructor. Not open to students with credit for 480H.

3193  Individual Studies  U  1 - 4
An individualized program of study or research experience for BMS students.
Prereq: A Biomedical Science Major, or permission of instructor. Repeatable to a maximum of 20 cr hrs or 5 completions. This course is graded S/U.

3194  Group Studies  U  1 - 4
A specially designed program of study for BMS students.
Prereq: A Biomedical Science Major, or permission of instructor. Repeatable to a maximum of 20 cr hrs or 5 completions. This course is graded S/U.

3891H  Biomedical Science Research Experience I  U  5
An intensive research experience for BMS students. Students spend 20-25 hrs/wk in a research lab. Class meetings for three oral presentations and written reports of 1) the lab, 2) an experimental technique, and 3) a formal research proposal.
Prereq: Honors standing. Not open to students with credit for 720.01, 720.02, or 720.03.

3892H  Biomedical Science Research Experience II  U  5
An intensive research experience for BMS students. Students spend 20-25 hrs/wk in a research lab. Class meetings for three oral presentations and written reports of 1) Journal Club article, 2) a poster presentation, and 3) a final report.
Prereq: Honors standing. Not open to students with credit for 720.01, 720.02, or 720.03.

3998  BMS Undergraduate Research  U  1 - 4
Undergraduate research in Biomedical Science Laboratory.
Prereq: A Biomedical Science Major, or permission of instructor. Repeatable to a maximum of 50 cr hrs or 5 completions. This course is graded S/U.

4200H  Concepts in Healthcare I: Humanistic and Social Issues in Medicine & Biomedical Science  U  3
Experiential initiation into the humanistic aspects of patient centered medicine for seniors in the Biomedical Science major. Communication process between patient and professional, between professionals, team work & leadership in medicine examined.
Prereq: Honors standing, and a Biomedical Science Major, or permission of instructor. Not open to students with credit for 521, 522, or 523.

4210H  Concepts in Healthcare II: Introduction to Health Policy and Leadership in Healthcare  U  3
Students will examine the political, social, and economic forces that have shaped health policy in the U.S. and the basic concepts of leadership in preparation for a career in a health care profession, biomedical research, or other careers.
Prereq: Honors standing, and a Biomedical Science Major; or permission of instructor. Not open to students with credit for 521, 522, or 523.

4610H  Special Topics in Biomedical Science I: Immunology & Infectious Disease  U  3
Integrative research and application experience for seniors in the Biomedical Science major. Special topics in biomedical science combine basic science research and clinical applications to human disease processes.
Prereq: Honors standing, and a Biomedical Science Major; or permission of instructor. Not open to students with credit for 581, 582, or 583.

4820H  Special Topics in Biomedical Science II: Genetics & Neurological Disease  U  1½
Integrative research and application experience for seniors in the Biomedical Science major. Special topics in biomedical science combine basic science research and clinical applications to human disease processes.
Prereq: Honors standing, and a Biomedical Science Major; or permission of instructor. Not open to students with credit for 581, 582, or 583.

4830H  Special Topics in Biomedical Science III: Cancer Research; Bench to Bedside and Back  U  1½
Integrative research and application experience for seniors in the Biomedical Science major. Special topics in biomedical science combine basic science research and clinical applications to human disease processes.
Prereq: Honors standing, and a Biomedical Science Major; or permission of instructor. Not open to students with credit for 581, 582, or 583.

4998H  BMS Undergraduate Thesis Research  U  1 - 4
Undergraduate research in a Biomedical Science Laboratory culminating in an honors thesis and defense.
Prereq: Honors standing, and enrollment in Biomedical Sciences major, or permission of instructor. Repeatable to a maximum of 14 cr hrs or 14 completions. This course is graded S/U.

Biomedical Sciences Graduate Program
5194 Introduction to Agent-Based Modeling Using NetLogo G 3
Teaches agent-based modeling techniques using NetLogo software. Students will develop agent-based models of complex systems drawn from Ecology, Biology, Sociology, Engineering, and Business. Computer literacy is recommended. A course in deductive logic or programming recommended. Students should download NetLogo and look over documentation before class begins.

6700 Patient-Centered Research G 2
Lectures and small group discussions will cover an introduction to humanistic aspects of medical research and human experimentation, including historical, socio-political, economic, and ethical aspects. Prereq: Enrollment in College of Medicine, and permission of instructor. Repeatable to a maximum of 8 cr hrs. This course is progress graded (S/U).

7000 Concepts in Biomedical Science G 6
An exploration of selected topics in biomedical sciences, ranging from molecular and cellular to systems. An emphasis is placed on fundamental concepts and critical reading of the primary literature. The course combines traditional lectures within student presentations and weekly in-class discussions of published papers. Prereq: Enrollment in IBGP/Biomedical Sciences PhD program, or permission of instructor.

7030 Introduction to Data Science for Biological Sciences G 2
This course provides an introduction to data science practices in the area of Biological and Biomedical Research. Course covers how to develop scripts in R, Python & Bash and the fundamental of reproducible and transparent programming.

7040 Research Problem Solving in Biomedical Science G 4
Students in small groups will analyze current and classic research papers and learn how to identify the hypothesis, test the hypothesis, and whether the results support the conclusions. Prereq: 7000, or equiv, or permission of instructor. Not open to students with credit for 704.

7060 Faculty Research in Biomedical Science G 1
IBGP faculty members will present current research in their laboratories that could provide the basis for student laboratory rotations and dissertation research. Prereq: Enrollment in IBGP, or permission of program director. Not open to students with credit for 706. This course is graded S/U.

7070 Fundamentals of Grant Writing G 4
Introduce students to the basics principles of grant writing. Student must have a dissertation project about which they can write a proposal in order to enroll. Prereq: Not open to students with credit for 7070 and 7060.

7240 Molecular Pathogenesis G 3
In-depth presentation and discussion of the molecular and cellular mechanisms of pathogenesis, emphasizing current research in the field. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 724. Cross-listed in Micro 7724.

7400 Selected Topics in Microbial Pathogenesis G 2
Student led discussions of classic and current literature in microbial pathogenesis. Repeatable to a maximum of 4 cr hrs.

7402 Microbial Pathogenesis Journal Club G 2
Weekly, one student will present a current paper from the literature that represents some aspect of Host-Pathogen interactions. The presentation will include background and figures from respected top-tier journals. Prior to class, all students turn in summary of manuscript and two questions. Class grades determined by presentation evaluation, written summary of manuscript presentation and participation. Prereq or concour: 7724, or Microbi 7020, or permission of instructor.

7880 Vaccine Immunology G 1
This course explores the theory and practice of developing viral vaccines by discussion of the relevant virology and immunology. It is a combination seminar and work in progress course in which trainees present relevant recent papers as well as their own work. Discussion is encouraged led by the presenter and by the 4-8 Center faculty members who attend each presentation. Prereq: 7000. This course is graded S/U.

7900 Cancer Immunology: Critical Journal Readings G 1
Faculty, students and postdoctoral fellows will give critical interpretations of research and journal readings on cancer immunology. Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

7930 Individual Studies in Integrated Biomedical Science G 1 - 15
A research project will be assigned by a faculty member to meet the individual student's educational goals. Prereq: Enrollment in IBGP, or permission of instructor. Repeatable to a maximum of 60 cr hrs or 10 completions. This course is graded S/U.

7950 Host-Pathogen Interactions: Research Seminar G 1
Faculty, students and outside speakers will give research presentations on microbial-host interactions. Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

7960 Research Seminars in Heart and Lung Disease G 1
Faculty and outside speakers will give basic and clinical science research seminars on mechanisms of heart and lung disease. Prereq: Enrollment in IBGP, or permission of instructor. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

7972 Integrated Biomedical Science Senior Seminar G 1
Senior IBGP graduate students will present research work and be advised and critiqued by other senior students and a faculty advisor. Prereq: Enrollment in IBGP, and Grad standing. Repeatable to a maximum of 3 cr hrs.

7975 Medical Scientist Student Seminar Series G 1
The Medical Scientist Student Seminar Series is a twice monthly forum for MSTP trainees to present research-in-progress, clinical cases, or journal club to their peers. Programmatic sessions (recruitment, new initiatives, etc.) and professional development (F30/F31, career path, vertical mentoring) sessions will be integrated into the schedule each semester. Prereq: Enrollment in the Medical Scientist Training Program. Repeatable to a maximum of 10 cr hrs. This course is progress graded (S/U).

8050 Research Techniques and Resources G 4
Survey of research techniques used to solve problems in modern cell and molecular biology, immunology, biochemistry, microbiology, microscopy, laboratory safety, and related available resources. Prereq: Enrollment in IBGP, or permission of instructor. Not open to students with credit for 805.01.

8520 Career Discovery in the Biomedical Sciences G 1
Seminar topics related to career opportunities available in the biomedical sciences, as well as topics on career development tools such as CV preparation, interview strategies, networking and prioritizing commitments. Prereq: Enrollment in BSGP, or permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

8800.01 Signature Program Translational Science Curriculum G 2
“Immunology and Inflammation”
Translational Science to understand inflammatory diseases, viral diseases, cancer, and wound healing. Prereq: Enrollment in MD or DO degree program, or permission of instructor.

8800.02 Signature Program Translational Science Curriculum G 2
“Infection & HostPathogen Science”
Translational Science to understand inflammatory diseases, viral diseases, cancer, and wound healing. Prereq: Enrollment in MD or DO program, or permission of instructor. Cross-listed in IntMed.

8800.03 Signature Program Translational Science Curriculum G 2
“Regenerative Medicine & Wound Healing”
Translational Science to understand inflammatory diseases, viral diseases, cancer, and wound healing. Sum Sem. Prereq: Enrollment in MD or DO program, or permission of instructor.

8800.04 Signature Program Translational Science Curriculum “Cancer Biology & Therapeutics”
Translational Science to understand the cancer pathogenesis and the rational development of targeted therapies. Prereq: Enrollment in MD or DO degree program, or permission of instructor.

8800.05 Genomic Medicine G 3
Translational Science to understand current genomic medicine, pharmacogenomics literature, and design of genomics research projects, with emphasis on clinical applications. Prereq: Enrollment in MD or DO degree program, or permission of instructor.

8999 Research in Integrated Biomedical Science G 1 - 12
Research for dissertation purposes only. Prereq: Enrollment in IBGP, or permission of instructor. Repeatable to a maximum of 60 cr hrs or 10 completions. This course is graded S/U.

6000 Topics in Research Proposal Writing G 1
Course is designed to be a "writing lab" where students produce and critique research writing. Primarily, the focus will be proposal writing with NIH/NSF grant-writing strategies. Additional time will be devoted to developing manuscripts and poster presentations. Repeatable to a maximum of 2 cr hrs.

6697 Study at a Foreign Institution G 1 - 15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Prereq: Permission of program director. Repeatable to a maximum of 45 cr hrs or 45 completions. This course is progress graded (S/U).

6702 Advanced Experimental Methods in Biophysics G 1 - 3
Advanced Experimental Methods in Biophysics. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions.

Biophysics
**Biophysics**

6789  Free Radicals in Biomedicine  G 2
Background in free radical biology and medicine focused on biologically relevant radicals, their physiological and pathophysiologic roles and underlying physico-chemical processes. Grad credit in Biochem, Phys Chem, or Biophysics recommended. Sp Sem. Prereq: Permission of instructor (Ugrd only). Cross-listed in IntMed.

7600  First-Year Student Orientation  G 1
Orientation for first-year students in Biophysics and partner graduate programs; lectures on topics important for successful graduate experience; training in presenting scientific work; training in research ethics.
Prereq: Not open to students with credit for MCBio 7600, MolGen 7600, OSCP 7600, and Microbio 7600. This course is graded S/U. Cross-listed in MCBio, MolGen, OSCP, and Microbio.

8193  Individual Studies  G 1 - 5
Any particular subject that is not part of the regular curriculum.
Prereq: Permission of instructor and program director. Repeatable. This course is graded S/U.

8989  Research in Biophysics  G 1 - 15
Research for thesis and dissertation purposes.
Prereq: Enrollment in a Ph.D. program. Repeatable. This course is graded S/U.

8999  Research in Biophysics  G 1 - 3
Research credit for students who are post candidacy exam. Repeatable. This course is graded S/U.

**Biotechnology**

120T  Exploring Biochemical Sciences and Biotechnology  U ½
Promotes student success in college and preparation for a career; explores personal and career interests, needs, goals, and the support services available for student success.

219FT  Group Studies  U 1 - 3
Designed to give groups of students an opportunity to pursue special studies not offered in other courses.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

2218T  General and Applied Entomology  U 3
Classification, identification, life cycles, external/internal structures, and functions of insects; common insect pests and their damage; methods of control and their applications.
Prereq: Not open to students with credit for 219T or LabBioSci 219T. This course is available for EM credit.

2219T  Pesticides and their Use  U 3
A study of the classification of pesticides and their mode of action, physiological effects, persistence in the environment, benefits, hazards, use, performance and regulation.
Prereq: Not open to students with credit for 219T or LabBioSci 219T. This course is available for EM credit.

**Bosnian/Croatian/Serbian**

1101  Elementary Bosnian/Croatian/Serbian I  U 4
Introduction to Bosnian/Croatian/Serbian; development of speaking, listening, reading, and writing skills in cultural context. Not open to native speakers of these languages through regular course enrollment or EM credit, or to students with 2 or more years of study in these languages in high school, except by permission of department.
Prereq: Not open to students with credit for SrbCroat 101. This course is available for EM credit. GE for lang course. FL Admis Cond course.

1102  Elementary Bosnian/Croatian/Serbian II  U 4
Continued development of speaking, listening, reading, and writing skills in cultural context. Not open to native speakers of these languages through regular course enrollment or EM credit.
Prereq: BCS 1101 (SrbCroat 101.01). Not open to students with credit for SrbCroat 102 or 103. This course is available for EM credit. GE for lang course. FL Admis Cond course.

1103  Intermediate Bosnian/Croatian/Serbian I  U 4
Continued development of speaking, listening, reading, and writing skills in cultural context. Not open to native speakers of these languages through regular course enrollment or EM credit.
Prereq: BCS 1102 (SrbCroat 102.01). Not open to students with credit for SrbCroat 104. This course is available for EM credit. GE for lang course.

2104  Intermediate Bosnian/Croatian/Serbian II  U 4
Increasing functional ability in speaking, listening, reading, and writing practice; vocabulary-building; new grammar structures; start developing higher-level language skills in Bosnian/Croatian/Serbian. Not open to native speakers of this language through regular course enrollment or EM credit.
Prereq: BCS 1103 (SrbCroat 104.01). Not open to students with credit for SrbCroat 407.01, or for 5 cr or hrs of 407.51.

3101  Advanced BCS I  U 3
Further developing speaking, listening, reading, and writing skills and grammar competence.
Prereq: 2104. Not open to students with credit for Slavic 5194 (Au13, Mihalicke).

3102  Advanced BCS II  U 3
Advanced BCS; second semester.
Prereq: 3101.

**Business Admin**

1100  College of Business Survey  U 1
Academic requirements; policies and procedures; resources; student rights and responsibilities; academic areas of specialization; careers in accounting and business administration.
Prereq: NFYS, or a transfer student in direct enrollment program in BUS, and permission of instructor or department. Not open to students with credit for any OSU survey course.

1100H  College of Business Survey  U 1
Academic requirements; policies and procedures; resources; student rights and responsibilities; academic areas of specialization; careers in accounting and business administration.
Prereq: Honors standing, and NFYS standing in direct enrollment program in BUS and permission of instructor or department. Not open to students with credit for any OSU survey course.

1101.01  Business Administration Seminar: Scholars  U 1
Seminar for first-year business scholars students to explore personal interests, interdisciplinary opportunities, campus and local community resources and activities related to business scholars program.
Prereq: Admission to Business scholars program, and permission of instructor.

1101.02  Business Administration Seminar: Campus Change  U 1
Develop successful strategies to transition from a regional campus to Fisher College and the BSBA major program on the Columbus campus. Emphasis placed on self-initiative, effective decision making and personal responsibility.
Prereq: Permission of instructor.

1101.03  Business Administration Seminar: E&I Scholars  U 1
Seminar for first-year Entrepreneurship & Innovation scholars students to explore personal interests, interdisciplinary opportunities, campus and local community resources and activities related to E&I scholars program.
Prereq: Admission to E&I Scholars program, or permission of instructor.

1101.04  Fisher First Seminar  U 1
For students admitted into the Fisher College of Business and part of the Fisher F.I.R.S.T. Program. Designed to help students reflect on their self and leadership development, foster community building and enhance skills development that are necessary for academic success and career success of students in Business.

1200  College of Business Survey II  U 1
Students will develop a comprehensive academic, professional/career, and personal plan for success that incorporates: self-knowledge and individual interests, exploring a specialization, a 4-year graduation plan, short term and long term goals for gaining leadership and work experience, and identifying opportunities to enhance the college experience.
Prereq: Fresh standing, or transfer student survey course.

2191.01  Professional Experience Field Study  U 1
For students completing a full semester internship requiring credit; internship is supervised by the employer, three assignments related to the internship are evaluated by the Director, Undergraduate Internship Services.
Prereq: Admission to College of Business major program and specialization, and permission of instructor. Not open to students with more than 3 credit hours of 2191 or 2191.02. Repeatable to a maximum of 4 cr hrs. This course is graded S/U.

2191.02  Professional Experience Field Study  U ¾
For students completing a session long internship requiring credit; internship is supervised by the employer, three assignments related to the internship are evaluated by the Director, Undergraduate Internship Services.
Prereq: Admission to College of Business major program and specialization, and permission of instructor. Not open to students with more than 3.5 credit hours of 2191 or 2191.01. Repeatable to a maximum of 4 cr hrs. This course is graded S/U.

2292H  Business Skills & Environment  U 3
Introduction to the role of business in the lives of individuals, consumers, employees, and citizens. Focus on the concept of ethical/leadership with emphasis on both oral and written communication skills for the business environment.
Prereq: Honors standing, and admission to BSBA program. Not open to students with credit for BusMHR 2291, 2292 or BusAdm 499 or 499H.

2600  Undergraduate Speaker Series  U 1
Alumni from the Fisher College of Business will discuss their specializations, and companies to assist students in making career decisions. Emphasis on networking and business communications.
Prereq: Enrollment in College of Business. Not open to students with credit for 503. This course is graded S/U.

2601  Job Search Preparation and Transition to Work for Business Students  U ½ - 1
Practical techniques and skill development in conducting a job/internship search, researching career information, evaluating career decisions and beginning a successful career.
Prereq: Enrollment in the Fisher College of Business Major Program and Specialization. Repeatable to a maximum of 3 cr hrs or 4 completions.
2798 Study Tour: International U ½ - 3

Designed to provide an orientation to students who will embark on an international experience and once there, will enable students across countries to learn from each other. Prereq: Permission of instructor. Not open to students with credit for 498.02. Repeatable to a maximum of 9 credit hours or 3 completions.

3520 Entrepreneurship and Innovation: Fundamentals of New Product Development U 3

Provide an understanding of the entire product development process, from the first stages of problem definition to the finished product. Prereq: BUSMIR 3510.01.

3531 Entrepreneurship and Innovation: General, Startup-Based Entrepreneurship U 3

Transformation of knowledge captured through creative, person-centered design into conceptual, viable, commercial concepts in the area of product/service based general entrepreneurship and entrepreneurial start-ups. Examination of a variety of business models appropriate for commercializing product/service based conceptualizations. Prereq: 3510, and Design 2700 and MechEng or ISE 5682.

3532 Entrepreneurship and Innovation: Corporate Entrepreneurship U 3

Develop skills and understanding of theories and their application to develop new ideas and viable new businesses within an established firm. Address the development of an internal culture of innovation, processes for reviewing ideas and developing concepts, strategic analysis, positioning for competitive advantage, forms of corporate ventures, and the qualities of corporate entrepreneurs. Prereq: 3510, and Design 2700 and MechEng or ISE 5682.

3533 Entrepreneurship and Innovation: Technology Entrepreneurship U 3

Examine the innovative transformation of knowledge captured in scientific discoveries into conceptual, viable, commercial products and services. Prereq: 3510, and Design 2700 and MechEng or ISE 5682.

3630.01 Business Industry Cluster U 3

Exploration of current interdisciplinary best business practices in industry. Students will work across business specializations to learn strategy and implementation details from current industry professionals. Prereq: Previous enrollment in 3630.01, or admission to Business Industry Cluster Program, or permission of instructor. Not open to students with credit for 505.01.

3630.01E Business Industry Cluster U 3

Exploration of current interdisciplinary best business practices in industry. Students will work across business specializations to learn strategy and implementation details from current industry professionals. Prereq: Admission to BSBA Honors Contract Industry Cluster Program.

3630.02 Business Industry Cluster U 3

Exploration of current interdisciplinary best business practices in industry. Students will work across business specializations to learn strategy and implementation details from current industry professionals. Prereq: Previous enrollment in 3630.02, or enrollment in Business Industry Cluster Program, or permission of instructor. Not open to students with credit for 505.02.

3630.02E Business Industry Cluster U 3

Exploration of current interdisciplinary best business practices in industry. Students will work across business specializations to learn strategy and implementation details from current industry professionals. Prereq: Admission to BSBA Honors Contract Industry Cluster Program.

3630.03 Business Industry Cluster U 3

Exploration of current interdisciplinary best business practices in industry. Students will work across business specializations to learn strategy and implementation details from current industry professionals. Prereq: Previous enrollment in 3630.03, or admission to Business Industry Cluster Program, or permission of instructor. Not open to students with credit for 505.03.

3630.03E Business Industry Cluster U 3

Exploration of current interdisciplinary best business practices in industry. Students will work across business specializations to learn strategy and implementation details from current industry professionals. Prereq: Admission to BSBA Honors Contract Industry Cluster Program.

3630.04 Business Industry Cluster U 3

Exploration of current interdisciplinary best business practices in industry. Students will work across business specializations to learn strategy and implementation details from current industry professionals. Prereq: Previous enrollment in 3630.04, or admission to Business Industry Cluster Program, or permission of instructor. Not open to students with credit for 505.04.

3630.04E Business Industry Cluster U 3

Exploration of current interdisciplinary best business practices in industry. Students will work across business specializations to learn strategy and implementation details from current industry professionals. Prereq: Admission to BSBA Honors Contract Industry Cluster Program.
62  Business Admin

3632.03 Business Industry Cluster Project Experience  U  3
Hands-on experience in the execution of industry business practices to fill a need articulated by an operating public or private organization.
Prereq: Enrollment in Business Industry Cluster Program, or permission of instructor. Prereq or concor: 3630.03. Not open to students with credit for 506.03.

3632.03E Business Industry Cluster Project Experience  U  3
Hands-on experience in the execution of industry business practices to fill a need articulated by an operating public or private organization.
Prereq: 3630.03E, and admission to BSBA Honors Contract Industry Cluster Program.

3632.04 Business Industry Cluster Project Experience  U  3
Hands-on experience in the execution of industry business practices to fill a need articulated by an operating public or private organization.
Prereq: Enrollment in Business Industry Cluster Program, or permission of instructor. Prereq or concor: 3630.04. Not open to students with credit for 506.04.

3632.04E Business Industry Cluster Project Experience  U  3
Hands-on experience in the execution of industry business practices to fill a need articulated by an operating public or private organization.
Prereq: 3630.04E, and admission to BSBA Honors Contract Industry Cluster program.

3632.05 Business Industry Cluster Project Experience  U  3
Hands-on experience in the execution of industry business practices to fill a need articulated by an operating public or private organization.
Prereq: Enrollment in Business Industry Cluster Program, or permission of instructor. Prereq or concor: 3630.05. Not open to students with credit for 506.05.

3632.05E Business Industry Cluster Project Experience  U  3
Hands-on experience in the execution of industry business practices to fill a need articulated by an operating public or private organization.
Prereq: 3630.05E, and admission to BSBA Honors Contract Industry Cluster program.

3632.06 Business Industry Cluster Project Experience  U  3
Hands-on experience in the execution of industry business practices to fill a need articulated by an operating public or private organization.
Prereq: 3630.06, and enrollment in Business Industry Cluster Program; or permission of instructor.

3632.06E Business Industry Cluster Project Experience  U  3
Hands-on experience in the execution of industry business practices to fill a need articulated by an operating public or private organization.
Prereq: 3630.06E, and admission to the BSBA Honors Contract Industry Clusters program.

3632.07 Business Industry Cluster Project Experience  U  3
Hands-on experience in the execution of industry business practices to fill a need articulated by an operating public or private organization.
Prereq: 3630.07, and enrollment in Business Industry Cluster Program; or permission of instructor.

3632.07E Business Industry Cluster Project Experience  U  3
Hands-on experience in the execution of industry business practices to fill a need articulated by an operating public or private organization.
Prereq: 3630.07E, and admission to BSBA Honors Contract Industry Cluster Program.

3632.08 Business Industry Immersion Project Experience  U  3
Hands-on experience in the execution of industry business practices to fill a need articulated by an operating public or private organization.
Prereq: 3630.08, or permission of instructor.

3632.09 Business Industry Immersion Project Experience  U  3
Hands-on experience in the execution of industry business practices to fill a need articulated by an operating public or private organization.
Prereq: 3630.09, or permission of instructor.

3640.01 Introduction to Sustainability in Business I: Principles and Concepts  U  3
An introduction to the topic of sustainability in business.
Prereq: Must be in Business Industry Cluster Program.

3640.01E Introduction to Sustainability in Business I: Principles and Concepts  U  3
An introduction to the topic of sustainability in business.
Prereq: Admission to BSBA Honors Contract Industry Cluster Program.

3640.02 Introduction to Sustainability in Business II: Applications, Solutions and Project Experience  U  3
Field projects on sustainable business issues.
Prereq: 3640.01, or permission of instructor.

3642.01E Introduction to Sustainability in Business II: Applications, Solutions and Project Experience  U  3
An introduction to the topic of sustainability in business with a concentration on the applications and solutions.
Prereq: 3640.01E, and admission to BSBA Honors Contract Industry Cluster Program. Not open to students with credit for 3640.02 or 3642.02.

3642.02 Introduction to Sustainability in Business II: Field projects on sustainable business issues.
Prereq: 3640.02, or permission of instructor. Not open to students with credit for BusMHR 504.03 or 694.13.

3760 Exploring Culture in International Environments  U  1
Through individual reflections, activities, and discussions, students participating in Fisher's International Student Exchange Program will be challenged to view knowledge and experiences from multiple perspectives.
Prereq: Accepted into a Fisher International Exchange Program. Repeatable to a maximum of 2 or hrs. This course is progress graded.

3890H Honors Seminar  U  1 - 3
Seminar on current business topics for students enrolled in the Business Administration Honors Programs. Topics may vary.
Prereq: Admission to a Business Administration Honors Program. Repeatable to a maximum of 6 or hrs of 4 completions.

4189 Advanced Field Study: Doing Business in a Global Region  U  1 - 3
Required pre-departure component of Fisher College of Business Global Internship Program for Undergraduates.
Prereq: Admission to Fisher College of Business Global Internship Program, and permission of instructor. Repeatable to a maximum of 2 or hrs. This course is graded S/U.

4191 Professional Experience in Business  U  0
Students complete a co-op or internship assignment in private industry or for a government agency; assignment is supervised by the employer and monitored and evaluated by the course coordinator.
Prereq: Permission of the Course Coordinator. Repeatable to a maximum of 4 completions. This course is graded S/U.

4510 Entrepreneurship and Innovation: Practicum  U  3
Last required course in the Entrepreneurship and Innovation Minor. Application of tools and resources to real-world projects.
Prereq: 3510 and 3532, 3533 or BusMHR 5530, and Design 2700, and MechEng or ISE 5682.

4798 Study Tour: International  U  1 - 10
Specific content, location, semester(s) of offering, and prerequisites vary; contact department office for details. Repeatable for different titled study tours only.
Prereq: Permission of instructor. Repeatable to a maximum of 10 or hrs or 3 completions.

4890H Honors Seminar  U  1 - 3
Seminar on current business topics for students enrolled in the Business Administration Honors Programs. Topics may vary.
Prereq: 3890H. Repeatable to a maximum of 6 cr hrs or 2 completions.

4998 Undergraduate Research in Business  U  1 - 3
Undergraduate Research in Business for non-honors students.
Prereq: BusMHR 2291 (499), and 3rd standing, and permission of instructor. Repeatable to a maximum of 12 or hrs or 4 completions. This course is progress graded.

5797 Study at a Foreign Institution  U  G  1/18
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Prereq: Permission of Undergraduate BSBA Program Director of Student Services. Repeatable to a maximum of 36 or hrs or 10 completions.

7191 Professional Experience in Business  G  0
International students complete a co-op or internship assignment in private industry or for a government agency; assignment is supervised by the employer and monitored and evaluated by the course coordinator.
Prereq: Permission of the Course Coordinator. Repeatable to a maximum of 4 completions. This course is graded S/U.

Business Admin: Finance

1200 Personal Finance  U  3
Introduction to the field of personal financial management and planning, focusing on the tools individuals and families employ to manage their financial affairs.
Prereq: Not open to students with credit for 220, or enrolled in Accounting or Finance majors.

1250 FINGGS  U  2
There is a broad range of opportunities, in a broad range of industries available to students with a Finance degree. This course is designed to explore those opportunities, in an in-depth manner. The goal of this course is to give the student a ‘real world’ perspective.
Prereq: Soph standing, and Finance specialization. This course is graded S/U.
Develops skills related to Time Value of Money, Risk and Return with applications in business.

PreReq: AcctMIS 2000, Math 1116 or above, Econ 2001.01, and CSE 1110 or equivalent. Not open to students with credit for 3220. Not open to students enrolled in the BSBA program.

3194 Group Studies U 1 - 6

Group study projects in selected areas of finance.
PreReq: Permission of instructor. Not open to students with credit for 494.

3220 Business Finance U 3

Introductory finance class which allows students to develop the skills to understand how financial managers make value-maximizing decisions for their firms.
PreReq: Econ 2001.01 (200), and 2002.01 (201), and AcctMIS 2200 (211). PreReq or concur: AcctMIS 2300. Not open to students with credit for 620, or to students enrolled in UUSS, UEp, or PreBSBA-PR.

3222 Foundations of Investments U 3

Basic principles and methods of investment for non-Business majors.
PreReq: 3120 (420) and AcctMIS 2000. Not open to students with credit for 4221 (722) or 522. Not open to students enrolled in the BSBA program.

3250 Foundations of International Finance U 3

Management of financial risk inherent with international business; problems of implementing corporate finance principles; International Capital Markets, for non-Business majors.
PreReq: 2200, 3220 (620), or 420. Not open to students with credit for 4250 or 725.

3300 Principles of Insurance U 3

Basic principles and main characteristics of the Insurance Industry and the fundamentals of risk identification, insurance contracts, and annuities.
PreReq: Econ 2001.01, 2002.01, and BusMHR 2292.

3400 Introduction to Real Estate U 3

Examine the economics of property rights, the fundamental theories in urban economics, and selected applications.
PreReq: Econ 2001.01 (200) or 2002.01 (201), and BusMHR 2292 (BusAdm 499.01). Not open to students with credit for 670.

3500 Legal Environment of Business U 1½

An introduction to American legal institutions, sources of law, and an analysis of basic concepts of public and private law related to business decisions.
PreReq: Soph standing. Not open to students with credit for 510, or to students enrolled in UUSS, UEp, or PreBSBA-PR.

4193 Individual Studies U 1 - 4

Individual study projects in selected areas of finance.
PreReq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 3 completions. This course is graded S/U.

4194.21 Group Studies U 1 - 4

Group study projects in selected areas of finance.
PreReq: Permission of instructor. Not open to students with credit for 694.21.

4194.22 Group Studies U 1 - 4

Group study projects in selected areas of finance.
PreReq: Permission of instructor. Not open to students with credit for 694.22.

4194.23 Group Studies U 1 - 4

Group study projects in selected areas of finance.
PreReq: Permission of instructor. Not open to students with credit for 694.23.

4194.24 Group Studies U 1 - 4

Group study projects in selected areas of finance.
PreReq: Permission of instructor. Not open to students with credit for 694.24.

4194.25 Group Studies U 1 - 4

Group study projects in selected areas of finance.
PreReq: Permission of instructor. Not open to students with credit for 694.25.

4200 Applications in Finance U 3

Applications in Finance with a discussion of investment alternatives such as Money Market instruments, Stocks and Bonds and Corporate Finance issues such as Corporate Governance, Cost of Capital and Capital Budgeting.
PreReq: 3220 (620), BusMgt 2320 (330), and 2321 (331). Not open to students with credit for 4210, 4211, 4212 (721), 4220, 4221, or 4222 (722).

4201 Financial Data U 1½

How to use relevant accounting information for various applications in finance such as estimating stock and bond prices and free cash flows.
PreReq: 3220 (620), AcctMIS 2200 (211), AcctMIS 2300 (212), BusMgt 2320 (330), and 2321 (331); and BusMHR 2291 or 2292 (BusAdm 499.01).

4202H Honors Financial Data U 3

This hands-on course covers the application of financial software tools and financial modeling. You will be exposed to real-world applications used in corporate finance, investment banking, private equity, and asset management.
PreReq: A CPHR of 3.5 or above, and admission to the Finance Honors Program.

4211 Corporate Finance U 3

Analysis of advanced capital budgeting problems through understanding the theories and applications of capital structure, leasing and real options. Theories and applications in corporate control, corporate governance and mergers and acquisitions.
PreReq: 3220 (620), AcctMIS 2200, 2300, BusMgt 2320 (330), 2321 (331), and BusMHR 2291 or 2292 (BusAdm 499.01). Not open to students with credit for 721, 4210 or 4212.

4211H Honors Corporate Finance U 3

The course introduces students to key concepts in financial management, including capital budgeting, the valuation of projects and companies, methods for determining the cost of capital, capital structure and payout policies, securities issuance, mergers and acquisitions, and corporate governance.
PreReq: Admission to the Finance Honors Program, and a CPHR of 3.5 or above.

4213 Corporate Restructuring and Bankruptcy U 1½

Corporate finance theories as they relate to spinoffs, restructuring, and bankruptcy.
PreReq: 4211, 4221, 4219, and BusMHR 2292. Not open to students with credit for 721.

4214 Corporate Finance IV U 1½

A capstone course that allows students to apply their skills and knowledge developed in earlier courses to action-based corporate finance case studies.
PreReq or concur: 4213 and BusMHR 2291 (BusAdm 499.01). Not open to students with credit for 721.

4215 Entrepreneurial Finance U 1½

Examine real-world cases of the importance of the entrepreneurial finance in today's economy.
PreReq: 4211 and 4221.

4216 Private Equity U 1½

Private equity funds are responsible for a large percentage of merger activity both inside and outside the U.S. The venture capital portion of the private equity industry has provided financing for most of the prominent new companies that have gone public in recent years.
PreReq: 4211, 4221, and 4229.

4217 Private Financing (i.e. VC & PE) U 3

This course provides a comprehensive look into the inner workings of Venture Capital along with the various skill sets required of first year analysts. The class will include case studies and class discussions augmented by lectures from industry experts.
PreReq: 4211 and 4221.

4218 Fixed Income Securities U 1½

An introduction to the mathematics and evaluation of US Dollar denominated fixed income instruments. Students will learn the underlying terms and conditions used in the fixed income markets and apply Excel based mathematical models to evaluate the pricing, yield, risk, and return attributes in the market.
PreReq: 4201, 4211, 4221, 4250, and CPHR 3.5 or above.

4219 Advanced Corporate Finance U 3

This course is a capstone undergraduate elective in the area of Corporate Finance. The course helps students bridge the gap between the theory of finance, covered in other courses, and the reality of decision-making as a financial manager through the use of real-world case studies.
Students learn to analyze real-world problems and provide recommendations to a best course of action.
PreReq: 4211, 4221, and BusMHR 2291 or 2292. Not open to students with credit for or currently enrolled in 4229 or 4239.

4221 Investments U 3

Skills for valuation and theories and applications of CAPM, APT, and efficient markets; investment options, forwards and futures, interest rate parity, and relevant market regulation.
PreReq: 3220, BusMgt 2320, 2321, and BusMHR 2292. Not open to students with credit for 722, 4220 or 4222.

4221H Honors Investments U 3

Designed to teach the principles of financial decision making and the investment process. The course will cover current market moving events, multiple asset classes, asset allocation, diversification, security valuation, key player types, efficient market hypothesis, adaptive market hypothesis, behavioral finance, pricing models, active investment management, investment funds, and fin. reg.
PreReq: Admission to the Finance Honors Program, and a CPHR of 3.5 or above.

4223 Fixed Income U 1½

The basics of fixed-income securities, bond valuation skill development, and the measurement and management of credit and interest-rate risk.
PreReq: 4211 and 4221. Not open to students with credit for 731.

4224 Behavioral Finance U 1½

Theories and implications of behavioral finance, CAPM Anomalies, and advanced Investment strategies.
PreReq: 4211 (721), 4212 (722) and BusMHR 2292 (BusAdm 499.01). Not open to students with credit for 722.
course is designed to teach different investment strategies, reveal the beliefs that underlie each one, provide evidence on whether the strategies actually produce results, and what an investor needs to understand in order to implement a philosophy. The strategies covered include value investing, growth investing, technical analysis, market timing, arbitrage, fixed income. Prereq: 4211 and 4221.

Trading & Markets

Action-based course on market design and trading cost analysis, including interactive trading simulation. Prereq: 4211, 4221 and BUSMHR 2292. Not open to students with credit for 730.

Stock Market: Student Investment Management

Action-based course applying valuation techniques and investment strategies to portfolio management and valuation. Prereq: 4211, 4221, BUSMHR 2292 and GPA 3.2 or above. Not open to students with credit for 724.

Options and Futures

This course explores the valuation of forwards, options, forward-based, and option-based financial instruments. While a student may have studied options and/or forwards in other courses, this course examines in detail the analytical methods used to price these securities, and the analytical analysis of arbitrage, hedging, and speculation using these securities. Prereq: 4211, 4221, and BusMHR 2291 or 2292. Not open to students with credit for or currently enrolled in 4219 or 4239.

FinTech

"FinTech" refers to financial sector innovations involving technology-enabled business models that can facilitate disintermediation, revolutionize how existing firms create and deliver products and services, address privacy, regulatory and law-enforcement challenges, provide new gateways for entrepreneurship, and seed opportunities for inclusive growth. Prereq: 4211 and 4221.

Applied Fundamental Investing

Theories and applications in asset management including the roles of investment strategies. Prereq: 4211, 4221, and CPHR 3.5 or above. Not open to students with credit for 728.

Risk Management

Extends the skills developed in Corporate Finance and Investments classes to the role of risk management within the firm. Increasingly, managers are required to understand the many risks facing their organizations, undertaking those risks which represent value-enhancing opportunities, while mitigating unwanted risks. Prereq: 4211 and 4221, and BusMHR 2291 or 2292. Not open to students with credit for or currently enrolled in 4219 or 4239.

Global Finance

Implications for financial managers of global economic policy. Prereq: 3220 (620), AcctMIS 2200 (670), 2300 (671), BusMgt 2320 (330), 2321 (331), and BusMHR 2291 or 2292 (BusAdm 499.01). Not open to students with credit for Econ 520.

Honors Global Finance

In this class, we are going to look at the interconnections that link international financial markets and their implications for firms. We will develop a simple model that will help you understand the relationship between the financial markets and macroeconomic policies and the business environment in which firms operate. Prereq: A CPHR of 3.5 or above, and admission to the Finance Honors Program.

Booms and Busts

In this course we examine various financial booms, busts and how the field of finance evolved along the way. The purpose of the course is to understand the causes of past financial crises and booms as well as develop a deeper understanding of how the field of finance has progressed. Prereq: 4211, 4221, and 4201. Prereq or concourse: 4250.

International Finance

The goal is to provide a framework for making financial decisions in an international context. The course is divided into three sections: 1) the international financial environment, 2) international investment analysis, and 3) international corporate finance. Students will be exposed to a broad range of topics, including some of the latest developments in global financial markets. Prereq: 4250. Prereq or concourse: 4211 and 4221.

Financial Institutions

Financial Institutions play an extremely important role in the functioning of the global economy and in the operation of our firms. When financial institutions fail to act properly the results can be catastrophic, both for financial markets and greater society as a whole. Prereq or concourse: 4211 and 4221. Not open to students with credit for 726.

Commercial Property and Casualty Insurance

Fundamentals of commercial property and liability insurance, including commercial property and liability contracts, and the regulation and financial analysis of property and liability insurers. Prereq: 3300 (640), BusMgt 2230 (330), 2231 (331), and BusMHR 2292 (BusAdm 499.01). Not open to students with credit for 749.

Personal Insurance

Topics on the basics of life insurance, health insurance, disability and long term care insurance, homeowners and renters insurance, auto insurance. Prereq: 3300, BusMgt 2230, and BusMHR 2292.

Employee Benefits Plans

Fundamentals of insurance topics related to the human resource function such as health and retirement benefits, and COBRA. Prereq: BusMgt 2230 (330), 3300 (640), and BusMHR 2292 (BusAdm 499.01). Not open to students with credit for 741.

Captive Insurance Company: Development, Structure and Operations

This course provides an introduction to the formation, characteristics, and functions of Captive Insurance Companies. Captive is a subsidiary insurance company that covers the loss exposures of its parent. In the 50 years since their introduction, captives have evolved to cover multiple owners or members. Prereq: 3300, BusMgt 2230, and BusMHR 2292.

Insurance Operations

This course examines the major operations of property and casualty insurers, and the issues facing managers of such operations. Students will review the core insurance functions of marketing, underwriting, and claims, as well as key staff roles, including actuarial, loss control, reinsurance and investment management. Prereq: 3300, BusMgt 2230, and BusMHR 2292.

Real Estate Finance

Basics of the mortgage markets and related finance investments and models of real estate valuation. Prereq: 3400 (670), or in Finance-BS plan. Not open to students with credit for 772.

Property Management

Basic topics related to property management such as acquisition, construction, and supporting business functions. Prereq: 3220 (620), 3400 (670), 3500 (510), BusMgt 2230 (330), 2321 (331), and BusMHR 2292 (BusAdm 499.01). Not open to students with credit for 776.

Real Estate Law

Basic legal aspects of property contracts, transactions, and environmental law. Prereq: 3220 (620), 3400 (670), 3500 (510), BusMgt 2230 (330), 2321 (331), and BusMHR 2292 (BusAdm 499.01). Not open to students with credit for 773.

Planning and Development

In this action-based class, students engage in site-based development case studies. Prereq: 3220 (620), 3400 (670), 3500 (510), BusMgt 2230 (330), 2321 (331), and BusMHR 2291 (BusAdm 499.01).

Real Estate Asset Management

Real Estate Asset Management, is designed to give students a solid grasp of the skills required in analyzing a commercial real estate investment, and formulating and implementing the strategy for optimizing the investment returns. Prereq: 3220, 3400, 3500, BusMgt 2230, 2231, and BusMHR 2292.

Real Estate Equity Investment

Real Estate Equity Investment, is designed to give students a solid understanding of equity investment in commercial real estate through a vehicle called a Real Estate Investment Trust (REIT). Prereq: 3220, 3400, 3500, BusMgt 2230, 2231, and BusMHR 2292.

Legal Business Issues

Fundamentals of contracts and other legal aspects of business. Prereq or concourse: 3500 and BusMHR 2291 (BusAdm 499.01). Not open to students with credit for 510.

Finance Honors Seminar-Capstone

This course is a current event and capstone project with leadership service experience. The Capstone project will introduce you to the world of non-profit organizations. The non-profit sector serves a vital role in our society and covers range of institutions and organizations. Prereq: Admission to the Finance Honors Program.

Undergraduate Research in Finance

Undergraduate research in finance for non-honors students. Prereq: BusAdm 2291 (499), and Jr standing, and permission of instructor. Repeatable to a maximum of 12 or hrs or 4 completions. This course is progress graded.

Honors Research

Special topics research in finance, business law, insurance and risk, and/or real estate; research evaluated through papers, thesis, and/or special examination. Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 12 or hrs or 4 completions.

Real Estate Valuation

This real estate valuation and financial modeling course will cover existing income producing property as well as ground up construction. Topics include market analysis, comparable valuation, income valuation, cost valuation, real estate finance, expense reimbursements, budget development, and pro-forma modeling. Prereq: 3400, and enrollment in RealEst major or minor; or 4211, 4221, and enrollment in Finance major or 7240, or permission of instructor.
Covers topics of time value of money, concepts of risk and return, and investment criteria. Prereq: Enrollment in MAcc program. Not open to students with credit for 811.

6212 Finance II  G  1½
Covers capital budgeting, market efficiency, derivatives, interest rate parity. Prereq: Enrollment in MAcc program. Not open to students with credit for 811.

6220 Financial Analysis and Valuation  G  3
Fundamental techniques for financial analysis such as time value of money, risk and return, capital budgeting and investment criteria, financial accounting, and an introduction to financial derivatives. Prereq: Enrollment in SMB-Finance program. Not open to students with credit for 860.

6221 Economics for Financial Analysts  G  1½
Principles of how individuals and firms make financial decisions, how financial markets work, and how financial managers make decisions under different forms of industry structure. Prereq: Enrollment in SMB-Finance program. Not open to students with credit for 861.

6225 Core Capstone Projects - SMF  G  1½
This is a capstone, action-based course for students in the Specialized Masters - Finance (SMF) program offered in the first semester of the program. The course aims at providing SMF students with a structured environment to practice analytical and soft skills acquired throughout the program's core courses. Prereq: Enrollment in SMB-Finance program.

6226 Finance Consulting Practicum  G  1½
Action-based course providing students in the Specialized Masters Finance the opportunity to practice analytical and soft skills through working with professionals on finance projects. Prereq: Enrollment in SMB-Finance program. Not open to students with credit for 865.

6227 Professional Development for SMF students  G  1½
This course is designed to supplement and enhance the SMF experience. The SMF program develops technical skills in finance, but class participation and team assignments are also essential to success. Class participation is often a significant part of course grades and team are assigned to prepare case briefs. Prereq: Enrollment in SMB-Finance program. This course is graded S/U.

6230 Accounting & Finance for Analytics  G  3
Students will understand the fundamentals of accounting (managerial and financial) and finance. The course will cover defining financial data, transforming data into information and leveraging financial information to make financial decisions. Students will have hands-on experience with various types of real-world financial data and build a detailed discounted cash flow model. Prereq: Enrollment in SMB-Analystics program.

7193 Individual Studies  G  ½ - 9
Individual study projects in related areas of finance. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 3 completions. This course is graded S/U.

7194.21 Group Studies  G  1 - 4
Group study projects in selected areas of finance. Prereq: Permission of instructor.

7194.22 Group Studies  G  1 - 4
Group study projects in selected areas of finance. Prereq: Permission of instructor.

7200 Financial Software Applications  G  1½
This hands-on course covers the application of financial software tools and financial modeling. Exposure to real world applications used in corporate finance, investment banking, private equity, and asset management. Apply models relating to project analysis, capital budgeting, financial statement analysis, equity intrinsic values, capital structure, portfolio mgmt, leveraged buyouts, and M&A. Prereq: MBA 6223, or enrollment in SMB-Finance program.

7210 Corporate Financing  G  1½
Advanced valuation skills and theories and applications in capital structure and security issuance. Prereq or concur: MBA 6223, or enrollment in SMB-Finance program.

7211 Financial Budgeting and Management in an MNC  G  1½
The course focuses on key financial forecasting and budgeting processes in a multi-national company. The audience is Finance professionals, and other disciplines who aspire to be in commercial facing roles. Prereq: MBA 6223. Prereq or concur: BusFin 7210, or enrollment in SMB-Finance program.

7212 Mergers and Acquisitions  G  1½
Advanced theories of and applications in the areas of corporate control and governance and mergers and acquisitions. Prereq: MBA 6223, and BusFin 7210, concur: 7220 or 7230; or enrollment in SMB-Finance program.

7213 Corporate Restructuring and Bankruptcy  G  1½
Advanced corporate finance theories and applications in the areas of spinoffs, restructuring, and bankruptcy. Prereq: MBA 6223, and BusFin 7210, concur: 7220 or 7230; or enrollment in SMB-Finance program.

7214 Corporate Financial Management IV  G  1½
Advanced case studies in corporate finance. Prereq or concur: 7212 and 7213 (821), or 811 and MBA 810. Not open to students with credit for 828.

7215 Entrepreneurial Finance  G  1½
Advanced study of the roles of Angel investing, business plans, and venture capital in entrepreneurial finance. Prereq: MBA 6223, concur: BusFin 7210, 7220, or 7230; or enrollment in SMB-Finance program.

7216 Private Equity  G  1½
Theories of and applications in buyouts and private equity transactions. Prereq: MBA 6223, concur: BusFin 7210, 7220, or 7230; or enrollment in SMB-Finance program.

7218 Fixed Income Securities  G  1½
An introduction to the mathematics and evaluation of US Dollar denominated fixed income instruments. Students will learn the underlying terms and conditions used in the fixed income markets and apply Excel based mathematical models to evaluating the pricing, yield, risk, and return attributes in the market. Prereq: MBA 6223, concur: BusFin 7210, 7220, or 7230; or enrollment in SMB-Finance program.

7220 Investment Theory and Practice  G  1½
Advanced skills needed for securities valuation, theories and applications related to the CAPM, APT, and efficient markets. Prereq or concur: MBA 6223, or 810. Not open to students with credit for 822.

7221 Financial Modeling  G  1½
Basic financial modeling techniques in EXCEL. Prereq: MBA 6223, or BusFin 6211, 6212, or 6220.

7222 Fixed Income Analysis  G  1½
Valuation of fixed income securities as well as measures of their interest rate and credit risk. Prereq: MBA 6223. Prereq or concur: BusFin 7210, 7220, or 7230; or enrollment in SMB-Finance program.

7223 Quantitative Portfolio Management  G  1½
Advanced investment strategies need for asset management and portfolio allocation. Prereq: MBA 6223. Prereq or concur: BusFin 7210, 7220, or 7230; or enrollment in SMB-Finance program.

7224 Trading & Markets  G  1½
Advanced theories of market design applied in an interactive trading simulation, Action-Based. Prereq: MBA 6223; or prereq or concur: BusFin 7210, 7220, or 7230; or enrollment in SMB-Finance program.

7225 Student Stock Market Investment Management  G  3
Advanced topics in industry analysis and stock valuation applied to portfolio management. Prereq: MBA 6223, BusFin 7210, and 7220; or enrollment in SMB-Finance program.

7226 Behavioral Finance  G  1½
Theories of behavioral finance, such as Prospect Theory, and their implications for investor behavior and markets. Prereq: MBA 6223; or prereq or concur: BusFin 7210, 7220, or 7230; or enrollment in SMB-Finance program.

7230 Derivatives Markets  G  1½
Advanced investments class studying how to value options and related instruments using binomial pricing models and how to value and implement strategies using futures. Prereq or concur: MBA 6223. Not open to students with credit for 823.

7232 Derivatives Valuation and Application  G  1½
Advanced derivatives course covering the Black-Scholes valuation model with applications to financial instruments and other areas of financial engineering. Prereq: MBA 6223; or prereq or concur: BusFin 7210, 7220, or 7230; or enrollment in SMB-Finance program.

7234 FinTech  G  1½
Financial technology (FinTech) is revolutionary and rapidly changing the financial services industries. This graduate course provides an introduction to FinTech such as blockchain, cryptocurrencies (e.g., Bitcoin and Ethereum), alternative lending, machine learning, and robo-advising. Prereq: MBA 6223, or concur BusFin 7210 or 7220 or 7230, or enrollment in SMB-Finance program.
210  Seminar: Asset Pricing Theory  G  1½
PhD level class covers the theoretical models related to contingent claims, CAPM, APT, and Black Scholes.
Prereq: Permission of instructor. Not open to students with credit for 920.

8220  Seminar: Empirical Asset Pricing  G  1½
Covers empirical asset methods such as the Fama-McBeth techniques and GMM estimation.
Prereq: Permission of instructor. Not open to students with credit for 921.

8230  Seminar: Corporate Finance Theory  G  1½
Covers seminal theories of corporate finance such as those related to capital structures, contracting, and security design.
Prereq: Permission of instructor. Not open to students with credit for 922.

8240  Seminar: Empirical Corporate Finance  G  1½
Covers empirical research and mythologies in areas related to capital structure, investment, financial distress and governance.
Prereq: Permission of instructor. Not open to students with credit for 922.

8250  Seminar: Advanced Asset Pricing  G  1½
Covers advanced topics in empirical and theoretical asset pricing.
Prereq: Permission of instructor. Not open to students with credit for 922.

8260  Seminar: Advanced Corporate Finance  G  1½
Covers advanced topics in empirical and theoretical corporate finance.
Prereq: Permission of instructor. Not open to students with credit for 924.

8280  Seminar: Research in Finance  G  1½
Faculty led introduction to research areas in Finance to first year finance PhD students.
Prereq: Permission of instructor. Not open to students with credit for 880. Repeatable to a maximum of 9 cr hrs.

8290  Seminar: Finance Research Topics  G  1½
Advanced PhD student presentations of research in Finance.
Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 6 completions.

8999  Research in Finance: Dissertation  G  1 - 12
Research for dissertation purposes only. Repeatable to a maximum of 24 cr hrs or 6 completions. This course is graded S/U.

**Business Admin: Management & Human Rsrcs**

2000  Introduction to International Business  U  1½
Basic coverage of world trade and investment problems, and introduction to multinational corporation strategies and the various types of environments in which they do business.
Prereq: Econ 2002.01 (201), and Econ 2001.01 (200) or AEDeen 2001 (200). Not open to students with credit for BusAdm 555. Not open to students enrolled in UUSS, UEop or PreBSBA-PR.

2210  Personal Leadership and Team Effectiveness  U  3
Effective management practices and how leadership practices lead to effective team and organizational performance.

2210H  Personal Leadership and Team Effectiveness  U  3
Effective management practices and how leadership practices lead to effective team and organizational performance.

2292  Business Skills & Environment  U  3
Introduce the role of business in the lives of individuals, consumers, employees, and citizens.
Focus on the concept of ethical leadership with emphasis on both oral and written communication skills for the business environment.
Prereq: English 1110.01 (110) or equivalent, honors standing, and admission to the Business Administration major. Not open to students with credit for BusAdm 499, 499.01, or BusMHR 2291. Not open to pre-business students.

2292H  Business Skills & Environment  U  3
Introduce the role of business in the lives of individuals, consumers, employees, and citizens.
Focus on the concept of ethical leadership with emphasis on both oral and written communication skills for the business environment.
Prereq: English 1110.01 (110) or equivalent, honors standing, and admission to the Business Administration major program. Not open to students with credit for 2291, 2292, or BusAdm 499H.

2400  IBE Competitive Analysis Seminar  U  1
Students will develop and apply a series of conceptual models that illustrate interactions between competitive strategy and patterns of technological, market and competitive change. Models will provide means to consider which firms benefit from market change, why existing firms fail to incorporate innovation in a timely manner and the types of markets in which a given firm should invest.
Prereq: Admission to the Integrated Business and Engineering major.

2500  Entrepreneurship  U  3
Assesses economical, sociological, and psychological foundations of entrepreneurship and its impact on society.
Prereq: Not open to students with credit for BusMHR 290. GE soc sci human, nat, and econ resources course.
3000 Advanced Topics in International Business  U  3
Advanced topics in international business including strategy, alliances, and exchange. Prereq: 2000. Not open to students with credit for 4010 or International Business Minor students.

3100 Foundations of Management and Human Resources  U  3

3193 Individual Studies  U  1 - 5
Individual study projects in selected areas in management and human resources. Prereq: Permission of instructor. Not open to students with credit for 3100 (400) or 701. Not open to students enrolled in UASS, UExp or PreBSBA-PR.

3200 Managing individuals in Organizations: Organizational Behavior and Human Resources  U  3
Principles for managing the performance of individuals and groups in organizations; introduction to organizational behavior theory and its application to staffing, training, compensation, and appraisal. Prereq: Econ 2001.01 (200) and 2002.01 (201) or: English 1110.01 or equiv. Not open to students with credit for 3100 (400) or 701. Not open to students enrolled in UASS, UExp or PreBSBA-PR.

3200H Managing individuals in Organizations: Organizational Behavior and Human Resources  U  3
Principles for managing the performance of individuals and groups in organizations; introduction to organizational behavior theory and its application to staffing, training, compensation, and appraisal. Prereq: Econ 2001.01 (200) and 2002.01 (201) or: equivalents; and enrollment in the Business Administration Honors Cohort Program. Not open to students with credit for BusHHR 701 or 701H.

3211 Leadership and Character  U  3
Issues of leadership as related to value-based decision making, character, and personal integrity.

3220 Leadership Legacy  U  3
Exposes students to practical applications of good organizational management and leadership practices. Prereq: English 1110.01 or equiv. Not open to students with credit for 542.

3221 Innovation and Leadership  U  3
This course is built on intellectual and experiential engagement with innovative leadership. Students are challenged to develop better problem-solving skills in a team-oriented atmosphere, and through the use of creativity, learn to view challenges from new and different perspectives. Cross-listed in ESHESA.

3303 HR Analytics  U  3
This course is intended to prepare students with the necessary tools for using data analysis to inform HR decision-making and to analyze issues and problems in HRM. Prereq: English 1110.01 or equiv.

3400 IBE Innovation Management Seminar  U  1
Provides students the opportunity to apply basic competitive analysis theories/tools to analyze "real-world" firms. Prereq: 2400.

3500 High Stakes Leadership  U  1½
Considers the unique challenges involved in high stakes leadership - situations when leadership can mean the difference between life & death. Students will learn skills that will prepare them for an outdoor, team-based, high stakes experience. Topics: self-leadership, managing emotions, risk assessment, leadership emergence, decision-making, trust, communication, teamwork, & active followership. Repeatable.

3501.01 Buckeye Leaders Expedition  U  1½
Skill-building exercises specifically designed to extend & test the concepts introduced in MHR 3500. This class involves journeys and exploration, where we actually practice the techniques in unique, challenging, and beautiful environments. In this particular expedition, we expand our scope by first visiting a local climbing venue, and then several climbing areas throughout Ohio. Prereq: 3500. Repeatable.

3501.02 Seneca Leaders Expedition  U  1½
This course applies a model of leadership we have developed and to which students are introduced in MHR 3500. The expedition is a blend of climbing activities, white water rafting, biking. The climbing portion of the expedition involves locations at the New River Gorge National River and Seneca Rocks National Park. Prereq: 3500. Repeatable.

3501.03 Rocky Mountains Leaders Expedition  U  1½
Skill-building exercises designed to extend & test the concepts introduced in MHR 3500. This class is a blend of mountaineering and technical climbing. The mountaineering portion involves climbing 4 of Colorado’s highest peaks including Long’s Peak. The technical climbing portion involves climbing 3 of the most iconic climbing venues in the US. Prereq: 3500. Repeatable.

3501.04 High Stakes Leadership Virtual Expedition  U  1½
This course builds off the High Stakes Leadership Model (HSLM), which is introduced in BusHHR 3500. Students will apply the skills reflected in the HSLM to activities that simulate settings found on high stakes expeditions. A central objective of the course is to prepare students for expedition scenarios & build quality relationships with fellow team members prior to the expedition. Prereq: 3500. Repeatable to a maximum of 4.5 cr hrs.

3510 Innovation and Entrepreneurship  U  3
Examines the many dimensions of new business creation and the fostering of innovation. Prereq: Not open to students with credit for 490, 490.01, 3510.01 or 3510.02.

3511 Value Creation in the Social Enterprise  U  3
Value creation in social enterprise helps non-profits with various resources needed to aid in their growth and contribute to their sustainability. The course tracks its history, the foundations spearheading the movement, and development of the earned income model. It also covers the legal structures and financing tools in place for non-profits created with a mission to be better served.

3543 Franchising  U  3
Planning, building, and leading franchise organizations and franchising as a growth strategy. Prereq: BusHHR 2500 (250).

4010 International Business Strategies  U  1½
This course highlights how firms make decisions to go abroad, select among foreign markets, and develop international strategies to enhance their profitability and long-term competitive advantage. It will also highlight economic and political risks of international business and discuss ways that firms can mitigate these risks. Prereq: 2000. Not open to students with credit for 3000, or International Business Major students.

4020 Cross Cultural Management  U  3

4031 Institutions of the International Business Environment  U  3
Major international institutions and the role they play in international business and commerce. Prereq: 2000.

4193 Individual Studies  U  1 - 5
Individual study projects in related areas in management and human resources. Prereq: Permission of instructor. Not open to students with credit for 693. Repeatable to a maximum of 15 cr hrs or 3 completions. This course is graded S/U.

4194.61 Group Studies  U  1 - 5
Group study projects in related areas in management and human resources. Prereq: Permission of instructor. Not open to students with credit for 694.51.

4194.62 Group Studies  U  1 - 5
Group study projects in related areas in management and human resources. Prereq: Permission of instructor. Not open to students with credit for 694.52.

4194.63 Group Studies  U  1 - 5
Group study projects in related areas in management and human resources. Prereq: Permission of instructor. Not open to students with credit for 694.53.

4194.64 Group Studies  U  1 - 5
Group study projects in related areas in management and human resources. Prereq: Permission of instructor. Not open to students with credit for 694.54.

4194.65 Group Studies  U  1 - 5
Group study projects in related areas in management and human resources. Prereq: Permission of instructor. Not open to students with credit for 694.55.

4221 Concepts and Competencies for Managing People  U  3
Application of concepts to managing oneself and others in real work situations, includes practice of behavioral skills such as delegation, persuasion and performance feedback. Prereq: 2291 or 2292 (BusAdm 499.01); and 3200 (701), and AcctMIS 2200 (211), 2300 (212), and BusMgt 2320 (330), 2321 (331). Not open to students with credit for 704.

4228 Introduction to Organizational Business Coaching  U  3
For students interested in building their own organizational and leadership coaching skills; class will explore the various roots and perspectives of modern coaching while building the coaching skills of which central upon but are not limited to deep listening, coaching presence, business acumen, cultural dynamics, and powerful questioning. Prereq: English 1110.01 or equiv.
Developing Leaders through Practical Exercises

This course is taught in a layered effect starting with basic leadership principles and ends with complex practical exercises challenging students to become better leaders. The leader development program incorporates leadership principles, practical exercises, case studies, and assessment to train and develop future leaders.

Prereq: English 1110.01 or equiv.

U  G  U

4236 Crucial Conversations

Building skills for handling tough conversations; practical ways to manage disagreement and disappointment in a constructive manner. Provides method for straight talk that moves people and positions forward. Principles further build a capacity to hold people accountable while increasing commitment & performance. Drives impact and competitive advantage at the leader, team, and organizational level.

Prereq: English 1110.01 or equiv.

U  G  U

4244 Negotiations

This course will explore the major concepts and theories of negotiation and the dynamics of interpersonal and inter-group negotiation and problem-solving strategies.

Prereq: English 1110.01 or equiv. Not open to students with credit for 4220.

U  G  U

4320 Human Resource Management in a Market Economy

Application of economic theory to organizations and labor markets; emphasis on the role of labor market analysis in human resource decision-making.

Prereq: 2291 or 2292 (BusAdm 499.01); and 3200 (701), and AcctMIS 2200 (211), 2300 (212), and BusMgt 2320 (330), 2321 (331). Not open to students with credit for 651.

U  G  U

4321 International Labor and Human Resource Management

Examination of the human resource challenges that emerge in multinational organizations, and emphasis on issues to be considered when preparing oneself and others for international assignments.

Prereq: 2000 and 3200.

U  G  U

4322 Human Resource Learning: Training and Development

Introduction to concepts and organization practices associated with designing, implementing, and evaluating different types of employee training and development programs.

Prereq: 2291 or 2292 (BusAdm 499.01); and 3200 (701), and AcctMIS 2200 (211), 2300 (212), and BusMgt 2320 (330), 2321 (331). Not open to students with credit for 703.

U  G  U

4323 Human Resource Practices and the Law

Review of federal laws and administrative bodies regulating employee management in the workplace, emphasis on practical skills for managing human resource issues legally.

Prereq: 2291 or 2292 (BusAdm 499.01); and 3200 (701), and AcctMIS 2200 (211), 2300 (212), and BusMgt 2320 (330), 2321 (331). Not open to students with credit for 653.

U  G  U

4324 Staffing: Concepts and Competencies for Acquiring Talent

Introduction to the scientific, legal, and administrative issues associated with the recruitment, hiring, and placement of individuals by organizations.

Prereq: 2291 or 2292 (BusAdm 499.01); and 3200 (701), 4323 (653), and AcctMIS 2200 (211), 2300 (212), BusMgt 2320 (330), 2321 (331); or enrollment regional Business Management program. Not open to students with credit for 756.

U  G  U

4325 Labor Relations and Collective Bargaining

Examination of basic aspects of labor relations and collective bargaining including labor history, labor law, union structure and governance, labor-management bargaining, and contract administration.

Prereq: 2291 or 2292 (BusAdm 499.01); and 3200 (701), AcctMIS 2200 (211), 2300 (212), and BusMgt 2320 (330), 2321 (331). Not open to students with credit for 761.

U  G  U

4326 Compensation and Benefits Administration

Provides a comprehensive framework and state-of-the-art tools for designing compensation systems via assessment of organizational needs, internal and external equity, and compensation administration.

Prereq: 2291 or 2292 (BusAdm 499.01); and 3200 (701), and AcctMIS 2200 (211), 2300 (212), and BusMgt 2320 (330), 2321 (331). Not open to students with credit for 762.

U  G  U

4328 Performance Management

Measure and development performance of individuals and groups to align performance with organization's strategic objectives.

Prereq: 2291 or 2292 (BusAdm 499.01); and 3200 (701), and AcctMIS 2200 (211), 2300 (212), and BusMgt 2320 (330), 2321 (331).

U  G  U

4330 Strategic Human Resource Management

Examination of a strategic perspective for managing employees that emphasizes the use of ethical practices and evaluates how practices fit together with organizational objectives.

Prereq: 2291 or 2292 (BusAdm 499.01); and 3200 (701), and AcctMIS 2200 (211), 2300 (212), and BusMgt 2320 (330), 2321 (331). Not open to students with credit for 769.

U  G  U

4490 Strategic Management

Introduction to the concepts and analytic tools in the field of strategic management to understand the competitive position of firms.

Prereq: 2000 (BusAdm 555), 2292 (BusAdm 499.01), 3200 (701), and BusMgt 2320 (330), 2321 (331), 3230 (630), and BusFin 3500 (510), 3220 (620), and BusML 3250 (650), 3380; and Sr standing in Business Administration Honors program. Not open to students with credit for BusAdm 799H.

U  G  U

4490H Strategic Management

Introduction to the concepts and analytic tools in the field of strategic management to understand the competitive position of firms.

Prereq: 2000 (BusAdm 555), 2292 (BusAdm 499.01), and 3200 (701); and BusMgt 2320 (330), 2321 (331), and 3230 (630); and BusFin 3500 (510), and 3220 (620); and BusML 3250 (650), 3380, and Sr standing in Business Administration Honors program. Not open to students with credit for BusAdm 799H.

U  G  U

4520E Leading High Performance Ventures

Focuses on concepts, frameworks, skills, and tools that enable a start-up to become a sustainable enterprise that creates jobs. Option available for honors students to do extra work for Honors credit.

Prereq: Not open to students with credit for 3520 or 590.

U  G  U

4550 Capstone in Entrepreneurship: Starting the Business

Students will start a business, including all aspects involved in a start-up. Second half of the course is a one-semester independent based on their start-up experience. This immersion course is required to earn an Entrepreneurship Distinction and Fellowship designation.

U  G  U

4570 Establishing Import-Export Firms

To teach students how to get an export business started, how to compete in a global market and how to expand the business globally.

Prereq: 2000, and permission of instructor.

U  G  U

4627 Leveraging Athletics for Business and Personal Success

Study of complexities confronting professional athletes. Despite perceived glamour surrounding professional sports, many former stars become directionless and penniless when their playing careers end. Classroom experience through readings and assignments will explore how this can occur and attempt to understand and offer activities and behaviors that lead to life success.

U  G  U

499B Undergraduate Research in Management and Human Resources

Undergraduate Research in Management and Human Resources for non-honors students.

Prereq: BusAdm 2291 (499), and Jr standing, and permission of instructor. Repeatable to a maximum of 12 cr hrs or 4 completions. This course is progress graded.

U  G  U

499BH Honors Research

Special topics research in management and human resources; research evaluated through papers, thesis, and/or special examinations.

Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 12 cr hrs or 4 completions. This course is progress graded.

U  G  U

5530 Topics in Social Entrepreneurship

Developing a business plan in social entrepreneurship.

Prereq: Not open to students with credit for 691 or 694.52.

U  G  U

7010 Advanced topics in Multinational Business

Examination of topics in international business, including the role of cultural and political systems, trade and FD, and multinational enterprise.

Prereq: MBA 2621 (520). Not open to students with credit for BusAdm 856.

U  G  U

7013 China and Its Global Business Implications

Introduction to the historical, economic, cultural, social and geopolitical circumstances of China's rise, and its global business repercussions.

Prereq: Not open to students with credit for 833.

U  G  U

7022 GAP: Global Applied Projects

Students plan and execute real-world consulting engagement. Spring 2: students attend lectures on management, cultural awareness, other relevant topics, and work part-time on self-managed teams guided by Coach/Faculty Advisor. In May, students travel abroad, work full-time to complete assignment and deliver final presentation to client. By application only. Mandatory info session.

Prereq: Permission of instructor.

U  G  U

7191 HR Practicum

Supervised practical experience relating to labor and human resources.

Prereq: Permission of instructor.

U  G  U

7193 Individual Studies

Individual study projects in selected interdisciplinary topics in business administration.

Prereq: Enrollment in BusAdm or LHR PhD program, or permission of instructor. Repeatable to a maximum of 15 or hrs or 3 completions. This course is graded SU.

U  G  U

7194.61 Group Studies

Group study projects in related areas in management and human resources.

Prereq: Permission of instructor. Not open to students with credit for 894.61.

U  G  U

7194.62 Group Studies

Group study projects in related areas in management and human resources.

Prereq: Permission of instructor. Not open to students with credit for 894.62.

U  G  U

7194.63 Group Studies

Group study projects in related areas in management and human resources.

Prereq: Permission of instructor. Not open to students with credit for 894.63.
7194.64  Group Studies  G  1 - 5
Group study projects in related areas in management and human resources. Prereq: Permission of instructor. Not open to students with credit for 894.64.

7194.65  Group Studies  G  1 - 5
Group study projects in related areas in management and human resources. Prereq: Permission of instructor. Not open to students with credit for 894.65.

7220  Personal Leadership Effectiveness  G  3
The ability to successfully execute any project or assignment; attaining mastery in identifying, resolving problems, gaining mastery in causing results in any condition/circumstance. Prereq: MBA 6200 or 6202 (860). Not open to students with credit for 834.

7221  Leadership Values and Decision Making  G  1½
This course explores the multiple ways that personal character and integrity, and organizational culture, affect leadership behavior, from both ethical and psychological perspectives. The course will employ readings, cases, speakers and self-assessment tools, and analysis of both historical and contemporary examples. Prereq: Enrollment in MBA, WP MBA, MHRM, or MAcc program, or permission of instructor. Not open to students with credit for 847.

7222  Advanced Topics in Leadership: Building Your Leadership Legacy  G  1½ - 3
Development of a personal leadership legacy designed to achieve career goals and improve leadership skills. Prereq: Enrollment in MBA, WP MBA, MHRM, or MAcc program, or permission of instructor.

7223  Advanced Topics in Leadership Effectiveness: Strategy Implementation  G  1½
Study strategy needed for organizational alignment; implementation, execution of strategic priorities; and organizational culture, leadership, structure, communications, compensation, metrics relative to effective execution of strategy. Prereq: Enrollment in MBA, WP MBA, MLHR or MAcc program or permission of instructor. Not open to students with credit for 847.

7224  Organizational Turnarounds  G  1½
Case studies of organizational turnarounds. Prereq: Enrollment in MBA, WP MBA, MHRM, or MAcc program; or permission of instructor. Not open to students with credit for 843.

7225  Crisis Leadership  G  1½
Studies of leaders and organizations facing crises to understand how to be successful in handling such challenges. Prereq: Enrollment in MBA, WP MBA, MLHR, or MAcc program; or permission of instructor. Not open to students with credit for 843.

7228  Introduction to Organizational Business Coaching  G  1½
For students interested in building their own organizational and leadership coaching skills; class will explore the various roots and perspectives of modern coaching while building the skills of coaching which center upon but are not limited to deep listening, coaching presence, business acumen, cultural dynamics and powerful questioning. Prereq: Enrollment in MBA, WP MBA, MHRM, or permission of instructor.

7229  Advanced Organizational Business Coaching  G  1½
This course follows Introduction to Organizational Business Coaching and intends to broaden the learners lens beyond the one-on-one coaching or coaching as a leadership skillset and venture into how coaching cultures evolve, what the coaching industry holds, and eventually will build on more complex skills in several modules on Systemic Organizational Team Coaching. Prereq: 7228, and enrollment in MBA, WP MBA, or MHRM.

7230  Developing High Performance Teams  G  1½
Groups and teams are becoming a way of life in organizations. This course will teach the theory and processes of group and team behavior so that you can successfully manage groups and work effectively in a variety of group settings. It is intended for students who seek greater understanding of teams and wish to increase their competence in managing and working effectively in these contexts. Prereq: Not open to students with credit for 828.

7231  Building Professional Services  G  1½
Innovative ideas for building professional service organizations; best practices; strategies; market trends/service capabilities at product-centric companies; cultural issues facing service businesses within product companies. Prereq: Not open to students with credit for 828.

7233  Leadership and Implementation of Change  G  3
Expand understanding of what is involved in the successful implementation of change. Discuss key elements in leading and managing change. Focus on individual's ability to accomplish change regardless of position or authority. Prereq: Not open to students with credit for 7232 (809) or 7220 (834).

7234  Developing Leaders and Coaches Through Practical Exercises  G  3
The course starts with basic leadership and coaching principles and ends with complex practical exercises challenging students to become better leaders. The course incorporates planning, preparation, practical exercises, case studies, coaching and assessment to train and develop future leaders.
70 Business Admin: Management & Human Rsrs

7304 Talent Management  G  1½
Overview of concepts, practices, issues and learnings related to strategically managing talent to develop organizational capability and meet strategic business goals and objectives.
Prereq: Not open to students with credit for 846.

7305 Contemporary Employment Practices and the Law  G  1½
Title VII of the 1964 Civil Rights Act, The Equal Pay Act, the Age Discrimination in Employment Act, the Civil Rights Act of 1967, and federal affirmative action program.
Prereq: Enrollment in MHRM program. Not open to students with credit for 868.

7306 Understanding Teams & Leadership for Human Resource Managers  G  1½
A focus on the manager’s role in dealing with individuals and work teams. Other topics include: work design, communications, leadership and motivation.
Prereq: Enrollment in MHRM program.

7307 Performance Management  G  1½
Measure & develop performance of individuals & groups & align performance with organization’s strategic objectives; methods, theories, research findings, issues regarding employee performance in organizations.
Prereq: Not open to students with credit for 849.

7308 Organizational Change & Project Management  G  3
The primary focus for this course is the nature of change within organizations (of all types). Any discussion of organization change also benefits from at least some discussion of organization design and development. The course will examine the nature and implementation of organization change itself.

7309 Strategic Management of Human Assets  G  1½
Theory and research regarding teamwork and leadership, to enhance understanding build skills in team leadership, membership, change and followership.
Prereq: Not open to students with credit for 869.

7310 Labor Relations  G  1½
Examination of the basic elements of labor-management relations, including the process and content of collective bargaining.
Prereq: Not open to students with credit for 861 or 864.

7311 Staffing & Talent  G  3
The course will look at the entire talent life cycle including four major categories: Talent Acquisition, Performance Management, Talent Development, and Talent Planning.

7313 Total Rewards/Compensation  G  3
Introduction to pay systems; including job evaluation, pay surveys, performance appraisals, and benefits.
Prereq: Not open to students with credit for 865.

7314 Designing Learning Systems  G  1½
Course will cover the learning function in organizations broadly defined to include training, development, knowledge management and career management. The concepts, methods, and issues discussed in the course are applicable to all types of organizations and jobs.

7320 MBA in a Semester  G  3
This course is designed to give a student with little or no prior business experience a quick overview of key business functions. The objective of the course is to help you become better HR managers by enhancing your understanding of strategy, the general business environment, operations & technology, marketing, and finance.
Prereq: Enrollment in MLHR program.

7321 Fundamentals of Business Excellence II  G  3
Focus on developing specialized knowledge of functional areas and process in modern organizations.
Prereq: 7320 (863), or permission of instructor.

7322 Fundamentals of Business Excellence III  G  3
Presentation of the strategic and tactical issues related to effective implementation and practice in HR.
Prereq or concn: 7321, or permission of instructor.

7325 International Human Resource Management  G  1½
Course is an overview of managing human resources across borders, with emphasis on the strategies and practices of multinational corporations, and examines the opportunities & challenges of operating in a global economy, how cross-national differences shape approaches to business and human resource management, and analysis of future trends and challenges in international human resource management.
Prereq: Enrollment in MHRM program.

7335 Managing Diversity  G  1½
Best practices and innovative ideas in managing diversity, the impact of diversity within and outside the organization, and how diversity creates value for an organization.
Prereq: Grad standing.

7345 HR Bargaining  G  1½
Human Resource Managers need both analytical skills to discover optimal solutions to problems and good bargaining skills to effectively implement those solutions. Through this course, students will learn the major concepts and theories of bargaining in human resource management and develop expertise in the practice of bargaining in a variety of human resource management settings.
Prereq: Enrollment in MHRM program. Not open to students with credit for or concurrent enrollment in 7244.

7412 Competitive Analysis  G  1½
Tools to identify, parse, and analyze the economic and market data necessary to complete a comprehensive strategic analysis of business competition. Application of major steps in industry analysis, competitive positioning, capability analysis, competitor analysis, and some private equity valuation.
Prereq: Enrollment in MBA or WPMBBA program, or permission of instructor. Not open to students with credit for 838.

7413 Advanced Strategic Analysis  G  1½
Course objective is to analyze a firm’s competitive situation and related strategies to create competitive advantage in a more realistic setting than is possible using the traditional case method. Theoretical frameworks learned in the core strategy course among others are applied to firms using real-time data from multiple public sources in order to create well-grounded insights about a firm.

7415 Corporate Diversification  G  1½
A study of corporate strategies, actions firms take to gain competitive advantages; strategies studied will include corporate diversification and mergers and acquisitions.
Prereq: Enrollment in MBA or WPMBBA, or permission of instructor. Not open to students with credit for 839.

7420 Mergers, Acquisitions and Corporate Development  G  1½
Analyzes mechanisms underlying the creation and destruction of value in M&A by studying issues such as: drivers of M&A, value creation strategies, valuation and integration.
Prereq: Enrollment in MBA, MHRM, MAcc program, or permission of instructor. Not open to students with credit for 808.

7421 Intopia: Applied Competitive Strategy  G  3
Focuses on international operations business simulation INTOPIA and student’s companies operations in it. Each company must be well prepared to make and execute decisions.
Prereq: Enrollment in MBA or WPMBBA program, or permission of instructor. Not open to students with credit for 836.

7433 Advanced Strategy Implementation  G  3
The aim of this course is to help students gain an organization design perspective on challenges in strategy formulation and implementation, especially in multi-business firms.
Prereq: Enrollment in MBA, WPMBBA, MHRM, or MAcc program, or permission of instructor.

7461 Technology and Innovation Strategy  G  1½
How technology strategy may lead to creation/persistence of competitive advantage. In contrast to core strategy course, provides series of strategic frameworks for managing high-tech businesses.
Prereq: Enrollment in MBA, WPMBBA, MLHR, MHRM, or MAcc program, or permission of instructor. Not open to students with credit for 849.

7522 Entrepreneurship and the Business Plan  G  3
Experiential opportunities in entrepreneurship, entrepreneurial concepts, and financing and executing the business plan.
Prereq: Not open to students with credit for 7520 or 7521 (825).

7525 Global Innovation and Entrepreneurial Leadership  G  3
Field study projects to introduce venture capital, private equity, technology commercialization and new venture strategy.

7531 Technology Venture Lab  G  3
Executing the “live” launch of new ventures utilizing lean startup principles, the business model canvas and the customer discovery process for creating scalable, investment-worthy ventures.
Prereq: Permission of instructor. Not open to students with credit for 891. Repeatable to a maximum of 6 hrs.

7533 Managing a Not-for-Profit Business  G  1½
General introduction and business analysis of not-for-profit businesses and business solutions to issues facing not-for-profit leaders. Focus will be the fundraising model implemented at the university. Topics will include administration, finance, resource development, donor relations, capital campaigns, event planning and volunteer management.

7543 Understanding Commercial and Social Franchising  G  3
This course will explore the business and legal requirements of franchising in the United States and internationally. It will provide students with an understanding of how to design and develop sustainable and consistent commercial and social franchise systems.
Prereq: Enrollment in MBA program, or permission of instructor.

7605 The Business of College Sports  G  3
Business analyses of intercollegiate athletics, including an in depth look at OSU athletic program. College sports administration, educational, and business missions.
Prereq: Enrollment in the MBA, WPMBBA, MLHR, MHRM or MAcc program; or permission of instructor. Not open to students with credit for 870 or KnSISM 6842. Cross-listed in KnSISM 6842.
Business Admin: Management & Human Rsrs  71

7610 Business Ethics  G  1½
Developing ethical perspectives in the business environment for use in managerial decision-making.
Prereq: Not open to students with credit for 859.

7611 International Corporate Compliance and Ethics  G  1½
Governance
Managers face increasing compliance standards for multinational enterprises that governments view as reducing corruption and promoting ethical business practices. Anti-corruption prohibitions, codes of conduct, and model ethics guidelines are no longer bound to businesses conducted solely with governments, but also apply to NGOs.
Prereq: Grad standing in the Fisher College of Business.

7612 Ethics and Leadership Integrity in a Global Economy  G  3
This course will explore fundamental concepts and false assumptions in ethical issues facing corporate actors and business decision-making, explore the factors, steps, and pressures that accompany making ethical business decisions, and that reflect leadership integrity, and consider ethical dilemmas faced by enterprises that arise internationally under these measures and best ethics practices.
Prereq: Not open to students with credit for 7610 or 7611.

7614 Enterprise Governance, CSR, and Decision-Making - An Ethical Perspective  G  1½
This course will explore these fundamental questions and next-generation enterprise views using readings, cases, group presentations, and speakers.

7629 Prof Business Communication Skills  G  1½ - 3
The purpose of this course is to create and build a baseline of communication skills used in business and industry. In addition to foundation skills, the course focuses on key elements of style and "polishing up techniques" in the presentations arena.
Prereq: MBA 6281.01. Not open to students with credit for 7268.

7640 Strategies for Business Sustainability: Principles and Concepts  G  1½
Examination of the principles and concepts involved in developing sustainable businesses.
Prereq: Not open to students with credit for 841.

7660 Innovation Practice  G  1½
Theory and application of innovation practices as well as a framework for commercial application.

7689 Washington Campus  G  1½ - 3
Week-long program in Washington DC on public policy. Presentations by policy-makers, trips to agencies, and participation in congressional simulation.
Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs or 2 completions.

7703 Leadership, Talent Management, and Organizational Behavior in Health Sciences  G  2
Provides an overview of factors that influence individual and team performance and techniques to improve it with an emphasis on the businesses in the life sciences and healthcare for managerial decision making.
Prereq: Enrollment in the Graduate Business Minor in Health Sciences.

7704 Contemporary Topics in HR & Professional Development  G  1
Intended to be primarily discussion based & academically challenging, increase problem solving & written/verbal communication skills. Challenge students to think in ways they may have never thought before whilst the objectives are to further develop the student's critical thinking skills, grit, perseverance, resourcefulness, confidence, cognitive skills and the ability to collaborate and innovate.
Prereq: Enrollment in MHRM program. Repeatable to a maximum of 3 cr hrs.

7714 Strategy and Competitive Analysis for Health Sciences  G  1½
Course focuses on creation of long term value for organizations in the health sciences industry and provides practical tools for strategic analysis of industries and individual practices for competitive strategies.
Prereq: 7254 or 7703, BusMgt 7256 or 7701, and BusFin 7400 or 7702; and enrollment in the Graduate Business Minor in Health Sciences.

7800 Advanced Topics in Management and Human Resources for EMBA  G  1½
Advanced Topics in Management and HR for students in the Executive MBA Program.
Prereq: Enrollment in EMBA program. Repeatable to a maximum of 15 or 7 completions.

7999 Research in Management and Human Resources: Thesis  G  3
Research for thesis purposes only.
Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 4 completions. This course is graded on a letter grade (A-F).

8001 Seminar: Seminar in International Business  G  1½
A critical study of current theories and research methodologies and findings in the field in international business.
Prereq: Enrollment in the Fisher College of Business Ph.D program, or permission of instructor.
Not open to students with credit for 925.01.

8002.01 Advanced Seminar: Selected Issues in International Business I  G  1½
Current and key issues in international management analyzed from an interdisciplinary perspective.
Prereq: Enrollment in Fisher College of Business Ph.D program, or permission of instructor.
Repeatable to a maximum of 3 cr hrs.

8002.02 Advanced Seminar: Selected Issues in International Business II  G  1½
Additional current and key issues in international management analyzed from an interdisciplinary perspective.
Prereq: Enrollment in Fisher College of Business PhD program, or permission of instruction.
Repeatable to a maximum of 6 cr hrs or 2 completions.

8201 Management Seminar: Seminar in Organizational Behavior I  G  1½
Discussions of theory and research on organizational behavior.
Prereq: Enrollment in Fisher College of Business PhD program, or permission of instructor.
Repeatable to a maximum of 6 cr hrs or 2 completions.

8202.01 Advanced Seminar: Selected Issues in Organizational Behavior I  G  1½
Advanced discussions of theory and research on organizational behavior.
Prereq: Enrollment in Fisher College of Business PhD program, or permission of instructor.
Repeatable to a maximum of 6 cr hrs or 2 completions.

8202.02 Advanced Seminar: Selected Issues in Organizational Behavior II  G  1½
Advanced discussions of theory and research on organizational behavior.
Prereq: Enrollment in Fisher College of Business PhD program, or permission of instructor.
Repeatable to a maximum of 6 cr hrs or 2 completions.

8203 Seminar: Seminar in Organizational Theory  G  1½
Theory, research on environmental and structural characteristics of formal organizations and their correlates with particular emphasis on management of the organization in dynamic, global environment.
Prereq: Enrollment in Fisher College of Business Ph.D program, or permission of instructor.

8301 Management Seminar: Seminar in Human Resource Management  G  1½
Discussions of theory and research that serve as a foundation for the fields of human resources.
Prereq: Enrollment in the Fisher College of Business Ph.D program, or permission of instructor.
Repeatable to a maximum of 3 cr hrs.

8302.01 Advanced Seminar: Selected Issues in Human Resources Management I  G  1½
Advanced discussions of theory and research on human resource management.
Prereq: Enrollment in Fisher College of Business Ph.D program, or permission of instructor.
Repeatable to a maximum of 6 cr hrs.

8302.02 Advanced Seminar: Selected Issues in Human Resources Management II  G  1½
Advanced discussions of theory and research on human resource management.
Prereq: Enrollment in Fisher College of Business Ph.D program, or permission of instructor.
Repeatable to a maximum of 3 cr hrs.

8401 Management Seminar: Seminar in Strategic Management  G  1½
An examination of the concepts, models, theories, and research underlying contemporary thinking on strategic management.
Prereq: Enrollment in Fisher College of Business Ph.D program, or permission of instructor.
Repeatable to a maximum of 6 cr hrs.

8402.01 Advanced Seminar: Selected issues in Strategic Management I  G  1½
Advanced discussions of current theoretical developments and research in the business policy and strategic management field.
Prereq: Enrollment in Fisher College of Business Ph.D program, or permission of instructor.
Repeatable to a maximum of 6 cr hrs.

8402.02 Advanced Seminar: Selected Issues in Strategic Management II  G  1½
Additional advanced discussions of current theoretical developments and research in the business policy and strategic management field.
Prereq: Enrollment in Fisher College of Business Ph.D program, or permission of instructor.
Repeatable to a maximum of 3 cr hrs.

8502.01 Advanced Seminar: Competitive Strategy  G  1½
Advanced discussions of theory and research in Competitive Strategy.
Prereq: Enrollment in Fisher College of Business Ph.D program, or permission of instructor.
Repeatable to a maximum of 3 cr hrs.

8601 Management Seminar: Micro Foundations of Management  G  1½
An examination of the micro foundations, theories, and models underlying the field of management.
Prereq: Enrollment in Fisher College of Business PhD program, or permission of instructor.
Repeatable to a maximum of 3 cr hrs.
72 Business Admin: Management & Human Rsrs

8602 Management Seminar: Macro Foundations of Management  G  1%
An examination of the macro foundations, theories, and models underlying the field of management.
Prereq: Enrollment in Fisher College of Business PhD program or permission of instructor. Repeatable to a maximum of 3 cr hrs.

8610 Preparing Manuscripts for Management Journals  G  1%
Students will work on skills needed to translate research into publishable papers. Prereq: Enrollment in Fisher College of Business Ph.D. program, or permission of instructor. Repeatable to a maximum of 4.5 cr hrs.

8611 Professional Development  G  1%
This is a PhD seminar on Professional Development designed to be taken over the regular 14-week sessions and made up of two parts, part one to be offered Autumn and part two during Spring semester; primarily for MHR PhD candidates.
Prereq: Enrollment in the Fisher College of Business Ph.D. program, or permission of instructor.

8780 Introduction to Micro Research Methods in Management  G  1%
Introduction to research design and methodology as it relates to the study of micro organizational phenomena.
Prereq: Enrollment in Fisher College of Business Ph.D. program, or permission of instructor. Repeatable to a maximum of 3 cr hrs.

8781 Introduction to Macro Research Methods in Management  G  1%
Introduction to research design and methodology as it relates to the study of macro organizational phenomena.
Prereq: Enrollment in Fisher College of Business Ph.D. program, or permission of instructor. Repeatable to a maximum of 3 cr hrs.

8999 Research in Management and Human Resources: Dissertation  G  1 - 12
Research for dissertation purposes only. Repeatable. This course is graded S/U.

Business Admin: Management Sciences

2320 Decision Sciences: Statistical Techniques  U  3
Examination of the use of statistical techniques in managerial decision-making processes; statistical inference, simple and multiple regression, time series.
Prereq: Math 1131 (132), or 1151 (152); and Stat 1430 (133); and CSE 1113, or 2111 (200); and Econ 2001.01 (200). Prereq or Conc: Econ 2002.01 (201). Not open to students with credit for 330. This course is available for EM credit.

2321 Business Analytics  U  1%
Examination of the use of business analytic models used in managerial decision making processes. Emphasis on formulation and interpretation of models; supported by spreadsheet based software.
Prereq: Math 1131 (132), or 1151 (152), or equivalent; and CSE 1113, or 2111 (200); and Econ 2001.01 (200), or equivalent; and Econ 2002.01 (201), or equivalent. Not open to students with credit for 331.

3130 Foundations of Operations Management  U  3
Introduction to operations & supply chain management to improve organizations; specifically analyzing, controlling & improving resources & processes to increase productivity, generate value-added output & meet business strategic & tactical goals.
Prereq: Math 1116, 1130, 1148, or equiv, and Econ 2001.01, or equiv. Not open to students with credit for 3230. Not open to students enrolled in the BSBA degree program.

3194 Group Studies  U  1 - 6
Group studies project.
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 6 completions.

3230 Introduction to Operations Management: Competitiveness in Organizations  U  3
Introduction to operations and supply chain management to improve manufacturing and service organizations; analyzing, controlling and improving resources and processes to increase productivity, generate value-added output and meet business goals.
Prereq: Econ 2001.01 (200), 2002.01 (201); and Stat 1430 (133) or equivalent. Not open to students with credit for 3130 (430) or 630, or to students enrolled in UUSS, UEx or PreBSBA-PR.

3230H Introduction to Operations Management: Competitiveness in Organizations  U  3
Introduction to operations and supply chain management to improve manufacturing and service organizations; analyzing, controlling and improving resources and processes to increase productivity, generate value-added output and meet business goals.
Prereq: Honors standing in BusAdm Honors cohort program. Not open to students with credit for 630H.

3331 Business Analytics: Data Management and Descriptive Analysis  U  3
Understand how organizations can successfully collect, organize, manipulate, use and present data.
Prereq: Econ 2001.01 and 2002.01 or equiv; and Math 1152 or 1161.01 or equiv; and CSE 2111 or equiv.

3332 Business Analytics: Application of Predictive Analytics to Business Data  U  3
Build and test predictive models that move from data to parameter estimation.
Prereq: Econ 2001.01 and 2002.01 or equiv, Stat 3202, and CSE 2111 or equiv.

3333 Business Analytics: Applied Prescriptive Analytics  U  3
Moving from estimating model parameters, to making data-informed business decisions.
Prereq: Econ 2001.01 or AEEDecon 2001; Econ 2002.01, Stat 3202, and CSE 2111.

4193 Individual Studies  U  1 - 6
Individual study projects in selected areas in Management Sciences.
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 6 completions. This course is progress graded (S/U).

4194.31 Group Studies  U  1 - 6
Group studies projects.
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 6 completions.

4194.32 Group Studies  U  1 - 6
Group studies projects.
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 6 completions.

4194.33 Group Studies  U  1 - 6
Group studies projects.
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 6 completions.

4232 Operations Planning and Control  U  3
Review of a Planning and Control System. Theoretical frameworks and utilization of techniques to execute strategic and tactical goals to increase productivity and effectiveness of forecasting, scheduling, and inventory and capacity resources.
Prereq: 2200 (330), 2321 (331), 3230 (630), and AcctMIS 2200 (211), 2300 (212); and BusMHR 2291 or 2292 (BusADM 499.01). Not open to students with credit for 732.

4233 Operations Management Analytics  U  3
A study of data and modeling tools used in operations management. Emphasis is spreadsheet and database applications.
Prereq: 2230 (330), 2321 (331), 3230 (630), and AcctMIS 2200 (211), 2300 (212); and BusMHR 2291 or 2292 (BusADM 499.01). Not open to students with credit for 733.

4234 Service Operations  U  3
Surveys a broad framework of key operations management challenges, while also focusing on a broad variety of different services via in-depth case studies.
Prereq: 2230 (330), 2321 (331), 3230 (630), and AcctMIS 2200 (211), 2300 (212); and BusMHR 2291 or 2292 (BusADM 499.01).

4237 International Operations Management  U  3
Current influences, practices and standards for structural and infrastructural decision making across national boundaries. Explores complexity of managing geographically dispersed operations with relationships between multiple entities.
Prereq: 2230 (330), 2321 (331), 3230 (630), and AcctMIS 2200 (211), 2300 (212); and BusMHR 2291 or 2292 (BusADM 499.01).

4239 Managing Process Improvement  U  3
Describes the basics of establishing and managing a Lean process in service, office and manufacturing operations. We will look at how we can add value in delivery of goods or services to the customer.
Prereq: 2230 (330), 2321 (331), 3230 (630), and AcctMIS 2200 (211), 2300 (212); and BusMHR 2291 or 2292 (BusADM 499.01). Not open to students with credit for 739.

4240 Management of Technology  U  3
Intended for a broad range of business careers in which management of technological operations is critical for an organization's competitive advantage. Topics include methods to design, measure and improve technologies.
Prereq: 2230 (330), 2321 (331), 3230 (630), and AcctMIS 2200 (211), 2300 (212); and BusMHR 2291 or 2292 (BusADM 499.01).

4242 Business Sports Analytics  U  3
Analytical techniques and quantitative methods are on the rise in many areas of industry, and, of late, have made their foray into the sports realm. Skills such as critical thinking, mathematical modeling, statistical analysis, predictive analytics and optimization are crucial in the data-centric realm. The class seeks to develop and refine these skills in the business application area of sports.
Prereq: Stat 3202, or permission of instructor.

4250 Six Sigma Principles  U  3
Designed to familiarize students with the Six Sigma process improvement methodology and to provide them an opportunity to practice using Six Sigma Black Belt tools.
Prereq: 2230 (330), 2321 (331), 3230 (630), and AcctMIS 2200 (211), 2300 (212); and BusMHR 2291 or 2292 (BusADM 499.01). Not open to students with credit for 710.

4251 Six Sigma Projects  U  3
Six Sigma Projects class.
Prereq: 2250 (710). Not open to students with credit for 711.
Sustainable Operations

There is increasing pressure on businesses to pay more attention to the environmental consequences of the raw materials they source, processes they deploy, and the products and services they offer. Recognizing that operations are at the core of any sustainable enterprise, this course addresses issues related to sustainable operations in three modules.

Prereq: 2320, 2321, 3230, AcctMIS 2200, 2300, and BusMHR 2292.

Purchasing and Supply Chain Management

Designed to explore the industrial-institutional purchasing cycle for operating supplies, raw materials, components and capital equipment within the context of the Integrated Supply Chain Management Organizational Concept.

Prereq: 2320 (330), 2321 (331), 3230 (630), and AcctMIS 2200 (211), 2300 (212); and BusMHR 2291 or 2292 (BusAdm 499.01). Not open to students with credit for 735.

Purchasing Strategy

Strategic purchasing is a methodology used in many businesses to realize the greatest amount of benefit to the company while still effectively managing the costs associated with the acquisition of raw materials and operational components.

Prereq: 2320 (330), 2321 (331), 3230 (630), AcctMIS 2200 (211), 2300 (212) and BusMHR 2291 or 2292 (BusAdm 499.01). Not open to students with credit for 736.

Strategic Global Sourcing

This course focuses on the strategic design and management of the global supply base. The course focuses on identifying and understanding risks and uncertainties related to make-buy, location, and on-going supplier management. Beyond that, it focuses on cross-functional decision-making under risk and uncertainty in this context.

Prereq: 2320 (330), 2321 (331), 3230 (630), AcctMIS 2200 (211), 2300 (212); and BusMHR 2291, 2292, or BusAdm 499.01.

Undergraduate Research in Management Sciences

Undergraduate Research in Management Sciences for non-honors students.

Prereq: BusAdm 2291 (499), and Jr. standing, and permission of instructor. This course is progress graded.

Honors Research

Special topics research in Management Sciences: Research evaluated through papers, thesis, and/or special examinations.

Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 12 cr hrs or 6 completions. This course is progress graded.

Data Analysis for Managers

Introduction to data analysis and statistics for business. Emphasis on achieving an application-oriented understanding of statistical inference and regression analysis and their use in decision making.

Prereq: Enrollment in MHRM or SMB-Marketing Program. Not open to students with credit for 870.

Data Analysis for Financial Management Part I

Introduction to data analysis and statistics for business. Emphasis on achieving an application-oriented understanding of statistical inference and regression analysis and their use in decision making. Part 1 of 2 course sequence.

Prereq: Enrollment in MBOE or SMB-Finance Program Course. Not open to students with credit for 870. This course is progress graded.

Data Analysis for Financial Management Part II

Introduction to data analysis and statistics for business. Emphasis on achieving an application-oriented understanding of statistical inference and regression analysis and their use in decision making. Part 2 of 2 course sequence.

Prereq: Enrollment in MBOE or SMB-Finance Program Course. Concur: 6221. Not open to students with credit for 870.

Statistics and Data Analysis for Managers

Students will learn how to work with data, formulate questions, and most importantly, learn comprehensive problem solving techniques to extract and explain pertinent information from data. The course will track the problem solving process from problem formulation to data acquisition/cleaning to data analysis and conclusion to communication of the results.

Prereq: Enrollment in the SMB-A program, or permission of instructor.

Individual Studies

Individual study projects in selected areas in Management Sciences.

Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 6 completions. This course is progress graded (SU).

Group Studies

Group studies projects.

Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 6 completions.

Group studies projects.

Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 6 completions.

Group studies projects.

Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 6 completions.

Operational Excellence in a Service Environment

Surveys a broad framework of key principles of service operations, detailing how they can be leveraged to devise a successful service strategy. Starts by covering building blocks of service operations and examines the application of these tools across various online and offline services.

Prereq: MBA 6233, or permission of instructor.

The Business of Healthcare

Focuses on the evolving and competitive issues facing the industry today, giving students the tools to adapt and excel under demanding circumstances. Students work to become effective leaders by gaining in-depth knowledge of business concepts, analytical skills and a broad understanding of health-care industry dynamics.

Prereq: Enrollment in MBA or WPMBA program. Not open to students with credit for 814.

Service and Healthcare Business Operations

Examines how techniques including lean, six sigma and value stream mapping are increasingly being utilized in service businesses, as well as to improve both flow (Cost) and patient safety outcomes in medicine.

Prereq: Enrollment in MBA or WPMBA program.

Healthcare and Service Analytics

This course develops the quantitative thinking and skills needed to identify opportunities, develop models, and interpret results related to operational decision-making in service industries. Students will gain a practical understanding of the essential statistics needed for data analytics while working on a group project. Material will be presented in a hands-on manner using computer-based tools.

Prereq: MBA 6273, or permission of instructor.

Simulation, Risk Analysis, and Decision Making

Focuses on analyzing management decisions that involve uncertainty, risk and complexity. Students will explore the Monte Carlo simulation, forecasting and decision tree analytical methods with a strong emphasis on their proper use and application.

Prereq: MBA 6271. Not open to students with credit for 855.

Project Management

Introduces challenges senior managers face in companies that run multiple projects with a focus on overall project portfolio management, project selection, resource allocation between projects & organizational team design. Students identify their strengths & weaknesses in projects with a creative problem-solving exercise & experience real-life applications with visits from local project managers.

Prereq: Enrollment in Fisher College of Business Grad program, or permission of instructor. Repeatable to a maximum of 3 cr hrs.

Manufacturing Planning and Control for Supply Chain Management

Examines the overall structure of the planning and control function in managing operations, a critical link for the planning activities in many areas of a business. Topics covered include forecasting, sales and operations planning (S&OP), master production scheduling (MPS), material requirements planning (MRP), capacity management, inventory management, and Just-in-time (JIT) techniques.

Prereq: Enrollment in MBA or WPMBA program. Not open to students with credit for 835.

Supply Chain Analytics: Matching Supply with Demand

Explores how firms can better organize their operations so they more effectively align supply with demand for products and services. Students will learn how to assess supply flexibility and manage demand for a fixed supply and explore topics including flexible capacity management, short-life-cycle forecasting, quick response, revenue management, buy-back contracts and revenue-sharing contracts.

Prereq: MBA 6231 and 6232, or 6233, and enrollment in MBA or WPMBA. Not open to students with credit for 832.

Supply Chain Analytics: Matching Supply with Demand

Explores how firms can better organize their operations so they more effectively align supply with demand for products and services. Students will learn how to assess supply flexibility and manage demand for a fixed supply and explore topics including flexible capacity management, short-life-cycle forecasting, quick response, revenue management, buy-back contracts and revenue-sharing contracts.

Prereq: MBA 6231 and 6232) or 6233, and enrollment in MBA or WPMBA. Not open to students with credit for 832.

Supply Chain Analytics: Matching Supply with Demand

Explores how firms can better organize their operations so they more effectively align supply with demand for products and services. Students will learn how to assess supply flexibility and manage demand for a fixed supply and explore topics including flexible capacity management, short-life-cycle forecasting, quick response, revenue management, buy-back contracts and revenue-sharing contracts.

Prereq: MBA 6231 and 6232) or 6233, and enrollment in MBA or WPMBA. Not open to students with credit for 832.

Strategic Global Sourcing

Focuses on the challenges related to global sourcing, starting with ownership (make-buy) and location (offshore-onshore). Among other topics, students explore fundamental trade-offs in sourcing organization, such as centralizing or decentralizing.

Prereq: MBA 6231 and 6232, and enrollment in MBA, WPMBA, or MBLE program. Not open to students with credit for 837.
As healthcare organizations face challenges such as rising costs & complexity, as well as increasing demand for limited resources, significant opportunity exists to better manage their operations. This course offers operations management tools to examine the healthcare value chain & analyze healthcare organizations using qualitative & quantitative principles & develop solutions to common problems.

Prereq: Enrollment in MBA or WPMBA program.

Introduces the skills and discipline needed to lead and learn in a continuous improvement environment in a hands-on, participative manner. Students who complete the class can immediately contribute to an organization's efforts in continuous improvement, whose principles are used by many leading organizations in all sectors to outpace competitors year after year.

Prereq: Enrollment in MBA, WPMBA, or MBLE program. Not open to students with credit for 840.

Familiarizes students with the Six Sigma process improvement methodology by practicing with its tools. Supplemented with an online textbook from Moresteam.com, project simulation that runs throughout the semester and Minitab statistical software.

Prereq: MBA 6271 (570), or enrollment in MBLE program. Not open to students with credit for 810.

Teams of students apply the Six Sigma body of knowledge through a real-world project at an area company. Projects will follow the DMAIC body of knowledge as students and coaches work through its tools to achieve process improvement.

Prereq: 7242 or 7243. Not open to students with credit for 811.

Provides business students with an overview of artificial intelligence, focusing on modern machine learning methods and applications. We study and implement supervised and unsupervised machine learning systems using software and data from practical, business contexts. Upon completion, participants will be able to identify and capitalize on opportunities to create value with artificial intelligence.

Prereq: MBA 6273 or equivalent.

Business Analytics is the process of transforming raw data into insights and predictions. This course is on the fundamentals of data management-the art and science of collecting, organizing, cleaning, and manipulating raw data in a variety of formats and from multiple sources, and being able to do it efficiently and at scale using R.

Prereq: Enrollment in the SMB-A program, or permission of instructor.

An essential element of any business model is the design and the delivery of services and goods. Many organizations are able to perform this function effectively in the short-term. But only a few organizations demonstrate sustained performance over an extended period of time. We refer to these organizations as pioneers in business model innovation.

Prereq: Enrollment in MBA, WPMBA, or MAcc program. Not open to students with credit for 634.

Reviews several sustainable operations strategy models and examines different ways of adopting eco-efficiency principles into business operations through waste reduction and design for recovery. Highlights factors that promote these efforts, such as environmental laws and product returns.

Prereq: Enrollment in MBA or WPMBA program.

This course is designed to introduce students to commonly used software programs in data science and improve students’ problem solving skills and logical thought processes. Students will be exposed to R, SAS, and SPSS.

Prereq: MBA 6271 or 6273.

Designed to equip students with competencies in translating real-world problems into forms that such technologies can assist with, to portray/visualize these translations in ways that enhance the understanding of the dynamics of these problems, to structure mechanisms that derive suggested solutions, to clearly convey the justification and practicality of final solutions to others.

Prereq: Enrollment in the MBA or WPMBA program; or permission of instructor.

Analytical techniques and quantitative methods are on the rise in many areas of industry, and, of late, have made their foray into the sports realm. Skills such as critical thinking, mathematical modeling, statistical analysis, predictive analytics and optimization are crucial in the data-centric realm. The class seeks to develop and refine these skills in the business application area of sports.

Prereq: MBA 6271, and enrollment in MBA or WPMBA program.

Develop a unifying framework for analyzing strategic issues in operations. Use theory and cases to illustrate and explore the concept of operations and technology strategy. Covers strategic decisions on technology, facilities, vertical integration, human resources, global operations and social issues.

Prereq: Enrollment in MBA, WPMBA, or MAcc program. Not open to students with credit for 845.

Introduces three important methods: Hoshin Kanri (or policy deployment); Value Stream Mapping, and A3 storyboards. We will also begin defining projects and use the methods covered to analyze and document the value streams.

Prereq: Enrollment in MBOE. Not open to students with credit for 840.02.

Capstone Project is a supervised practical project executed by the student with the help of a team in the student’s own workplace. A faculty coach supervises and guides the effort and a company sponsor supports the effort of the student team.

Prereq: Enrollment in MBOE. Not open to students with credit for 841. Repeatable to a maximum of 6 cr hrs.

Presents students with the state-of-the-art strategic and operational approaches to planning and implementing effective change across an enterprise. Students will be taught to identify and analyze concerns and implement solutions.

Prereq: Enrollment in MBOE. Not open to students with credit for 842.

The objective of this course is to present students with the state-of-the-art tools for stabilizing operations and maintaining stability. Students will be taught to identify and analyze strategic core enterprise-wide concerns and implement solutions.

Prereq: Enrollment in MBOE. Not open to students with credit for 843.

This class will cover flow in both service and manufacturing environments. We will consider questions such as how to achieve patient flow in a hospital; and whether Materials Requirements Planning systems and flow processes can co-exist.

Prereq: Enrollment in MBOE. Not open to students with credit for 845.

The explicit link between problem solving and lean activities such as policy management, standardized work, visual management, human resources management and “go see” (gemba) activities are explained.

Prereq: Enrollment in MBOE. Not open to students with credit for 844.

Designed to familiarize students with the Six Sigma process improvement methodology and to provide them an opportunity to practice using Six Sigma Black Belt tools.

Prereq: Enrollment in MBOE. Not open to students with credit for 810. This course is progress graded.

Six Sigma Project is a supervised DMAIC project executed by the student and with the help of a team in the student’s own workplace. A faculty coach supervises and guides the effort and a company sponsor supports the effort.

Prereq: Enrollment in MBOE. Not open to students with credit for 841. Repeatable to a maximum of 6 cr hrs.

A focus on working across functions, companies and cultures and managing the Extended Value Stream.

Prereq: Enrollment in MBOE. Not open to students with credit for 848.

Visualization is an effective way to communicate the underlying patterns of data. Students will learn different types of visualization and how to compose and combine them using R. This course covers a wide range of visualization from simple to complex, static to interactive, and familiar to exotic. Students will also be exposed to how to describe and visualize unstructured data such as texts.

Prereq: 8400, 7250, enrollment in SMB-Analytics program, or permission of instructor.
Predictive Analytics

Business Analytics is the process of transforming raw data into insights and predictions. This course provides an introduction to core predictive analytics concepts and techniques as well as hands-on experience in applying these techniques to practical real-world business problems. Prereq: 7250, enrollment in SMB-Analytics program; or permission of instructor.

Sports Analytics

Analytical techniques and quantitative methods are on the rise in many areas of industry, and, of late, have entered the sports realm. Students will expand their critical thinking skills, explore the current state of sports analytics, summarize data creatively, improve data-based decision making, and optimize output in real-world situations as well as improve presentation skills to the non-quant. Prereq: Enrollment in SMB-Analytics program; or permission of instructor.

Managing Business Operations for Health Sciences

Many firms have demonstrated that operations management can be an effective competitive weapon. In conjunction with well-conceived marketing and financial plans, these firms have made major penetrations into markets worldwide. This course is designed to address the key operations issues in service and manufacturing organizations that have strategic as well as tactical implications. Prereq: Enrollment in the Graduate Business Minor in Health Sciences.

Capstone: Healthcare Business Solution Teams

This class focuses on diagnosing and solving real-world problems in life science and healthcare business practices. Prereq: 7701, BusFin 7702, and BusMHR 7703.

Advanced Topics in Management Sciences for EMBA

Advanced Topics in Management Sciences for students in the Executive MBA Program. Prereq: Enrollment in EMBA program. Repeatable to a maximum of 15 cr hrs or 7 completions.

Research in Management Sciences: Thesis

Research for thesis purposes only. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs or 4 completions. This course is progress graded (S/U).

Strategic Management of Operations I

Doctoral research seminar: critical analysis of research studies in different areas of operations management; linking operations to the corporate strategy; dimensions of operations strategy. Prereq: Enrollment in BusAdm PhD program.

Strategic Management of Operations II

Doctoral research seminar: critical analysis of research in vertical integration decisions, and measuring operational effectiveness, interorganizational collaboration. Prereq: Enrollment in BusAdm PhD program.

Operations Planning & Control I

Doctoral research seminar: critical analysis of research in fundamental and classical operations management and operations research topics. Prereq: Enrollment in BusAdm PhD program.

Operations Planning & Control II

Doctoral research seminar: Critical analysis of research studies in inventory management, warehouse and facility location, vehicle routing, MRP and forecasting. Prereq: Enrollment in BusAdm PhD program.

Innovation Management

Doctoral research seminar: Critical analysis of research in portfolio management, NPD, managing NPD teams, distributed and platform innovation, and innovation implementation. Prereq: Enrollment in BusAdm PhD program.

Fundamentals of Operational Excellence

Doctoral research seminar: Critical analysis of research in quality management, lean, six sigma, designing operations to support and sustain innovation, integrating technology into operations. Prereq: Enrollment in BusAdm PhD program.

Service Operations I

Doctoral research seminar: critical analysis of research in designing effective service delivery models, service quality, measuring service performance, service profit chains. Prereq: Enrollment in BusAdm PhD program.

Service Operations II

Doctoral research seminar: Critical analysis of research in healthcare operations, retail operations, and IT service operations, sharing economies. Prereq: Enrollment in BusAdm PhD program.

Supply Chain Management I

Doctoral research seminar: Critical analysis of research in supply chain essentials, design, and management. Prereq: Enrollment in BusAdm PhD program.

Supply Chain Management II

Doctoral research seminar: critical analysis of research in buyer-supplier contracts, matching supply and demand, behavioral issues in supply chain. Prereq: Enrollment in BusAdm PhD program.

Operations Method I

Doctoral research seminar: critical analysis of philosophy of science, qualitative/case study research, survey-based research, research employing secondary data sources. Prereq: Enrollment in BusAdm PhD program.

Operations Method II

Doctoral research seminar: critical analysis of analytical research methods and dynamic programming. Prereq: Enrollment in BusAdm PhD program.

Operations Management Seminar Speaker Series

Doctoral research seminar: Critical analysis of research in different areas of behavioral operations practice; practice in developing research questions and formulating hypotheses; presentation of original research of publishable quality. Prereq: Enrollment in BusAdm PhD program. Repeatable to a maximum of 3 cr hrs.

Research in Management Sciences: Dissertation

Research for dissertation purposes only. Prereq: Permission of instructor. Repeatable to a maximum of 48 cr hrs or 8 completions. This course is progress graded (S/U).

Professional Sales Readiness

Learn the consultative process for problem-solving and persuasion that is essential for sales as well as success in any field. Open to all majors. This experiential, instructor-led online course can be accessed from anywhere with high-speed internet. In addition to solid framework for sales success, it includes a sales aptitude assessment, personal branding for job and resume/cover letter writing.

Foundations of Marketing

Presents the concepts, framework, and tools of market-based management. Topics include the marketing concept and the role that product, price, promotion and distribution play in marketing strategy and implementation. Prereq: Math 1116, 1130, 1148, or equiv, and Econ 2001.01, or equiv. Not open to students with credit for 3250. Not open to students in BSBA.

Group Studies

Topics in Marketing and Logistics

Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 6 completions.

Introduction to Entrepreneurial Marketing

Focuses on marketing concepts of entrepreneurs leading growth-oriented companies. Typically these are small, young companies with ambitions to become major enterprises. Prereq: Econ 2001.01 (200), or ADEcon 200, or equiv, and Math 1130 (130), or equiv. Not open to students with credit for 4241 or 490.

Principles of Marketing

Presents the concepts, framework and tools of market-based management to deliver superior customer satisfaction, value and profitability. The focus of the course is on identifying, creating, delivering and measuring value creation. Prereq: Econ 2001.01 and 2002.01. Not open to students with credit for 3150 (650) or 450 or to students enrolled in UUSS, UExp or PreBSBA-PR.

Logistics Management

Concepts and methods used to plan and manage logistics activities in a business environment. Understanding of the components of logistics management and tradeoffs required to manage the integrated flow of goods through the supply chain. Prereq: Econ 2001.01 (200), or equivalent; and 2002.01 (201), or equivalent. Not open to students with credit for 780 or to students enrolled in UUSS, UExp, or PreBSBA-PR.

Logistics Management for EEDS

Provides an overview and working knowledge of logistics for students majoring in Environment, Economy, Development, and Sustainability. Provides a survey of key logistics concepts along with an understanding of how logistics applies to the customer lifecycle, how logistics models are developed, logistics and risk management and continuous improvement. Prereq: Jr standing or above, and enrollment in EEDS program. Not open to students with credit for 3380, or students in BSBA.

Individual Studies

Topics in Marketing and Logistics. Prereq: Permission of instructor. This course is graded S/U.

Group Studies

Topics in Marketing and Logistics. Prereq: Permission of instructor.

Group Studies

Topics in Marketing and Logistics. Prereq: Permission of instructor.
76 Business Admin: Marketing & Logistics

4201 Consumer Behavior U 3
Examine how and why people behave as consumers. Its goals are to provide an understanding of consumer behavior and to provide experience in the application of this knowledge to marketing, management and social policy decision making.
Prereq: 3250 (650), and AcctMIS 2200 (211), 2300 (212), and BusMGT 2320 (330), 2321 (331); and BusMHR 2291 or 2292 (BusADM 499.01). Not open to students with credit for 750.

4202 Marketing Research U 3
Course examines the role of marketing research in the formulation and solution of marketing problems. Emphasis is placed on problem formulation, research design, data collection methods (instruments, sampling, operations) and analysis techniques.
Prereq: 3250 (650), and AcctMIS 2200 (211), 2300 (212), and BusMGT 2320 (330), 2321 (331); and BusMHR 2291 or 2292 (BusADM 499.01). Not open to students with credit for 758.

4203 Marketing Strategy U 1½
This case course focuses on strategic planning examining how environmental factors affect long-term marketing strategies, how firms adapt to opportunities and threats in dynamic environments and how to assess development of competitive advantages.
Prereq: 4201 (750), 4202 (758), and BusMHR 2292 (BusAdm 499.01), or equiv. Not open to students with credit for 752.

4204 Marketing Projects U 3
In this advanced marketing course students will act as a consulting team and work with a client firm on a marketing problem, produce a report and present their work.
Prereq: 4201 (750), 4202 (758), and BusMHR 2292 (BusAdm 499.01), or equiv; or enrollment in regional campus General Business Program.

4210 Advanced Market Research and Analytics U 1½ - 3
Applications of modern marketing research procedures to a variety of marketing problems. Emphasis is placed on survey design and sampling, attitude measurement, perceptual mapping, market segmentation, conjoint analysis, and measurement of customer satisfaction.
Prereq: 4201, 4202, and BusMHR 2292, or equiv. Not open to students with credit for BusMgt 3333.

4211 Market Analysis, Development & Forecasting U 1½
Before a new product can be launched, or new customers targeted a firm must assess the size and demand for an offering. Methods used to forecast consumer behavior, market share, and sales (for production and inventory control) will be examined.
Prereq: 4201 (750), or 4202 (758), or equiv., and BusMHR 2292 (BusAdm 499.01).

4212 Customer Relationship Management U 1½
Examines the theories of methods used to identify profitable customers, understand their needs and wants, and how to build a bond with them by developing customer-centric products and services directed toward providing customer value.
Prereq: 4201 (750), 4202 (758), and BusMHR 2292 (BusAdm 499.01), or equiv.

4220 Sales Management U 1½
Provides an overview of the sales management process. It covers topics, such as sales force planning, budgeting, recruiting, selection, training, compensation, supervision, development and control.
Prereq: 4201 (750), 4202 (758), and BusMHR 2292 (BusAdm 499.01), or equiv. Not open to students with credit for 759.

4221 Professional Selling U 1½
Provides a practical, hands-on understanding of the professional selling process. Students will learn how companies use personal selling to enhance their business and develop the skills necessary to be an effective account manager.
Prereq: 4201 (750), 4202 (758), and BusMHR 2292 (BusAdm 499.01), or equiv. Not open to students with credit for 761.

4222 Services Marketing U 1½
Examines customer touch point analysis, brand consistency and integrating customer information across the organization. Issues addressed: understanding service failure and recovery, management of service employees and the establishment of a service culture.
Prereq: 4201 (750), 4202 (758), and BusMHR 2292 (BusAdm 499.01), or equiv. Not open to students with credit for 760.

4223 Foundations of Sales and Sales Management U 3
Examines the basics of business-to-business professional selling and provides core sales management building blocks. Emphasizes the importance of building relationships and adding substantial value to business customers while providing a theoretical and practical overview of the selling and buying process, salesforce structure, and decision tools.
Prereq: 4201, 4202, and BusMHR 2292, or equiv. Not open to students with credit for 4220 and 4221.

4230 Advertising Management U 1½
Provides the tools needed to develop, manage and evaluate an integrated marketing communication campaign. Communication fundamentals, goal setting, creative and media strategy, campaign development and measurement issues are explored.
Prereq: 4201 (750), 4202 (758), and BusMHR 2292 (BusAdm 499.01), or equiv. Not open to students with credit for 755.

4231 Promotional Strategy U 1½
Examines how marketers utilize promotional campaigns to enhance marketing efforts. The tools needed to design, evaluate and analyze effectiveness of promotions, sponsorships, events and branded entertainment programs are explored.
Prereq: 4201 (750), 4202 (758), and BusMHR 2292 (BusAdm 499.01), or equiv. Not open to students with credit for 755.

4232 Digital Marketing U 3
Examines the how marketers can utilize emerging media (electronic, online, social and mobile) to promote customer engagement, enhance their traditional marketing mix, and measure the effectiveness of marketing efforts.
Prereq: 4201, 4202, and BusMHR 2292, or equiv.

4233 Advertising and Promotional Strategy U 3
Provides the tools needed to develop, manage and evaluate an integrated marketing communication campaign. Examines how marketers utilize advertising and promotional programs to enhance marketing efforts. Communication fundamentals, goal setting, creative and media strategy, campaign development and measurement issues, and pricing implications are explored.
Prereq: 4201, 4202, and BusMHR 2292, or equiv.

4240 New Product Management U 1½
Examines strategies for development of successful new products. The five modules of the process (i.e., opportunity identification, concept generation, concept evaluation, product design and development, and launch) will be covered.
Prereq: 4201, 4202, and BusMHR 2292, or equiv.

4241 Entrepreneurial Marketing U 1½
Examines best practices in Entrepreneurial Marketing including analysis of marketing opportunities, identification of target audience, development of marketing strategy, brand positioning and an integrated marketing plan.
Prereq: 4201 (750), 4202 (758), and BusMHR 2292 (BusAdm 499.01).

4251 Retail Management U 1½
Examines contemporary distribution channels; focus on strategic decisions for successful retail practices; examine industry trends to highlight how companies design and manage retail and e-commerce environments.
Prereq: 4201 (750), 4202 (758), and BusMHR 2292 (BusAdm 499.01), or equiv. Not open to students with credit for 753.

4252 Social Marketing & Public Policy U 1½
Examines social marketing, which seeks to benefit a targeted population and the general society rather than a marketer or firm. Non-profit, cause marketing, corporate social responsibility, and sustainability issues are explored.
Prereq: 4201 (750), 4202 (758), and BusMHR 2292 (BusAdm 499.01), or equiv.

4253 Global Marketing U 1½
Examines the theory of marketing across national borders, as well as marketing and market research within different foreign environments, including the development of marketing strategies by the international company. Marketing majors only.
Prereq: 4201 (750), 4202 (758), and BusMHR 2292 (BusAdm 499.01), or equiv. Not open to students with credit for 4254 (757).

4254 International Marketing U 3
For International Business majors only. Examines theory and practice of marketing across national borders, marketing and market research within different foreign environments, and development of marketing strategies by the international company. Does not count as elective credit for the Major.
Prereq: 3250 (650) and BusMHR 2292 (BusAdm 499.01). Not open to students with credit for 4253 (757).

4255 Sustainability Marketing for Consumers, Firms & Society U 3
This course is designed to provide students with the knowledge to enhance sustainable behaviors in firms, among consumers and in society at large. In doing so, this course will include frameworks for understanding how to influence sustainable practices, consumer response to sustainability, and sustainability and marketing communication in the marketplace.
Prereq: 3250 or AEDEcon 3102.

4380 Advanced Logistics Management U 1½
Advanced coverage of the concepts and methods used to plan and manage logistics activities in a business environment; in-depth understanding of the components of logistics management and tradeoffs required to manage the integrated flow of goods.
Prereq: 3380, and AcctMIS 2200 (211), 2300 (212), and BusMGT 2320 (330), 2321 (331); and BusMHR 2291 or 2292 (BusAdm 499.01).

4382 Logistics Analytics U 3
Will equip student with the tools and skills necessary to recognize, analyze and solve significant problems in the operation of a logistics system through the application of techniques using spreadsheet analysis, optimization and simulation.
Prereq: 4380, BusMgt 2320 (330), 2321 (331), and BusMHR 2292 (BusAdm 499.01). Not open to students with credit for 761.
4383 Supply Chain Management  U  1
Focuses on distinction between logistics and supply chain management; cross-functional integration of key business processes within the firm and across networks of firms that comprise supply-chain; framework for supply chain management.  Prereq: 3380, and AcctMIS 2200, 2300, and BusMgt 2320, 2321; and BusMHR 2291 or 2292.

4385 Building a Sustainable Supply Chain  U  1
Focuses on understanding how to measure and impact the long-term sustainability of a company's supply chain operations; learn practices for reducing carbon footprints and creating a more resilient supply chain, while meeting financial goals.  Prereq: 3380 or 3381; and AcctMIS 2200, 2300, and BusMgt 2320, 2321; and BusMHR 2291 or 2292.

4386 Logistics Technology - Fundamentals  U  1
Focus on the operational use of logistics software technologies such as transportation management systems, warehouse management systems, and inventory management systems. Course taught in a lab environment with tools for lectures, exercises, and HW.  Prereq: 3380, and AcctMIS 2200 and 2300, and BusMgt 2320 and 2321; and BusMHR 2291 or 2292.

4387 Lean Logistics  U  1
Examines using Lean tools and insights to remove bottlenecks and impediments to efficient, effective logistics, resulting in reduced logistics costs and improved service.  Prereq: 4380 and BusMHR 2292 (BusAdm 499.01).

4388 Warehouse Operations  U  1
Study of general warehouse operations, focusing on facility layout, financial analysis, labor relations, warehouse management systems, productivity improvement and measurement; impact of corporate and industry strategies on warehouse operations.  Prereq: 3380, and AcctMIS 2200 (211), 2300 (212), and BusMgt 2320 (330), 2321 (331); and BusMHR 2291 or 2292 (BusAdm 499.01).

4389 Logistics Technology - ERP Systems  U  1
Introduction to enterprise resource planning (ERP) systems with emphasis on understanding the differences between the major ERP systems on the market and using an ERP system to complete exercises for common business functions.

4998 Undergraduate Research in Marketing & Logistics  U  1-3
Undergraduate Research in Marketing & Logistics for non-honors students.  Prereq: BusAdm 2291 or 499, and Jr standing, and permission of instructor. Repeatable to a maximum of 12 or hrs or 4 completions. This course is progress graded.

4998H Honors Research  U  ½ - 4
Special Topics Research in Marketing and/or Logistics. Research evaluated through papers, thesis, and/or special examinations.  Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 9 or hrs or 3 completions. This course is progress graded.

5381 Transportation Management  U  G  3
Issues and strategies in transportation management and policy; emphasis on study of modes of transportation, intermodal and international transportation, capacity management, competitive relations between modes; aspects of carrier management.  Prereq: 3380, and AcctMIS 2200 (211), 2300 (212), and BusMgt 2320 (330), 2321 (331); and BusMHR 2291, or 2292 (BusAdm 499.01), or enrollment in MBLE. Not open to students with credit for 784.

5389 Logistics Decision Making  U  G  3
Analysis of logistics decision making in the context of the business environment; application of the solution methods needed to meet business goals. Capstone designed to expand on previous courses and prepare students to implement logistics concepts.  Prereq: 4380. Prereq or concour: 4382 and BusMHR 2292 (BusAdm 499.01). Not open to students with credit for 782.

6243 Managerial Economics  G  3
Provides a framework for analyzing managerial decisions and problems using selected topics from fundamental microeconomic theory. This framework will be used in conjunction with strategy, case studies, ethical considerations, and combined professional experience to improve managerial decision-making.  Prereq: Enrollment in the MBA program, or permission of instructor.

7193 Individual Studies  G  ½ - 4
Topics in Marketing and Logistics.  Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 6 completions. This course is graded S/U.

7194.51 Group Studies  G  1 - 4
Topics in Marketing and Logistics.  Prereq: Permission of instructor.

7194.52 Group Studies  G  1 - 4
Topics in Marketing and Logistics.  Prereq: Enrollment in the MBA program, WP MBA program, or permission of instructor. Repeatable to a maximum of 9 cr hrs or 6 completions.
7226  Marketing Simulation  G  1½
Student teams analyze a business case and formulate their strategy for the firm. Within the context of a realistic and complex business simulation, students will implement their strategy through submission of marketing variable decisions and analysis of market response.
Prereq: MBA 6252 or 6253.
7227  Prescriptive Data Analysis  G  1½
Focuses on identifying the best course of action to take in response to what is known about the business and its environment. Students will develop skills in translating business objectives, threats and opportunities into actionable data collection and analysis. Students will also become exposed to and become proficient with concepts spanning the analysis of pre-existing, secondary data.
Prereq: MBA 6252 or 6253.
7228  Data Driven Marketing  G  1½
Increasing computing power allows companies amassing large amounts of customer data. As a consequence, marketing decisions are becoming more data driven. Students will learn statistical learning concepts related to marketing data analytics; tools, techniques, and advanced models will be introduced not only for predicting consumer choices but also for measuring the effectiveness of marketing effort.
Prereq: MBA 6252 or 6253.
7230  Customer Analytics  G  1½
Tools for the analysis of survey and marketplace data. Topics include design of the surveys, scale development, analysis of the recency, frequency and monetary value of transactions, web-based ‘click-stream’ data and others.
Prereq: MBA 6250, 6252, or 6253.
7243  Prescriptive Analytics  G  3
Focuses on prescriptive analytics to determine causal effects and identify optimal decisions in business. Emphasis on programming data analysis using the R statistical language.
Prereq: Enrollment in the SMB-A program, or permission of instructor.
7244  Bayesian Analysis  G  1½
Overview of recent developments and applications of Bayesian statistical methods in business analytics. Emphasis on developing a conceptual understanding of quantitative models, and their operational translation into methods for data analysis.
Prereq: Enrollment in the SMB-A program, or permission of instructor.
7245  Analytics of Micro Marketing Data  G  1½
Focus on the analytics of disaggregate marketing data including appropriate measurement scales and techniques for specific data types. Emphasis on modeling techniques and tools, such as textual analysis, utility-based analysis, and attribution models, to solve marketing problems in corporate setting.
Prereq: Enrollment in the SMB-Analytics program, or permission of instructor.
7247  Analytics for Macro Marketing Data  G  1½
A ‘macro’ approach to understanding the marketing decision process with implications stretching beyond the firm: i.e., consumers’ privacy, search and recommendation. Emphasis on data structures arising from online platforms and marketplaces as well as the prevalent technological and regulatory landscape in the industry.
Prereq: Enrollment in SMB-Analytics program.
7249  SMB-A Capstone Projects  G  3
The course provides students with an opportunity to apply, showcase, fine-tune and expand the skills and knowledge acquired in courses in the program by working through substantive real-world analytics projects from initial conception to the production of useful insights and improved decisions.
Prereq: Enrollment in SMB-Analytics program.
7300  Strategic Logistics Management  G  1½
Develop an understanding of key drivers of logistics performance and their inter-relationships with strategy and other functional areas. Focus on developing analytic, problem-solving, and cost trade-off management skills.
Prereq: Enrollment in MBA, MBBLE, or MAcc.
7301  Logistics Decision Making  G  1½
This case-based course will prepare students to make data-driven decisions on key logistics issues and then make these decisions actionable through a focus on appropriate solution methods needed to achieve firm financial goals.
Prereq: 7360.
7302  Logistics Analytics  G  1½
Focuses on the application of quantitative techniques. Problems addressed include demand forecasting, inventory control, and network design using spreadsheet analysis, optimization and simulation.
Prereq or concur: 7380.
7303  Supply Chain Management  G  1½
Students learn the distinction between logistics and supply chain management (SCM) and develop SCM skills with a focus on cross-functional integration of key processes within the firm and across the network of firms that comprise the supply chain.
Prereq or concur: MBA 6252 or 6253, or enrollment in MAcc program, or enrollment in MBLE program.
7308  Logistics Technology and Application  G  1½
Focus on the operational use and appropriate contextual use of logistics software technologies such as transportation management systems, warehouse management systems, inventory management and network design.
Prereq: 7380.
7387  Lean Logistics  G  1½
Examines using Lean tools and insights to remove bottlenecks and impediments to efficient, effective logistics, resulting in reduced logistics costs and improved service.
Prereq: 7380.
7388  Field Problems in Logistics  G  3
Advanced graduate studies course where students work in groups as consultants to solve actual business problems for clients. Objectives include developing problem solving skills and gaining practical experience.
Prereq: 7380.
7715  Attracting and Retaining Customers in Health Sciences  G  1½
This class focuses on the process of attracting and retaining customers in the health sciences industry. Students will explore how to drive growth through new patient acquisition and retention as well as by understanding the practice’s ability to provide value, and the patient’s needs in relation to that value.
Prereq: BusMgt 7701, BusFin 7400, and BusMHR 7264; and enrollment in the Graduate Business Minor in Health Sciences.
7800  Advanced Topics in Marketing and Logistics for EMBA  G  1½ - 3
Advanced Topics in Marketing and Logistics for students in the Executive MBA Program.
Prereq: Enrollment in Executive MBA program. Repeatable to a maximum of 15 cr hrs or 7 completions.
7999  Research in Marketing and Logistics: Thesis  G  1 - 12
Topics in Marketing and Logistics.
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 6 completions. This course is progress graded (S/U).
8250  Consumer Behavior  G  4
Study of the academic literature on consumer behavior with emphasis on the theoretical and empirical contributions of consumer research.
Prereq: Doct standing in BusAdm, or permission of instructor. Repeatable to a maximum of 8 cr hrs.
8252  Modeling Models  G  2 - 4
A study of recent model-based research in the marketing literature; emphasis on the strengths and weaknesses of various modeling approaches in specific problem areas and evaluation of model-based research.
Prereq: Doct standing in BusAdm, or permission of instructor. Not open to students with credit for 951. Repeatable to a maximum of 8 cr hrs or 4 completions. This course is progress graded.
8253  Recent Advancements in Marketing Research  G  1½ - 4
Provide students with exposure to leading marketing scholars and their most current research and give them an opportunity to critically evaluate it.
Prereq: Doct standing in BusAdm, or permission of instructor. Repeatable to a maximum of 9 cr hrs or 6 completions.
8380  Research Seminar in Logistics  G  1½
Research issues in logistics. For each topic, key literature will be reviewed and discussed to understand the current state of research in the area, evaluate the research methodologies employed, and identify gaps in the academic literature.
Prereq: 7380 and 7381, and enrollment in Fisher College of Business PhD Program. Repeatable to a maximum of 9 cr hrs.
8381  Research Seminar in Supply Chain Management  G  1½
Focuses on research issues in supply chain management.
Prereq: 7380 (880) and 7383 (885). Repeatable to a maximum of 9 cr hrs.
8382  Research Seminar in Transportation  G  1½
Research Issues in Transportation. For each topic, key literature will be reviewed and discussed to understand the current state of research in the area, evaluate the research methodologies employed, and identify gaps in the academic literature.
Prereq: 7380 and 7381, and enrollment in Fisher College of Business PhD Program. Repeatable to a maximum of 9 cr hrs.
8383  Optimization Modeling in Logistics  G  1½
Focus on the application of optimization modeling techniques to logistics problems. The goal is to familiarize students with advanced modeling techniques and learn how they have been applied to solve logistics problems in the academic literature.
Prereq: 7380 and 7381. Repeatable to a maximum of 9 cr hrs.
8385  Empirical Methods in Logistics & Supply Chain Management Research  G  1½
Overview of empirical research in Logistics and Supply Chain Management, with a focus on appropriate topics, literature review, and hypothesis development in empirical papers. Additional focus on data analysis through statistical and econometric methods.
Prereq: Enrollment in Fisher College of Business PhD program, or permission of instructor. Repeatable to a maximum of 9 cr hrs.
8386 Theory & Qualitative Methods in Logistics & Supply Chain Management Research
Introduction to multiple theoretical perspectives used in Logistics and Supply Chain Management research, as well as the qualitative methods utilized to explore theoretical concepts.
Prereq: Enrollment in Fisher College of Business PhD program, or permission of instructor. Repeatable to a maximum of 9 cr hrs.
8999 Research in Marketing and Logistics: Dissertation
Topics in Marketing and Logistics.
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 6 completions. This course is progress graded (S/U).

Business Technology

1151T General Economics
Study of macro and micro-economic principles applicable to business, agricultural and personal financial decision making.
Prereq or concourse: GenMath 1040T or Math 1050 or Math Placement Level R or higher. Not open to students with credit for AEDEcon 2001. This course is available for EM credit.
1201T Exploring Business
Promotes student success in college and preparation for a career; explores personal and career interests, needs, goals, and the support services available for student success.
1202T Software Applications
An overview of basic computer skills and study of the features and capabilities of presentations, word processing, spreadsheet and database software as decision management aids.
Prereq: Not open to students with credit for 202T. This course is available for EM credit.
2191T Business Internship
Experience of employment in a business to provide varied occupational experience, supervised by an employer, and coordinated by faculty. A grade of C or better required to meet graduation requirements.
Prereq: GPA 2.0 or above, and permission of instructor. Not open to students with credit for 290.02T or 290.03T. Repeatable to a maximum of 6 cr hrs.
2193T Individual Studies
Design to give an individual student an opportunity to pursue special studies not offered in other courses.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.
2194T Group Studies
Designed to give groups of students an opportunity to pursue special studies not offered in other courses.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.
2207T Problem Solving with Spreadsheets and Databases
A problem-solving approach to managing typical business scenarios utilizing spreadsheets and databases.
Prereq: 1202T (202T). Not open to students with credit for 204T and 205T. This course is available for EM credit.
2231T Fundamentals of Marketing
A survey of the field of marketing including functions, policies, problems, structure, strategies, and opportunities.
Prereq or concourse: 1151T (151T) or AEDEcon 2001 (200). Not open to students with credit for 231T. This course is available for EM credit.
2232T Personal Selling
A study of the basic principles and concepts of personal selling with emphasis on practical application and personal interaction.
Prereq: Not open to students with credit for 232T. This course is available for EM credit.
2240T Introduction to Project Management
An introduction to project management concepts and techniques focusing on how to initiate, plan, manage, control, and close a project.
This course is available for EM credit.
2241T Small Business Management
A general study of the field of small business focusing on policies, strategies, organization, operation, and problems associated with the operation of an entrepreneurial enterprise.
Recommended prerequisite: AEDEcon 2105.
Prereq: 1151T or AEDEcon 2001. This course is available for EM credit.
2244T Human Resource Management and Leadership
A study of human resource, supervisory, and leadership principles and practices that focus on recruitment, training, evaluating, and compensating employees for improved productivity.
This course is available for EM credit.
2247T Business Law
A study of legal principles, contracts, negotiable instruments, leases, sales, product liability, and consumer protection.
Prereq: Not open to students with credit for 247T. This course is available for EM credit.

Business Admin: Marketing & Logistics 79

2248T Introduction to Cooperatives
An examination of business organizations including cooperatives and non-cooperatives. Analysis of the role of government in American business, with emphasis on the history, legal basis, organization, and operation of cooperatives.
Prereq: Not open to students with credit for 248T. This course is available for EM credit.
2249T Fundamentals of Business Finance
A study of basic finance principles, such as financial institutions, time value of money, financial analysis, risk and return, budgeting, and investments.
Prereq: AEDEcon 2105 (BusTec 101T or 102T). Prereq or concourse: 1151T (151T) or AEDEcon 2001 (200). Not open to students with credit for 249T. This course is available for EM credit.
2250T Fundamentals of International Business
An overview of international business including the environment, strategies, issues, decisions, and challenges that global businesses encounter.
Prereq: 1151T or AEDEcon 2001. This course is available for EM credit.

Cancer Biology and Genetics

4998 CBG Undergraduate Research
Individual minor investigation in the field of virology, immunology, microbial pathogenesis, or cancer genetics. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.
5700 Introduction to Personalized Therapeutics and Pharmacogenomics
Exploration of the trend to therapy tailored to the individual patient rather than "one drug fits all," with individual differences in drug responses, with emphasis on genetic and genomic factors; ethical, regulatory and economic issues that impact drug therapies. Cross-listed in BioPrm and Phr.
6930 Individual Studies
Individual minor investigation in the field of virology, immunology, microbial pathogenesis or cancer genetics. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.
7741 Molecular Virology and Pathogenesis of Viruses
An integrated study of the molecular mechanisms of virus replication and host-virus relationships that control virus pathogenesis or use as a therapeutic agent.
Prereq: Grad standing, or permission of instructor. Cross-listed in MolGen and VetBios.
7931 Student Seminar in Cancer Biology and Genetics
Student and post-doctoral presentations of research.
Repeatable to a maximum of 6 cr hrs. This course is graded S/U.
8270 Biochemical Mechanisms of Carcinogenesis
Provide students with an overview of fundamental mechanisms leading to cancer. This will be done through review of current and classic literature.
Prereq: Course work in one year of Grad level Biochem, or permission of instructor. Cross-listed in MCDbio 8270.
8999 Research in Cancer Biology and Genetics
Research for thesis or dissertation purposes only.
Prereq: Grad standing in CBG. Repeatable to a maximum of 18 cr hrs or 18 completions. This course is graded S/U.

Catalan

5901 Catalan for Spanish Speakers I
Rapid introduction to Catalan language. Intended for students with at least High Intermediate level Spanish skills.
Prereq or concourse: Spanish 3401, 3403, or 3404, or equiv; or permission of instructor.

Center for Languages, Literatures and Cultures

3301.015 Intercultural Competence for Global Citizenship
This course is preparation for teaching in the one-week summer camp for middle school students. Students will learn the theories, skills and techniques involved in teaching area and will prepare the teaching materials that they will use in the summer camp. Students are also required to enroll in 3301.025.
Prereq: A grade of B or above in a 200-level world language course. Not open to students with credit for 2302S or 3302S. This course is progress graded. GE Service Learning course.
3301.025 Intercultural Competence for Global Citizenship
Summer Camp
Students will participate as assistants and instructors in a one-week summer camp for middle school students. Students will assist with the running of the camp, teach their area of expertise as it relates to intercultural competence and organize and teach an international game.
Prereq: 3301.015. Not open to students with credit for 2302S or 3302S. GE Service learning course.
3302S Intercultural Competence for Global Citizenship After School Program  U  G  3
Students will learn theories, skills and techniques involved in teaching their area of expertise as it relates to intercultural competence and will prepare the teaching materials that they will use at a local elementary and/or middle school.
Prereq: A grade of B or above in a 2000-level world language course. Not open to students with credit for 2301.025 or 3011.025. GE service learning course.

5100 Introduction to Community Interpreting  U  G  3
CLCC 5100 is an advanced course designed to introduce students to the foundational aspects of community interpreting. Students will explore the profession of community interpreting with special emphasis on its core ethical principles, protocols and skills, strategies for strategic mediation within the interpreted encounter, the professional identity and role of the community interpreter.
Prereq: 15 cr hrs in the same language.

5101 Introduction to Professional Translation  U  G  3
This course introduces students to the field, ethics, and methodologies of professional translation, as well as provides basic professionalization for a career in the field. Students will learn about the principles of translation, how to research for a translation, and develop the skills and tools to become professional translators.
Prereq: 15 cr hrs in the same language.

5102 Introduction to Literary Translation  U  G  3
This course will give students who want to practice literary translation in one or more of their language pairs an opportunity to develop their own translation projects through a variety of approaches.
Prereq: 15 cr hrs in the same language.

5103 Translation and Interpretation Practicum  U  G  3
The purpose of this course is to offer students an opportunity to consolidate translation/interpretation skills in their working languages in real life settings that are meaningful to them and relevant to their career aspirations. The precise configuration of the practicum experience will vary from student to student and should be agreed upon between the student and the course instructor.
Prereq: 5100, 5101, or 5102. This course is graded S/U.

3467S Issues and Methods in Tutoring Writing  U  3
Theories and practices in tutoring and writing; explores the writing-learning connections; prepares students to work as writing consultants/tutors for small writing groups.
Prereq: English 1110.01 (110.01), or equiv. Not open to students with credit for HumCol 467 or English 3467S (467). Cross-listed in English.

Chemical and Biomolecular Engineering

2194 Group Studies in Chemical and Biomolecular Engineering  U  1 - 6
Provides groups of students opportunities to pursue special studies not otherwise offered.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

2200 Process Fundamentals  U  G  4
Application of physicalchemical principles to problems of the chemical industry; stoichiometry and material balance.
Prereq: Chem 1220 (123), and Engr 1182 (Engineer 183.01). Prereq or concur: Math 2177 (294), and CPHR 2.0 or above, and permission of department. Not open to students with credit for 200 or 201.

2420 Transport Phenomena I  U  4
Introduction to momentum, mass, and heat transfer with emphasis on the analogies between them; practical applications of momentum transfer (fluid flow).
Prereq: 2200 (201), and Math 2177 or 415.01, and enrollment in CBE, FABEng, or EngPhys major; or Grad standing; or permission of instructor. Not open to students with credit for 420 or 521.

2523 Separation Processes  U  G  3
The application of mass and energy balances and transport phenomena such as fluid, heat, and mass transfer to chemical engineering separation operations of distillation, absorption, evaporation, extraction, drying, etc.
Prereq: 2200 (201), and enrollment in CBE major. Prereq or concur: 2420 (420), or permission of instructor or Grad standing. Not open to students with credit for 523.

3508 Thermodynamics  U  G  4
Application of the fundamental concepts and laws of thermodynamics to problems of the chemical industry; stress on computational problem work.
Prereq or concur: 2420 (420), and enrollment in CBE, FABEng, or EngPhys major; or permission of instructor. Not open to students with credit for 509.

3521 Transport Phenomena II  U  G  4
Emphasis on conduction, convective and radiation heat transfer, mass transfer and stagewise operations with applied computational problems.
Prereq: 2420 (420), and enrollment in CBE, FABEng, or EngPhys major; or permission of instructor or Grad standing. Not open to students with credit for 522.

3610 Kinetics and Reactor Design  U  G  4
Chemical and engineering principles for the design and operation of chemical reactors; kinetics of simple homogeneous systems and introduction to heterogeneous catalysis.
Prereq or concur: 3508 (509) or FABE 3120, and enrollment in CBE, or FABEng, or EngPhysics major; or permission of instructor; or Grad standing. Not open to students with credit for 610.

3631 Chemical and Biomolecular Engineering Unit Operations Laboratory I  U  G  2
Laboratory investigation of the operating characteristics and efficiency of chemical engineering equipment such as distillation, absorption, heat exchangers, and three phase mixing dynamics with mass transfer.
Prereq or concur: 2523 (523) and 3610 (610), and enrollment in CBE major. Not open to students with credit for 630 or 4630.

3632 Chemical and Biomolecular Engineering Unit Operations Laboratory II  U  G  2
Laboratory investigation of the operating characteristics and efficiency of chemical engineering equipment such as distillation, absorption, heat exchangers, and three phase mixing dynamics with mass transfer.
Prereq or concur: 2523 (523) and 3610 (610); and enrollment in CBE major. Not open to students with credit for 630 or 4630.

4193 Individual Studies in Chemical and Biomolecular Engineering  U  1 - 12
Provides the opportunity to pursue special studies or research in biomedical engineering not otherwise covered.
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 10 completions. This course is graded S/U.

4194 Group Studies in Chemical and Biomolecular Engineering  U  G  1 - 6
Provides groups of students opportunities to pursue special studies not otherwise offered.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

5624 Chemical Process Dynamics and Control  U  G  3
Study of the dynamics and control of chemical processes; mathematical models of simple processes, including feedback control, are derived, analyzed, and simulated.
Prereq: 2523 (523) or 3610 (610), and enrollment in CBE major; or Grad standing, or permission of instructor. Not open to students with credit for 624.

4760 Chemical and Biomolecular Engineering Process and Product Design Principles I  U  G  4
Process and product design concepts encompassing a broad spectrum of fundamental engineering principles including safety, industrial practices and heuristics, flowsheet synthesis, heat integration, process/product development concepts, economic evaluations, and optimization concepts.
Prereq: 3521, 3610 (610), and enrollment in CBE or EngPhysics major; or Grad standing; or permission of instructor. Not open to students with credit for 760.

4764 Chemical and Biomolecular Engineering Process Design and Development  U  G  4
Process design studies on selected chemical processes encompassing a broad spectrum of fundamental engineering principles; optimization studies utilizing economic and technical simulation.
Prereq or concur: 4760 (760), and enrollment in CBE major. Not open to students with credit for 762.

4998 Undergraduate Research in Chemical and Biomolecular Engineering  U  G  1 - 6
Supervised research in Chemical and Biomedical Engineering.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

4998H Honors Undergraduate Research in Chemical and Biomolecular Engineering  U  G  1 - 6
Supervised Honors level research in Chemical and Biomedical Engineering.
Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

4999 Chemical and Biomolecular Engineering Research for Thesis  U  G  1 - 5
Supervised research and project work arranged individually for students resulting in written thesis.
Prereq: GPA 3.0 or above, and permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

4999H Chemical and Biomolecular Engineering Research for Honors Thesis  U  G  1 - 5
Supervised research and project work arranged individually for honors students resulting in written Honors thesis.
Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

5194 Group Studies in Chemical and Biomolecular Engineering  U  G  1 - 6
Provides groups of students opportunities to pursue special studies not otherwise offered.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.
Introduction to Petroleum Engineering U G 3

Introduction to petroleum engineering, including fundamental petroleum engineering concepts, quantities and unit systems, petroleum geology, exploration, drilling, reservoir engineering, fluids and rock properties, production, well testing, enhanced/improved oil recovery. Prereq: Jr standing or above in Engineering, Earth Sciences, or Business. Concur: EarthSc 5661.

Petroleum Reservoir Engineering U G 3

Determination of reserves; material balance methods; aquifer models; fractional flow and frontal advance; displacement, pattern, and vertical sweep efficiencies in waterfloods; enhanced oil recovery processes; design of optimal recovery processes. Systematic theoretical and laboratory study of physical properties of petroleum reservoir rocks. Prereq: 5200. Concur: EarthSc 5661.

Petroleum Drilling and Production Engineering U G 3

The design and evaluation of well drilling systems; identification and solution of drilling problems; wellbore hydraulics, well control, casing design; well cementing directional drilling, offshore drilling, introduction to production operations and oil field equipment including onshore and offshore production systems. Prereq: 5200 and EarthSc 5661; or Grad standing; or permission of instructor.

Petroleum Project Evaluation U G 3

Economic analysis and investment decision methods in the petroleum industry; reserves estimation, depletion, petroleum taxation and market regulations, and projects of the type found in the industry; project evaluation case studies. Prereq: 5200 and EarthSc 5661.

Engineering Principles in Cancer U G 3

The purpose of this course is to introduce engineering principles in the context of cancer progression and therapy. Prereq: MechEng 3500, 3503, or CBE 2420; or permission of instructor. Not open to students with credit for BioMedE 5550 or MechEng 5550. Cross-listed in BioMedE and MechEng.

Computational Catalysis U G 3

Methods used to model catalyst reactivity at the atomic-scale; application of quantum methods, primarily density functional theory (DFT); kinetic Monte Carlo and microkinetic modeling; using DFT to simulate surface science and catalysis spectroscopy methods. Prereq: 3610 and Chem 4300; or Grad standing; or permission of instructor.

Catalysis and Catalytic Processes U G 3

Kinetics of catalytic processes, mass transfer in catalysis, catalyst preparation and characterization, deactivation of catalysts, catalytic reactors, and application of catalytic phenomena in industrial processes. Prereq: 3521 (522) and 3610 (610), or Grad standing. Not open to students with credit for 712.

Fuel Cells and Catalysis U G 3

An introduction to fuel cells and related concepts with an emphasis on the catalytic phenomena involved in fuel cells. Prereq: Chem 3508, 3610 (610), 509, Chem 4310, or 531, or Grad standing, or permission of instructor. Not open to students with credit for 713.

Particle Technology U G 3

Engineering processes involving particulates and powders. Multiphase transport phenomena and fluidization are emphasized. Prereq: 2523 (523), and Math 2177 or Math 415.01; or Grad standing; or permission of instructor. Not open to students with credit for 715.

Molecular Informatics U G 3

Overview of molecular informatics, with emphasis on its use in modern drug discovery and exploration of chemical structure-property relationships. Prereq: Sr or Grad standing in Engineering, or permission of instructor. Not open to students with credit for 734.

Cellular Nanotechnology U G 3

Application of nanotechnology to cells for sensing and subcellular manipulation. Synthesis and biological modification of quantum dots and magnetic nanostructures, their unique material properties, and their application. Prereq: Sr or Grad standing in Engineering, or permission of instructor. Not open to students with credit for 735 or BioMedE 765. Cross-listed in BioMedE 5635.

Chemical and Biomolecular Engineering U G 3

Introduction to principal aspects of air pollution, including engineering control of stationary sources, atmospheric chemistry, aerosol behavior, transport and dispersion modeling. Prereq: Sr or Grad standing, or permission of instructor. Not open to students with credit for 771.

Principles of Sustainable Engineering U G 3

Introduces the principles, techniques, and challenges of environmentally conscious decision making in chemical engineering. A study of systematic methods for the analysis and development of sustainable industrial products and processes. Prereq: 3508 or equivalent, Grad standing, or permission of instructor. Not open to students with credit for 772.

Introduction to High Polymer Engineering U G 3

Introduction to polymeric materials, polymerization methods and kinetics, polymer solution properties, molecular weight determination and polymer physical/mechanical properties. Prereq: 3610 (610) or Chem 2510 (251), or permission of instructor. Not open to students with credit for 773.

Polymer Membranes U G 3

Membrane separation mechanisms, transport models, permeability computations/measurements, membrane materials/types/modules, membrane contactors/reactors, and applications. Prereq: 3508 (509), or Grad standing; or permission of instructor. Not open to students with credit for 774 or MatScEn 774. Cross-listed in MatScEn 5774.

Rheology of Fluids U G 3

Principles of rheology, including the characterization of non-Newtonian materials, rheological equations of state, viscometric flows, measurements, and applications to the flow of industrial materials. Prereq: 2420 (420), or permission of instructor. Not open to students with credit for 775.

Introduction to Polymer Engineering at Macro-, Micro-, and Nanoscale U G 3

An introduction to nanomaterials and nanotechnology. Important polymeric micro/nanomaterials and structures, and their manufacturing techniques. Prereq: 3521 (521), MechEng 3500 (500), 4510 (510), MatScEn 2251 (401), or 3151 (526), or permission of instructor. Not open to students with credit for 777.

Design and Analysis of Experiments U G 3

Design and analysis of experiments with emphasis on applications in engineering. Prereq: Jr or Sr standing in CBE. Not open to students with credit for 779.

Modeling and Simulation U G 3

Application of chemical and biomolecular engineering principles to construct mathematical models of processes and perform simulations. Prereq: Jr, Sr, or Grad standing in CBE. Not open to students with credit for 780.

Chemical Engineering U G 1 - 15

Research for thesis. Prereq: Grad standing. Repeatable. This course is graded S/U.

Group Studies in Chemical and Biomolecular Engineering U G 1 - 6

Designed to give the student an opportunity to pursue special studies and topics not otherwise offered. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs or 18 completions.

Research Communications in Chemical and Biomolecular Engineering G 2

Analysis and critique of chemical and biomolecular engineering research literature. Training and practice in written and oral communication of research ideas. Prereq: Grad standing. Not open to students with credit for 881.

Teaching Practicum in Chemical and Biomolecular Engineering G 1 - 6

Teaching and instructional development under faculty guidance in the chemical and biomolecular engineering curriculum. Prereq: Grad standing. International students for whom English is not the first language must first become certified in English, either through the SPEAK or Mock Teaching Test. Repeatable to a maximum of 20 or hrs or 20 completions. This course is graded S/U.

Analysis of Chemical and Biomolecular Engineering Problems G 3

Modern techniques for the theoretical analysis of chemical and biomolecular engineering problems. Prereq: Grad standing. Not open to students with credit for 801.

Advanced Thermodynamics I G 3

Detailed discussion of the thermodynamic properties of pure compounds and mixtures; computational problem work emphasizes the application of thermodynamics in industrial problems. Prereq: 3508 (508), and Grad standing; or permission of instructor. Not open to students with credit for 808.
82 Chemical and Biomolecular Engineering

8809 Advanced Thermodynamics II G 3
Continuation of CBE 8808 and special topics of thermodynamics that are of interest to chemical and biomolecular engineering.
Prereq: 8808 (886), and Grad standing; or permission of instructor. Not open to students with credit for 8809. Repeatable to a maximum of 6 cr hrs.

8812 Advanced Kinetics I G 3
Chemical engineering kinetics from the viewpoint of industrial chemical processes.
Prereq: 2523 (523) and 3610 (610), and Grad standing; or permission of instructor. Not open to students with credit for 812.

8815 Advanced Transport G 3
Momentum and mass transfer theory at both the macroscopic and microscopic levels utilizing integral and differential conservation equations.
Prereq: Grad standing. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

8895 Seminar in Chemical and Biomolecular Engineering G 1
Formal lectures and discussion of state of the art research and development in chemical and biomolecular engineering.
Prereq: Grad standing. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

9899 Dissertation Research in Chemical and Biomolecular Engineering Research for dissertation purposes only.
Prereq: Grad standing. Repeatable. This course is graded S/U.

Chemical Physics

7998 Graduate Research Laboratory and/or theoretical research on an individual basis on topics of current interest.
Prereq: Permission of instructor. Repeatable to a maximum of 36 cr hrs or 6 completions. This course is progress graded (S/U).

7999 Masters Degree Research in Chemical Physics Research for Masters thesis purposes only.
Prereq: Permission of instructor. Repeatable. This course is progress graded (S/U).

8880.01 Frontiers in Spectroscopy An overview of both fundamental and applied topics on the frontier of spectroscopy.
Prereq: Physics 7501, Chem 6510, or permission of instructor. Repeatable to a maximum of 10 cr hrs or 6 completions. This course is graded S/U.

8880.02 Frontiers in Spectroscopy An overview of both fundamental and applied topics on the frontier of spectroscopy.
Prereq: Physics 7501, Chem 6510, or permission of instructor.

8999 Research in Chemical Physics Research for doctoral dissertation purposes only.
Prereq: Permission of instructor. Repeatable. This course is progress graded (S/U).

Chemistry

1100 Chemistry and Society U 3
Terminology, methods, and principles of chemistry; examination of the roles of chemistry in our modern technological society.
Prereq: Math 1050 (075 or 076) or an ACT math subscore of 22 or higher that is less than 2 years old, or satisfactory score on Ohio State Math Placement Test. Not open to students with credit for 1110 (101), 1210 (121), 1910H (201H), or 100, or any Chem course that uses these courses as prerequisites. GE nat sci phys course (BA in ASC only).

1110 Elementary Chemistry U 5
Introductory chemistry for non-science majors, including dimensional analysis, atomic structure, bonding, chemical reactions, states of matter, solutions, chemical equilibrium, acids and bases, along with topics in organic and biological chemistry.
Prereq: Math 1073, 1074, 1075 or above; Math Placement Level L, M, N, or R; or ACT Math subscore of 22 or higher that is less than 2 years old. Not open to students with credit for 1210, 1250, 1610, or 1910H. This course is available for EM credit. GE nat sci phys course.

1205 Foundations of General Chemistry U 2
Chemistry 1205 is a preparatory course for under-prepared students previously enrolled in Chemistry 1210/1610. Chemistry 1205 will prepare students to continue on and complete Chemistry 1210/1610 in a subsequent semester. The textbook for Chem 1205 will be the same textbook used in Chem 1210/1610.
Prereq: Failed or withdrew from Chem 1210 or 1610, or Math 1075 or Math Placement N.

1210 General Chemistry I U 5
First course for science majors, covering dimensional analysis, atomic structure, the mole, stoichiometry, chemical reactions, thermodynamics, electron configuration, bonding, molecular structure, gases, liquids, and solids.
Prereq: One unit of high school chemistry, and Math Placement Level L or M; or a grade of C- or above in Math 1120, 1130, 1131, 1148, 1150, or above. Not open to students with credit for 1210, 1250, 1620, 1910H, 1610, 1910H, or 1910H. This course is available for EM credit. GE nat sci phys course.

1220 General Chemistry II U 5
Continuation of 1210 for science majors, covering solutions, kinetics, chemical equilibrium, solubility and ionic equilibria, qualitative analysis, thermodynamics, electrochemistry, descriptive chemistry, coordination compounds, and nuclear chemistry.
Prereq: 1210, 1215, 1250, 1610 (162), 1910H (202H), or 122, and Math Placement Level L or M; or a grade of C- or above in Math 1130 (130), 1131 (131), 1148 (148), or 1150 (150), or above. Not open to students with credit for 1620 (160), 1620H (202H), 123, 2310, 2510 (251), 2510, or 2910H (251H). This course is available for EM credit. GE nat sci phys course.

1250 General Chemistry for Engineers U 4
First course for engineering majors, covering dimensional analysis, atomic and molecular structure, the mole, stoichiometry, chemical reactions, states of matter, solutions, kinetics, equilibrium, acids and bases, thermodynamics, and electrochemistry.
Prereq: One unit of high school chemistry, and Math Placement Level L or M; or a grade of C- or above in Math 1120, 1130 (130), 1131 (131), 1148 (148), or 1150 (150), or above. Not open to students with credit for 1210, 1610, 1910H, 123, 2310, 2510 (251), 2510, or 2910H (251H). This course is available for EM credit. GE nat sci phys course.

1610 General Chemistry for Majors I U 5
First course for chemistry and biochemistry majors, covering dimensional analysis, atomic structure, the mole, stoichiometry, chemical reactions, thermodynamic, electron configuration, bonding, molecular structure, gases, liquids, and solids.
Prereq: One unit of high school chemistry, and Math Placement Level L or M; or a grade of C- or above in Math 1120, 1130, 1131, 1148, or 1150, or above, and enrolled in Chemistry or Biochemistry major; or permission of department. Not open to students with credit for 1210, 1220, 1250, 1610, 1910H, or 1920H. GE nat sci phys course.

1612 Peer-led Team Learning for Chemistry 1610 Students U 1
Provides a structure with which students can work actively in groups of 6 to 8 peers on challenging chemistry problems. This course will integrate with topics covered in Chemistry 1610. The activities will be challenging and relevant to course material and groups will work to discuss, collaborate, and answer questions in the activity.
Concur: 1610. Not open to students with credit for 1220 (123), 1620 (162), 1920H (202H), or 1250 (125). This course is graded S/U.

1620 General Chemistry for Majors II U 5
Continuation of 1610 for science majors, covering solutions, kinetics, chemical equilibrium, solubility and ionic equilibria, qualitative analysis, thermodynamics, electrochemistry, descriptive chemistry, coordination compounds, and nuclear chemistry.
Prereq: 1210, 1215, 1250, 1610, 1910H, 122, 125, 162, or 202H, and Math Placement Level L or M; or a grade of C- or above in Math 1130 (130), 1131 (131), 1148 (148), or 1150 (150), or above, and enrollment in Chemistry or Biochemistry major; or permission of department. Not open to students with credit for 1220, 1920H, 2310, 2510 (251), 2510, 2910H (251H), 123, 163, or 203H. GE nat sci phys course.

1622 Peer-led Team Learning for Chemistry 1620 students U 1
Provides a structure with which students can work actively in groups of 6 to 8 peers on challenging chemistry problems. This course will integrate with topics covered in Chemistry 1620. The activities will be challenging and relevant to course material and groups will work to discuss, collaborate, and answer questions in the activity.
Concur: 1620. Not open to students with credit for 2510, 2610, or 2910H. This course is graded S/U.

1910H Honors General Chemistry I U 5
Fundamental chemical principles and the chemistry of nonmetals for selected students.
Prereq: ACT composite score of 30 or above, and ACT mathematics score of 30 or above, and ACT science reasoning score of 28 or above. Prereq or concur: Math 1141 or 1151 or above, and enrollment in Chemistry or Biochemistry major.

1920H Honors General Chemistry II U 5
Continuation of Chem 1910H for selected students covering fundamental principles and the chemistry of metals.
Prereq: 1910H (202H). Not open to students with credit for 203H, 1220 or 1620. GE nat sci phys course. NS Admis Cond Core.

2193 Individual Studies U 1 - 5
A qualified student may conduct a minor investigation in chemistry.
Prereq: Satisfactory courses in field of the problem and permission of instructor. Repeatable to a maximum of 15 or hrs or 5 completions. This course is graded S/U.

2194 Group Studies U 1 - 6
Designed for students to pursue special studies in chemistry.
Prereq: Permission of instructor. Repeatable to a maximum of 15 or hrs or 5 completions.

2210 Analytical Chemistry I: Quantitative Analysis U 5
Quantitative chemical analysis for chemistry majors; quantitative analysis of the elemental and molecular composition of complex systems.
Prereq: 1220 (123), 1620 (163), or 1920H (203H), and Math Placement Level L, or a grade of C- or above in Math 1146 and 1148, or 1130 (130), 1131 (131), or 1150 (150), or above. Not open to students with credit for 2210H (221H). GE data anly course.
2210H Honors Analytical Chemistry I: Quantitative Analysis U 5
Honors version of quantitative chemical analysis for chemistry majors; quantitative analysis of the elemental and molecular composition of complex systems.
Prereq: Honors standing, or permission of department or instructor; and 2210 (123), 1620 (163), or 1920H (203H), and Math Placement Level L, or a grade of C- or above in Math 1148 and 1149, or 1130 (130), 1353 (131), or 1150 (150), or above. Not open to students with credit for 2210 (221). GE data only course.

2310 Introductory Organic Chemistry U 4
A condensed presentation of organic chemistry organized by functional groups with an emphasis on practical applications.
Prereq: 1110, 1120 (122), 1250 (125), 1620, or 1920H. Not open to students with credit for 2510 (251), 2610, or 2910H.

2510 Organic Chemistry I U 4
Introduction to structure, nomenclature, physical properties, preparation and reactions of alkanes, alkenes, alkynes, ethers, epoxides, aldehydes and ketones. Other topics include stereochemistry, acids, bases, and reaction mechanisms.
Prereq: 2210 (123), 1620 or 1920H (203H). Not open to students with credit for 252.

2520 Organic Chemistry II U 4
Continuation from 2510, including aromatic systems, carboxylic acids, carboxylic acid derivatives, amines, carbon-carbon bond-forming reactions, polymers, carbohydrates and amino acids. Prereq: 2510, 2610 (252) or 2910H (252H). Not open to students with credit for 2520 (253) or 2920H.

2540 Organic Chemistry Laboratory I U 2
Introduction to spectroscopic characterization, scientific writing, computational chemistry, and the laboratory techniques of organic chemistry, including synthesis, isolation, purification, and identification of organic compounds.
Prereq or concour: 2510, 2610 or 2910H.

2550 Organic Chemistry Laboratory II U 2
Introduction to spectroscopic characterization, scientific writing, computational chemistry, and the laboratory techniques of organic chemistry, including synthesis, isolation, purification, and identification of organic compounds. Prereq: 2540 or 2540H. Prereq or concour: 2520, 2620 or 2920H.

2610 Organic Chemistry for Majors I U 4
Introduction to structure, nomenclature, physical properties, preparation and reactions of alkanes, alkenes, alkynes, ethers, epoxides, aldehydes and ketones. Other topics include stereochemistry, acids, bases, and reaction mechanisms. Prereq: 1220 (123), 1620 (163), or 1920H (203H); and Chemistry or Biochemistry major, or permission of Department. Not open to students with credit for 252.

2620 Organic Chemistry for Majors II U 4
Continuation from 2610, including aromatic systems, carboxylic acids, carboxylic acid derivatives, amines, carbon-carbon bond-forming reactions, polymers, carbohydrates and amino acids. Prereq: 2510 (252), 2610, or 2910H; and Chemistry or Biochemistry major, or permission of Department. Not open to students with credit for 2520 (253), or 2920H.

2910H Honors Organic Chemistry I U 4
Honors introduction to structure, nomenclature, physical properties, preparation and reactions of alkanes, alkenes, alkynes, ethers, epoxides, aldehydes and ketones, including stereochemistry, acids, bases, and reaction mechanisms. Prereq: 1220 (123), 1620 (163), or 1920H (203H); Honors program or permission of department or instructor. Not open to students with credit for 2510, 2610, or 2920H.

2920H Honors Organic Chemistry II U 4
Continuation from 2910H, including aromatic systems, carboxylic acids, carboxylic acid derivatives, amines, carbon-carbon bond-forming reactions, polymers, carbohydrates and amino acids. Prereq: Honors standing, and 2910H (252H) or 252; or permission of department or instructor. Not open to students with credit for 2520, 2620, or 253H.

2990 Intro to Chemical Research U 1
A seminar course targeting chemistry majors focusing on the development of professional skills, conducting literature searches, writing research papers, and exploring careers and research options.
Prereq: 2210, 1620, or 1920H, and English 1110.

3510 Inorganic Chemistry U 3
Introduction to the principles of inorganic structure and bonding, including molecular symmetry, atomic structure, ionic bonding, coordination complexes, magnetic properties, thermodynamics and reactivity, bioinorganic chemistry, and nanoparticles. Prereq: 2520 (253), 2620 (253), or 2920H (253H), or permission of instructor. Not open to students with credit for 652.

4193 Individual Studies U 1 - 5
A qualified student may conduct a minor investigation in chemistry. Prereq: Satisfactory courses in field of the problem and permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.

4194 Group Studies U 1 - 5
Designed for students to pursue advanced special studies in chemistry. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions.

4300 Physical Chemistry I U 3
Quantum chemistry and chemical kinetics. Prereq: 2210 (221), 2610 (251), 2610, 2910H, or equiv, and Math 2153 (254), and Physics 1201 (113) or 1251 (133). Prereq or concour: Math 2255 (255). Not open to students with credit for 531.

4310 Physical Chemistry II U 3
Statistical mechanics, thermodynamics, and thermodynamic equilibrium. Prereq: 4300. Not open to students with credit for 532.

4410 Physical Chemistry Laboratory U 3
Quantitative measurements of chemical phenomena and the application of chemical principles to their interpretation. It is recommended that students complete 1 physical chemistry course before taking this course.
Prereq or concour: 4200 (520) or 4300 (530). Not open to students with credit for 541.

4550 Inorganic Chemistry Laboratory U 2
Preparation and characterization of inorganic compounds employing a variety of synthetic techniques. Prereq: 3510 (651), or an undergraduate degree with Chem major, or permission of instructor. Not open to students with credit for 588.

4870 Analytical Chemistry II: Instrumental Analysis U 3
Applications of physical-chemical principles to problems in qualitative and quantitative chemical analysis.
Prereq or concour: 4200 or 4300; or 520 or 530, and 541.

4880 Instrumental Analysis Laboratory U 2
Laboratory applications of physico-chemical principles to instrumental analysis. Prereq or concour: 4870 (587), or permission of instructor. Not open to students with credit for 588.

499B Honors Undergraduate Research U 1 - 10
Undergraduate research or creative activities in various topics. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs or 15 completions.

499BH Honors Undergraduate Research U 1 - 10
Honors undergraduate research or creative activities in various topics. Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 20 cr hrs or 15 completions.

499C Undergraduate Thesis Research U 1 - 10
Undergraduate research or creative activities in various topics, culminating in a research thesis and oral defense.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 5 completions.

5193 Individual Studies U G 1 - 10
Individual Studies.
Prereq: Permission of instructor. Repeatable.

5194 Group Studies U G 1 - 10
Group Studies. Prereq: Permission of instructor. Repeatable.

5230 Neurotransmitter Chemistry U G 3
Come and explore the natural and unnatural organic molecules involved in neurotransmission. Through the study of synthetic strategies, mechanistic principles, and the structural requirements for biological activity, students will investigate the chemical world of endogenous molecules, pharmaceuticals, and drugs of abuse. Recommended prereq: Chem 2550, and Biochem 4511 or 5613.
Prereq: 2520, 2620, or 2920H, and 2540; or Grad standing; or permission of instructor.

5240 Introduction to Protein Modeling U G 3
This course provides a practical introduction to the theory and methods of molecular modeling and computational chemistry as it pertains to modeling large biological molecules such as proteins. Hands-on experience will be obtained by all attendees in doing molecular mechanics and modeling dynamic systems (molecular dynamics). Recommended prereq: Biochem 4511. Prereq: A grade of C or above in 2520, 2620, or 2920H, or Grad standing; or permission of instructor.

5420 Spectroscopy of Organic Compounds U G 1½
Exploration of the use of spectroscopic techniques for the determination of the structure of organic molecules, including UV/Vis, IR, NMR, and MS.
Prereq: 2520 (253), 2620 (253), or 2920H (253H), or equiv. Not open to students with credit for 632.
5430 Carbohydrate Chemistry U G 3
Introduction to synthesis, conformation, and biological importance of carbohydrates and oligosaccharides, including nomenclature, protecting groups, glycoside synthesis, biosynthesis and biology, and NMR methods.
Prereq: 2520 (253), 2620, or 2920H (253H), or equiv.

5440 Introduction to Computational Chemistry U G 3
Introduction to fundamental concepts in computational chemistry, including molecular modeling, molecular dynamics, and semi-empirical and ab initio calculations.
Prereq: 2520 (253), 2620 (253), or 2920H (253H), or equiv. Not open to students with credit for 644.

5450 Practical NMR Spectroscopy U G 1
This course focuses on the application of NMR Spectroscopy to the structure determination and dynamics of primarily synthetic organic and organometallic products. The practical aspects of acquiring optimized, high-quality data are still beneficial for analysis of these spectra and will be presented as lectures and demonstrations.
Prereq: 5420, or permission of instructor.

5520 Nanochemistry U G 3
Introduction to fundamental concepts of nanoscience, exploring strategies for complex assemblies of molecules and developing computational techniques for the investigation of nanotech structures.
Prereq: 1220 (123), 1620 (163), or 1920H (203H), and permission of instructor. Not open to students with credit for 611.

6050 Modeling Instruction in Chemistry G 4
An inquiry-based course addressing both content learning and supporting pedagogy in chemistry instruction suitable for high school instructors implementing a modeling-based approach.
Repeatable to a maximum of 12 cr. hrs.

6086 Advanced Chemistry Knowledge for Educators: Atomic Structure, Energy and Quantum Mechanics G 5
For professionals and educators seeking an advanced understanding of General Chemistry content knowledge with consideration of how this understanding informs teaching and learning in College Credit Plus Chemistry courses. Topics typically found in the first semester of General Chemistry will be investigated.
Prereq: Enrollment in Advanced Chemistry Knowledge for Educators certificate program, or permission of instructor.

6087 Advanced Chemistry Knowledge for Educators: Bonding Models and States of Matter G 4
For professionals and educators seeking an advanced foundational and historical understanding of General Chemistry content knowledge with consideration of how this understanding informs teaching and learning in College Credit Plus Chemistry courses.
Prereq: Enrollment in Advanced Chemistry Knowledge for Educators certificate program, or permission of instructor.

6088 Advanced Chemistry Knowledge for Educators: Kinetics, Thermodynamics, and Equilibrium G 4
For professionals and educators seeking an advanced foundational and historical understanding of General Chemistry content knowledge with consideration of how this understanding informs teaching and learning in College Credit Plus Chemistry courses.
Prereq: Enrollment in Advanced Chemistry Knowledge for Educators certificate program, or permission of instructor.

6089 Advanced Chemistry Knowledge for Educators: Modern Applications & Instrumental Analysis G 5
For professionals and educators seeking an advanced understanding of General Chemistry content knowledge with consideration of how this understanding informs teaching and learning in College Credit Plus Chemistry courses.
Prereq: Enrollment in Advanced Chemistry Knowledge for Educators certificate program, or permission of instructor.

6110 Survey of Instrumental Methods G 1½
Introduction to instrumental analytical methods, including optical spectroscopy, mass spectrometry, surface spectrometry, microprobe methods, and separation science concepts relevant to chemical analysis. Not available for undergraduate credit.

6120 Analytical Data Treatment - Statistical and Numerical Analysis G 1½
Principles and practice of data acquisition, processing, and analysis in chemical research.
Prereq: 4870 (587) or equiv. Not open to students with credit for 720.

6310 Fundamentals of Coordination Chemistry G 1½
Fundamental concepts of coordination chemistry, including properties, coordination number & isomerism, complex stability & the chelate effect, ligand substitution reactions, electron transfer, coordination chemistry & catalysis, magnetic phenomena.

6320 Synthetic Principles in Inorganic Chemistry G 1½
Synthesis, structure, and application of electron counting rules to organometallic clusters. Synthesis and structure of main group and transition metal hydrides. Applications in catalysis.
Prereq: 3510 or equiv, or permission of instructor. Not open to students with credit for 753.

6330 Group Theory and Bonding G 1½
Introduction to groups and group representations, application to pi-bonding in organic molecules, molecular orbital theory, bonding in transition metal complexes, molecular vibrations, and electronic spectroscopy.
Prereq: 3510 or equiv, or permission of instructor. Not open to students with credit for 851.

6340 Physical Methods in Inorganic Chemistry G 1½
Exploration of techniques for measuring structure and properties of small inorganic molecules and assemblies, including elemental composition, structural characterization, and physical properties.
Prereq: 3510 or equiv, or permission of instructor. Not open to students with credit for 752.

6410 Basic Organic Reaction Mechanisms G 1½
Fundamental aspects of organic reaction mechanisms, including substitution & elimination reactions, alkene addition reactions, aromatic substitution, radical reactions, carboxylic chemistry, & pericyclic reactions. Not available for undergrad credit.

6420 Stereochemistry and Conformational Analysis G 1½
Fundamental principles of stereochemistry, including stereoisomerism, enantiomer resolution, conformational analysis of C-C and C-heteroatom bonds, cyclic stereochemistry, the stereochemistry of dynamic processes, and stereoelectronic effects.
Prereq: 2520 (253), 2620 (253), 2920H, or equiv. Not open to students with credit for 730.

6430 Introduction to Organic Synthesis G 1½
Principles and reactions in the synthesis of organic molecules, acidity and basicity, chemistry of carbonyl groups, oxidation and reduction, electrophilic and nucleophilic reagents, functional group interconversions, and protecting group chemistry.
Prereq: 2520, 2620, 2920H, or equiv. Not open to students with credit for both 832 and 833.

6440 Introduction to Physical Organic Chemistry G 1½
Fundamental principles and concepts in physical organic chemistry, including structure and bonding, strain and stability, solvation and non-covalent interactions, acid-base chemistry, and methods for studying reaction mechanisms.
Prereq: 2520 (253), 2620 (253), 2920H, or equiv, and 4210 (621), 4310 (531), or equiv, or permission of instructor. Not open to students with credit for both 731 and 831.

6510 Quantum Mechanics and Spectroscopy G 1½
Introduction to the fundamentals of quantum mechanics with applications to chemical dynamics and spectroscopy, suitable for graduate students and advanced undergraduates from all areas of chemistry. Not available for undergraduate credit.

6520 Thermodynamics G 1½
Fundamental aspects of chemical thermodynamics, including spontaneous change, 1st, 2nd, and 3rd laws of thermodynamics, free energy, and thermochemical calculations.
Prereq: 4310 (532) or equiv. Not open to students with credit for 775.

6530 Kinetics G 1½
Description of the rate of chemical reactions, including rate equations, mechanism, and transition state theory.
Prereq: 4310 (532) or equiv. Not open to students with credit for 775.

6540 Introduction to Electronic Structure G 1½
Introduction to electronic structure of atoms and molecules, and quantum-mechanical calculations, including self-consistent field methods, molecular orbital theory, density functional theory, and other methods for describing electron correlation.
Prereq: 4310 or equiv. Not open to students with credit for 866.

6550 Atmospheric Chemistry G 3
Chemistry of the lower atmosphere, including air pollution and climate change, chemistry and kinetics of atmospheric oxidants, heterogeneous chemical mechanisms, tropospheric and stratospheric gas and particulate phases relative to ozone depletion. 231 or 251 recommended.
Prereq: 1220 (123), 1620, 1920H, or equiv, and 4200, 4300, or equiv. Not open to students with credit for 641.

6780 Faculty Research Presentations G 1
Presentation of faculty research programs and projects to incoming doctoral students. Not available for undergraduate credit.
This course is graded S/U.

6781 Laboratory Safety G 1
Principles of safety in the chemical laboratory.
Prereq: Not open to students with credit for 665. This course is graded S/U.

6782 Ethics in Scientific Research G 1
An examination of the ethical principles operative in modern scientific research.
This course is graded S/U.

6790 Scientific Writing G 2
A successful researcher is someone who knows both how to do their science, and also how to effectively communicate their findings through the written and spoken word. The purpose of this course is to introduce students to the processes involved in professional or scholarly publication.
Prereq: Permission of instructor. Not open to students with credit for Microbio 6790. Cross-listed in Microbio.
Electrochemistry

Electronic methods for trace analysis of species, including current/voltage relationships based on activation and diffusion control, electrode kinetics, and reaction mechanisms.

Prereq: Not open to students with credit for 821.

Fundamentals and Techniques of Separation Science

Introductory course in analytical separation science: principles of chromatographic and electrophoretic processes.

Prereq: Not open to students with credit for 822.

Analytical Spectroscopy

Principles for measurement of interactions of electromagnetic radiation with matter, including classical & quantum mechanical principles, group theory, and principles and applications of atomic and molecular spectroscopy.

Prereq: Not open to students with credit for 823.

Mass Spectrometry

Advanced course on modern mass spectrometric methods and applications to chemical and biological sciences.

Prereq: Not open to students with credit for 825.

Nuclear Magnetic Resonance Spectroscopy

Introduction to NMR spectroscopy for structural studies including nuclear magnetic resonance spectroscopy in the context of chemical and biochemical structural studies.

Prereq: Not open to students with credit for 824.

Analytical Surface Science

Introduction to instrumentation and techniques for the chemical and physical analysis of surfaces.

Chemical Biology

Graduate-level treatment of the fundamentals of chemical biology, including enzymes, drug and probe design, diversification methodology, and proteomics.

The Inorganic Chemistry of Bioinspired Energy Conversion

This course will give an overview of important energy conversion reactions in nature as well as those modeled chemically and discuss the implications of these processes in the context of environmental concerns. Fundamentals and applications of spectroscopic techniques that have been of particular utility for understanding the natural and model systems will also be covered.

Organometallic Chemistry

Chemistry of organometallic compounds, main group elements (Li, Mg, Al, Sn, Pb), comparisons of Zn, Hg & Mg, multiple bonding, transition metals, classification of ligands, pi bonding, metalloenes, carbones, carbynes, H2, and agostic complexes.

Solid State Chemistry

Structures of extended solids, including defects and phase diagrams and phase transitions.

Diffraction Methods

Exploration of techniques and application for determination of solid state structures, including X-ray absorption and diffraction methods, neutron diffraction methods, single crystal structure determination, and powder diffraction.

Inorganic Photochemistry

Fundamental aspects of molecular photophysical processes, including energy and electron transfer, photochemistry of inorganic complexes, and applications.

Bioinorganic Chemistry

Study of the role of metals in biological systems, including iron and copper proteins, other metals including Zn, Co, Mn, Mg, and Ca, metal ion homeostasis, metals and nucleic acids, and cellular toxicity and medical applications of heavy metals.

Nanotechnology

Advanced study of nanostructures and nanomaterials, including the basic physics for nanoscience and nanotechnology, synthesis and self-assembly, and nanotechnology in energy conversion and storage.

Inorganic Materials

Study of the electronic and magnetic properties of extended solids, including organic and metal-organic arrays.

Advanced Organic Synthesis

Advanced aspects of organic synthesis/synthetic design, including advanced carbon-bonding chemistry, synthesis of alkenes, special topics in oxidations and reductions, nuclophilic reagents, pericyclic and dipolar reactions, and free radical chemistry.

Prereq: 6430.

Kinetcis, Catalysis, and Transition State Theory

Principles of kinetics, including energy surfaces and transition state theory, rate equations and rate constants, isotope effects, linear free energy relationships, and catalysis for the study of the chemical reactions of organic molecules.

Prereq: 6440.
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**Chemistry**

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*Prerequisites and Notes:*

- **8995** Physical Chemistry Seminar: Presented in Physical Chemistry. Repeatable to a maximum of 14 or hrs. This course is graded S/U.
- **8896** Departmental Seminar: Seminars on topics of interest in chemistry and biochemistry. Repeatable to a maximum of 14 or hrs. This course is graded S/U.
- **8899** Doctoral Seminar: Seminar presented by post-candidacy doctoral students on thesis/dissertation research. Prereq: Post-candidacy graduate standing, and permission of instructor. Repeatable to a maximum of 2 or hrs.
- **8998** Non-thesis Research: Non-thesis graduate research. Repeatable. This course is graded S/U.
- **8999** Thesis/Dissertation Research: Graduate research for thesis or dissertation. Repeatable. This course is graded S/U.
4152.51 Intensive Level Three Chinese-Written: Individualized U 1 - 5

Track Continuation of 2151.51. Progress is sequential from one cr hr to the next with a demonstrated proficiency at the level of 80% required for advancement. Au, Sp, Su Sem. Prereq: 2151.01, or 4 cr hrs for 2151.51, or permission of instructor. Not open to students with credit for 311 or 511. Repeatable to a maximum of 5 or 6 cr hrs or 5 completions. This course is available for EM credit. FL Admis Cond course.

4193 Individual Studies U 1 - 3

Directed study to meet individual research needs of students in Chinese studies. Not a substitute for regular language courses. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs or 2 completions.

4194 Group Studies U 1 - 3

Group investigation of issues in Chinese studies. Varying topics. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs or 2 completions.

4301 Conversational Cantonese for Mandarin Speakers I U 3

A conversational Cantonese language course for speakers of Mandarin, and is open to both advanced learners and native speakers of Mandarin Chinese. The course develops basic skills in speaking and listening comprehension for functioning in everyday, Cantonese-speaking environments. Not open to native speakers of Cantonese, or to students with 2 or more years of study in Cantonese in high school.

4302 Conversational Cantonese for Mandarin Speakers II U 3

The second semester of conversational Cantonese language for speakers of Mandarin, and is open to both advanced learners and native speakers of Mandarin Chinese. The course develops basic skills in speaking and listening comprehension for functioning in everyday, Cantonese-speaking environments. Not open to native speakers of Cantonese, or to students with 2 or more years of high school Cantonese. Prereq: 4301, or equiv knowledge of conversational Cantonese.

4380 The Chinese Language U 3

Important elements of the Chinese language – its structure, dialects, writing system – as well as history of the language, language acquisition, language planning, and language use in society; taught in English. Prereq: 1102 or equiv, or permission of instructor. Not open to students with credit for 580.

4383 The Chinese Language and Its Script U 3

Examination of the Chinese script, covering its origin, classification, composition, and development, as well as such topics as standardization, script reform, romanization, and internet language; taught in English. Prereq: 1102 or equiv, or permission of instructor.

4402 Traditional Chinese Fiction in Translation U 3

Examines novels and short stories from the Ming and Qing dynasties. Taught in English. Prereq: Not open to students with credit for 502. GE lit and diversity global studies course.

4403 Modern Chinese Literature in Translation U 3

Chinese fiction and/or drama from the late 19th century to the present. Taught in English. Prereq: Not open to students with credit for 503. GE lit and diversity global studies course.

4404 Chinese Drama U 3

Representative works of Chinese drama in translation, taught with a focus either on premodern drama or on modern drama, depending on the instructor's area of interest and expertise. Taught in English. Prereq: Not open to students with credit for 504. GE lit and diversity global studies course.

4405 China in Chinese Film U 3

An overview of Chinese cinema, with a focus on how film represents issues of nationality, national identity, and national trauma. Taught in English, no Chinese required. Prereq: English 1110 or equiv. Not open to students with credit for 505. GE VPA and diversity global studies course.

4407 Eco-literature in China U 3

Addresses changing conceptions of the environment in China as expressed in oral and written literature.

4998 Undergraduate Research Project U 3

Focused research toward completion of an original project. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

4998H Honors Undergraduate Research Project U 3

Focused research toward completion of an original project. Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

4999 Undergraduate Research Thesis U 3

Focused research toward completion of an original thesis. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

4999H Honors Undergraduate Research Thesis U 3

Focused research toward completion of an original thesis. Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

5101.01 Level Four Chinese I: Classroom Track U G 3

Level Four Chinese; continuation of 4102, or 4142 and 4152. Classroom Track. Au Sem. Prereq: 4152.01, and 4102 or 4142.01 or 4142.02 or 4 or hrs for 4152.51, or permission of instructor. Not open to students with credit for 610 and 611.01. This course is available for EM credit. FL Admis Cond course.

5101.51 Level Four Chinese I: Individualized Track U G 1 - 3

Level Four Chinese; continuation of 4102, or 4142 and 4152. Individualized Track. Progress is sequential from one cr hr to the next with a demonstrated proficiency at the level of 80% required for advancement. Prereq: 4152.01, and 4102 or 4142.01 or 4142.02 or 4 or hrs for 4152.51, or written permission of instructor. Not open to students with credit for 610 or 611.51. Repeatable to a maximum of 3 cr hrs or 3 completions. This course is available for EM credit. FL Admis Cond course.

5102.01 Level Four Chinese II: Classroom Track U G 3

Level Four Chinese: continuation of 5101.01. Sp, Au Sem. Prereq: 5101.01, or 3 cr hrs for 5101.51, or permission of instructor. Not open to students with credit for 611 or 612.01. This course is available for EM credit. FL Admis Cond course.

5102.51 Level Four Chinese II: Individualized Track U G 1 - 3

Level Four Chinese: continuation of 5101.51. Progress is sequential from one cr hr to the next with a demonstrated proficiency at the level of 80% required for advancement. Au, Sp, Su Sem. Prereq: 5101.01, or 3 or 4 hrs for 5101.51, or permission of instructor. Not open to students with credit for 611 and 612. Repeatable to a maximum of 3 or 4 cr hrs or 3 completions. This course is available for EM credit. FL Admis Cond course.

5103 Level Five Chinese I U G 3

Level five Chinese first semester. Immersion in all four skills using the novel and TV series "Spring Grass" by Qiu Shanshan. Covers 1st half of book and TV series. Focuses on oral narration skills. Chinese homework. Prereq: 5102 or equiv. This course is available for EM credit.

5104 Level Five Chinese II U G 3

Level five Chinese second semester. Completing the novel and TV series "Spring Grass"; focus on written composition skills. Chinese only. Completion of this class (or equivalent) required for taking master's level Chinese language classes. Prereq: 5103 or equiv. This course is available for EM credit.

5105.51 Selected Readings in Scholarly Chinese Texts I: Individualized Track U G 1 - 3

Academic writings by modern Chinese scholars in both Wenyuan and Bihuaxu styles. Prereq: 5102.01 or 5102.51, or permission of instructor. Repeatable to a maximum of 9 or 4 or 5 completions.

5106.51 Selected Readings in Scholarly Chinese Texts II: Individualized Track U G 1 - 3

Academic writings by modern Chinese scholars in both Wenyuan and Bihuaxu styles. Prereq: 5105.01 or 5105.51, or permission of instructor. Repeatable to a maximum of 9 or 4 or 5 completions.

5111 Classical Chinese I U G 3

Analysis of selected texts in classical Chinese from pre-Qin times. Prereq: Level Two Chinese or equiv, or permission of instructor. Not open to students with credit for 601 and 602.

5112 Classical Chinese II U G 3

Continuation of 5111. Close reading of selected texts from pre-Qin and later times. Prereq: 5111, or equiv and permission of instructor. Not open to students with credit for 602 and 603.

5194 Und/Grad Group Studies U G 1 - 3

Group investigation of issues in Chinese studies designed for a mix of undergraduate and graduate students. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs or 2 completions.

5380 Introduction to Chinese Linguistics U G 3

Investigation of the phonology, morphology, syntax, semantics, lexicon, and writing system of the Chinese language; and exploration of some topics relating language to cognition, society, and gender. Prereq: Permission of instructor. Not open to students with credit for 680.

5381 History of the Chinese Language U G 3

Investigation of the history of the Chinese language from its early stages to modern forms. Prereq: 5380, or permission of instructor. Not open to students with credit for 681.

5383 The Chinese Writing System U G 3

Origin, classification, composition, and development of the Chinese writing system; taught in English. Prereq: 5380, or permission of instructor. Not open to students with credit for 683.

5389 Topics on the Chinese Language U G 3

Exploration of topics and issues concerning the Chinese language – language and society, language and politics, language and gender, language and identity, bilingualism, languages of China; taught in English. Prereq: 5102 or equiv, or permission of instructor. Repeatable to a maximum of 3 cr hrs.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Grade</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>5400</td>
<td>Performance Traditions of China</td>
<td>U G 3</td>
<td></td>
<td>Introduction to the panorama of oral and orally-connected performance traditions of China; explores local traditions of professional storytelling, epic singing, folk songs, and local drama. Prereq: 2231, 2232, 2451, 2452, EALL 1231, Japanese 2231, 2451, 2452, Korean 2231, 2451, or permission of instructor. Not open to students with credit for 600.</td>
</tr>
<tr>
<td>5474</td>
<td>Chinese Opera</td>
<td>U G 3</td>
<td></td>
<td>Introduction to Chinese opera as traditional culture, dramatic literature, and performing art; selected opera scripts and stage performances from Beijing opera, Kunqu, and regional operas; illustrated discussions of various aspects of the theater. Prereq: Not open to students with credit for 674.</td>
</tr>
<tr>
<td>5490</td>
<td>Chinese Translation Workshop</td>
<td>U G 1 - 4</td>
<td></td>
<td>Investigation of problems and techniques of translating Chinese into English. Prereq: 4102 or 5112, or permission of instructor. Repeatable to a maximum of 8 cr hrs or 2 completions.</td>
</tr>
<tr>
<td>5670</td>
<td>Literary Language in Modern Mandarin</td>
<td>U G 3</td>
<td></td>
<td>Level seven Chinese. Use of literary Chinese in modern speech and writing. Chinese only. Prereq: Permission of Instructor. This course is available for EM credit.</td>
</tr>
<tr>
<td>5798.02</td>
<td>Study Tour: Foreign</td>
<td>U G 8 - 24</td>
<td></td>
<td>Specific content, location, semester(s) of offering, and prerequisites vary; contact department office for details. Repeatable for different titled study tours only. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs or 3 completions.</td>
</tr>
<tr>
<td>6193</td>
<td>Individual Studies</td>
<td>G 1 - 3</td>
<td></td>
<td>Directed study to meet individual research needs of students in Chinese studies. Not a substitute for regular language courses. Prereq: 4102 or 5112, or permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>6194</td>
<td>Group Studies</td>
<td>G 1 - 3</td>
<td></td>
<td>Group investigation of issues in Chinese studies. Varying topics. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions.</td>
</tr>
<tr>
<td>6451</td>
<td>History of Chinese Literature I</td>
<td>G 3</td>
<td></td>
<td>Chinese literature from antiquity to the end of the Tang dynasty; various aspects of the classical tradition and new developments in the Age of Disunity. Taught in English. Partial texts in Chinese optional. Prereq: Written permission of instructor for undergrads. Not open to students with credit for 651.</td>
</tr>
<tr>
<td>6452</td>
<td>History of Chinese Literature II</td>
<td>G 3</td>
<td></td>
<td>Chinese literature from the Five Dynasties to the Qing: poetry, prose, drama, and the rise of vernacular writings. Taught in English. Partial texts in Chinese optional. Prereq: Written permission of instructor for undergrads. Not open to students with credit for 652.</td>
</tr>
<tr>
<td>6998</td>
<td>Research in Chinese: Project</td>
<td>G 1 - 3</td>
<td></td>
<td>Research leading to the completion of a project other than a conventional MA thesis. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs or 2 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>6999</td>
<td>Research in Chinese: Thesis</td>
<td>G 1 - 3</td>
<td></td>
<td>Research leading to the completion of an MA thesis. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>7382</td>
<td>Chinese Phonology</td>
<td>G 3</td>
<td></td>
<td>The phonetics and phonology of modern (Mandarin) Chinese; study of other Chinese dialects for comparative purposes. Prereq: 6380; or permission of instructor.</td>
</tr>
<tr>
<td>7384</td>
<td>Chinese Syntax</td>
<td>G 3</td>
<td></td>
<td>The syntactic structure of modern (Mandarin) Chinese; related topics such as syntax-semantics interface. Prereq: 6380; or permission of instructor.</td>
</tr>
<tr>
<td>7385</td>
<td>Chinese Dialects</td>
<td>G 3</td>
<td></td>
<td>Investigation of the linguistic structures of major Chinese dialects from a cross-dialectal, comparative approach; related topics in multilingualism, language planning, language contact, code-switching, vernacular literacy and dialect-writing. Prereq: 6380; or permission of instructor.</td>
</tr>
<tr>
<td>7463</td>
<td>Modern Chinese Fiction</td>
<td>G 3</td>
<td></td>
<td>Introduction to the history of Chinese fiction from the late Qing to 1949. Prereq: 6451, 6452; or permission of instructor. Not open to students with credit for 763.</td>
</tr>
<tr>
<td>7466</td>
<td>Lu Xun</td>
<td>G 3</td>
<td></td>
<td>Readings in the essays, prose poetry, and fiction of Lu Xun. Prereq: 7463; or permission of instructor.</td>
</tr>
<tr>
<td>7467</td>
<td>Taiwan Literature</td>
<td>G 3</td>
<td></td>
<td>Introduction to the literature of Taiwan from 1900 to the present. Prereq: 6451, 6452, 7463; or permission of instructor.</td>
</tr>
<tr>
<td>7470</td>
<td>Ethnic Literature and Culture in China</td>
<td>G 3</td>
<td></td>
<td>Examines poetry, prose, and other cultural expressions related to ethnic minority groups in China. Prereq: 6451, 6452, or 7463, or permission of instructor. Repeatable to a maximum of 6 cr hrs.</td>
</tr>
<tr>
<td>7615</td>
<td>Chinese Perspectives on Chinese Civilization</td>
<td>G 3</td>
<td></td>
<td>Level seven Chinese. Mainstream Chinese perspectives on major issues in Chinese civilization. Commonly recognized ways to presenting viewpoints and arguments on relevant topics. Chinese only. Prereq: $104 or equiv. Repeatable to a maximum of 6 cr hrs. This course is available for EM credit.</td>
</tr>
<tr>
<td>7617</td>
<td>Analysis of Contemporary Chinese Media</td>
<td>G 3</td>
<td></td>
<td>Level six Chinese. Developing familiarity with major contemporary Chinese media and the ability to analyze chosen topics from a specific medium. Chinese only. Prereq: $104 or equiv. Repeatable to a maximum of 6 cr hrs. This course is available for EM credit.</td>
</tr>
<tr>
<td>7650</td>
<td>Negotiating in Chinese Culture</td>
<td>G 3</td>
<td></td>
<td>Level Seven Chinese. Chinese in spontaneous professional discourse, emphasizing oral presentation based on readings in Chinese business practices and professional negotiation. Prereq: $104, or permission of instructor. Not open to students with credit for 750. This course is available for EM credit.</td>
</tr>
<tr>
<td>7655</td>
<td>Language in China</td>
<td>G 3</td>
<td></td>
<td>Level six Chinese. Language issues in China, including language variation, writing systems, minority languages, and Chinese language issues in the information age. Chinese only. Prereq: $104 or equiv. Repeatable to a maximum of 6 cr hrs. This course is available for EM credit.</td>
</tr>
<tr>
<td>7660</td>
<td>Interpersonal Relations and Professional Networking</td>
<td>G 3</td>
<td></td>
<td>Level six Chinese. Exploration of assumptions and expectations motivating behaviors in Chinese and American cultures when developing interpersonal relations and professional networks. Prereq: $104 or equiv. Repeatable to a maximum of 6 cr hrs. This course is available for EM credit.</td>
</tr>
<tr>
<td>8500</td>
<td>Chinese Bibliography and Research Methods</td>
<td>G 3</td>
<td></td>
<td>An introduction to bibliographies and reference works in Chinese Studies; general and specific problems for research. Prereq: Not open to students with credit for 800.</td>
</tr>
<tr>
<td>8897</td>
<td>Departmental Seminar</td>
<td>G 1 - 3</td>
<td></td>
<td>Seminar in Chinese literature, linguistics, or pedagogy; topic varies. Prereq: 5111 or 5112; or 6451 or 6452; or permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions.</td>
</tr>
<tr>
<td>8998</td>
<td>Research in Chinese: Project</td>
<td>G 1 - 3</td>
<td></td>
<td>Research leading to the completion of a project other than a conventional dissertation. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>8999</td>
<td>Research in Chinese: Dissertation</td>
<td>G 1 - 3</td>
<td></td>
<td>Research leading to the completion of a dissertation. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs or 8 completions. This course is graded S/U.</td>
</tr>
</tbody>
</table>

**City and Regional Planning**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>1100</td>
<td>CRP Survey</td>
<td>U 1</td>
<td></td>
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<tr>
<td></td>
<td>Introduction to the University, the Knowlton School of Architecture and the professions of architecture, city and regional planning, and landscape architecture. Prereq: Not open to students with credit for 1100, 100, Arch 1100 (100), 1100E, 100H, LArch 1100 (100), 1100E, or any survey course. Cross-listed in Arch and LArch.</td>
<td></td>
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<tr>
<td>2000</td>
<td>Introduction to City and Regional Planning</td>
<td>U 3</td>
<td></td>
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<tr>
<td></td>
<td>How transportation, housing, and land use work together to create vibrant cities and regions. Prereq: Not open to students with credit for 310.</td>
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<tr>
<td>2100</td>
<td>Reading the City through History and Law</td>
<td>U 3</td>
<td></td>
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<tr>
<td></td>
<td>An intensive investigation of cities’ complex cultures and societal rules and the role of history and law in shaping their development. Prereq: Not open to students with credit for 210 and 350.</td>
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</tr>
</tbody>
</table>
City and Regional Planning

2110 Creating Innovative Cities and Regions  U  3
Successful cities rely on innovation to keep them forward-moving. Emerging trends and unmet market needs are studied to generate innovative planning solutions. Prereq: Not open to students with credit for 2110H or 110.

2210 Sustainable Urbanism  U  3
Globalization is changing cities, economies, social networks, and the environment. Technological innovation, entrepreneurship, and policy making guides the future of sustainable cities. Prereq: Not open to students with credit for 2210E.

2210E Sustainable Urbanism  U  3
Globalization is changing cities, economies, social networks and the environment. Technological innovation, entrepreneurship and policy making guides the future of sustainable cities. Prereq: Honors standing. Not open to students with credit for 2210.

2600 Designing Communication for Planning  U  4
Graphic tools and techniques used for effective visual communication in planning. Projects focus on creative problem solving to communicate planning to a mass audience.

2630 Planning for Future Cities  U  3
Cites are constantly evolving over time as new forms of technology, governance, and other factors occur. Students will explore technology trends that affect cities, and gain inspiration from the many variations of futuristic cities envisioned in the science fiction genre.

2700 Technology in Design  U  1 - 5
Software tools, information theory, and technology to aid in preparing for the professional planning workplace. Repeatable to a maximum of 20 cr hrs or 4 completions.

2798 Comparative Studies in Planning  U  3
Planning issues are global in context. Through direct experience studying globalization, migration, sustainability, and public participation, critically understand planning on a global and community scale. Repeatable to a maximum of 9 cr hrs.

3000 Planning Resilient Environments  U  3
Environmental resilience requires a comprehensive planning approach. Through planning techniques and practices, identify practical applications for creating resilient environments. Prereq: Math 1148 (148), or permission of instructor. Not open to students with credit for 745 or 722.

3100 Analyzing the City  U  3
Spatial, economic, and demographic tools aid in forecasting the future of cities and regions. These tools serve as a foundation for imagining the future. Prereq: Econ 2001.01, and Math 1118 (117), 1131, 1151, or above; or permission of instructor. Not open to students with credit for 3100H.

3150 Digital Design and Analysis for Planners  U  2
Basic principles of computer drafting and Geographic Information Systems (GIS) and their application in the professional planning office for the purpose of design, analysis, and representation of the built environment.

3194 Group Studies in City and Regional Planning  U  1 - 15
Group-based study of city and regional planning topics within the frame of an instructor guided course. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions.

3200 Place Making  U  4
Vibrant public places and sustainable communities are realized when planners visualize and understand spatial relationships at the site, neighborhood and community level. Prereq: 1100 (110), 1100E, 2000 (310), 2110, 2110E, Arch 1100 (100), 1100E, 100H, LArch 1100 (100), or 1100E; or permission of instructor. Not open to students with credit for 3200E or 330.

3200E Place Making  U  4
Vibrant public places and sustainable communities are realized when planners visualize and understand spatial relationships at the site, neighborhood and community level. Prereq: Honors standing, and 1100 (110), 1100E, 2000 (310), 2110, 2110E, Arch 1100 (100), 1100E, 100H, LArch 1100 (100), or 1100E; or permission of instructor. Not open to students with credit for 3200E or 330.

3300 Planning for and with People  U  3
Application of skills and techniques of community participation, emphasizing education, group formation and dynamics, consultation, engagement, and creative change within groups. Prereq: 2000 (310), 2110 (110), or 2110H (100), or permission of instructor.

3400 Planning for Sustainable Economic Development  U  3
Understand the intersection of economics, the environment, and development in order to use planning tools to promote sustainable economic development. Prereq: Econ 2001.01, 2001.02 (200), 2001.03H, or AEDEcon 2001.

3500 The Socially Just City  U  3
Too many cities are split between the haves and the have-nots. Explore how to reduce poverty, increase access to public services, and create a high quality of life for all residents. GE soc sci orgs and polities and diversity soc div in the US course.

3510 Murder by Design  U  3
The way cities are designed influences criminal activity. Crime mapping, siting of businesses, and neighborhood design are explored to create safer spaces. Prereq: Jr standing.

3550 Environmental Planning and Policy for a Sustainable Future  U  3
This course has been designed to incorporate environmental considerations into land use planning and policy making. Upon completion of this course students should be able to analyze environmentally related planning problems not requiring in-depth environmental expertise and recognize when such expertise is necessary. Prereq: 2110.

3600 Land Development Planning  U  3
Planners shape cities. The land development process requires understanding the impacts of new development and redevelopment in order to reimage more vibrant sites. Prereq: Not open to students with credit for 745 or 750.

3610 Sex and the City  U  3
Explores sex in the city, examining spaces, institutions, and policies that influence sex as a land use.

3620 The Underground City  U  3
If the surface of the Earth became uninhabitable, people could be forced to live underground to survive. A plan will be conceived and developed in order to perpetuate the human race. Prereq: 2630 or 3000.

4110 Transportation and Land Use Planning  U  3
Communities integrate transportation while promoting economic development and land-use policies to manage growth. Improve the efficiency of travel and contain infrastructure costs. Prereq: 2110 (110), 2110H, 2000, or 310. Not open to students with credit for 774.

4191S Planning Internship  U  1
Internship seminar providing students with an opportunity to reflect and learn about career opportunities in city and regional planning. Prereq: Permission of instructor. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

4193 Independent Studies in City and Regional Planning  U  1 - 15
Study a specialized topic in city and regional planning with an instructor based on mutual interests. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.

4194 Group Studies in City and Regional Planning  U  1 - 15
Group-based study of city and regional planning topics within the frame of an instructor guided course. Prereq: Jr or Sr standing. Repeatable to a maximum of 15 cr hrs or 4 completions.

4200 Arts and Entertainment Planning  U  3
Planning for arts and entertainment districts, from the neighborhood art studio to entire cities as entertainment destinations.

4597 The Global Environment in Planning  U  3
A review of challenges in developed and developing countries, examining planning issues associated with economic development, social equity, growth and rural development. Prereq: Not open to students with credit for 597. GE cross-disciplinary seminar course.

4674 The City as Art  U  3
This course will examine the ways that cities throughout the world integrate arts and culture into their planning, as well as whether being a cultural city can build the brand, draw new residents and attract visitors. We will investigate cultural tourism, urban cultural policy and temporary built culture such as festivals and fairs. Team-taught with faculty in ArtEduc. Prereq: Jr or Sr standing. Not open to students with credit for ArtEduc 4674. Cross-listed in ArtEduc.

4780 Undergraduate Research Methods  U  3
Quantitative, qualitative and design methods for undergraduate level city and regional planning research.

4780H Undergraduate Research Methods  U  3
Quantitative, qualitative and design methods for undergraduate level city and regional planning research. Honors section. Prereq: Honors standing.

4788 Planning Study Abroad  U  1 - 15
Rapid globalization of cities creates new opportunities to explore, investigate and analyze urban development internationally. Repeatable to a maximum of 15 cr hrs or 2 completions.
90  City and Regional Planning

4798E  Study Tour  U  1 - 15
Group international and domestic travel programs opportunities tailored to complement the classroom experience.
PreReq: Honors standing. Repeatable to a maximum of 45 cr hrs or 3 completions.

4900E  Plan Making  U  6
Plan creation focuses on working with real-world clients. Planning knowledge and skills will be applied to create generate, innovative, and practical solutions.
PreReq: Honors standing, and acceptance into CRPlan BS major; or permission of instructor. Concur: 3300. Not open to students with credit for 4900S.

4900S  Plan Making  U  6
Plan creation focuses on working with real-world clients. Planning knowledge and skills will be applied to create generate, innovative, and practical solutions.
PreReq: Acceptance into CRPlan BS major; or permission of instructor. Concur: 3300. Not open to students with credit for 4900E.

4910S  Realizing the Plan  U  6
Apply knowledge and skills to an implementation challenge. Work in consultation with professionals to produce a regulation, policy, or tool for use by the client.
PreReq: 4900S (510) or 4900E, or permission of instructor.

4950  Professional Planning Skills Development  U  3
Professional skills including technical writing, public speaking, portfolio development, conflict resolution, and contracts as essential preparation for practice.
PreReq: 4900S (510) or 4900E, and acceptance to the CRPlan BS major; or permission of instructor. Not open to students with credit for 610. Repeatable to a maximum of 15 cr hrs.

4999  Undergraduate Thesis in City and Regional Planning  U  6
Development of topical research/design projects with an interdisciplinary perspective.
PreReq: Permission of instructor.

4999H  Undergraduate Thesis in City and Regional Planning  U  6
Course allows for development of topical research/design projects with an interdisciplinary perspective.
PreReq: Honors standing, and 4780H.

5001  Introduction to GIS for Planning  U  4
The course introduces basic principles and techniques of Geographic Information System (GIS) in city and regional planning. The course focuses on developing hands-on experience of GIS applications in planning. It is also designed to cultivate spatial thinking and help students to gain an understanding of cutting-edge geospatial technologies, their capabilities, uses, and limitations for planning.
PreReq: Not open to students with credit for CivilEn 5400 or Geog 5210.

5010  Historic Preservation Planning  U  3
Cities are rich in history. Policies, incentives and planning aid in preserving unique historic character and heritage of cities.
PreReq: Jr, Sr, or Grad standing. Not open to students with credit for Arch 604.

5100  Technology in Design  U  1 - 5
Software tools, information theory, and technology to aid in preparing for the professional planning workplace. Repeatable to a maximum of 20 cr hrs or 4 completions.

5160  Green Building Methods for Planning  U  1
This course focuses on green building methods, techniques and practices and how they can be applied to city planning practice. Particular attention is paid to LEED-certification, a program that recognizes building practices that save money, reduce water consumption, make better material choices, have higher property values, and overall have fewer negative impacts on the environment.
This course is graded S/U.

5170  Planning & Zoning in Local Government  U  1
The purpose of this course is to learn about how city planning and zoning are used as practical tools for municipal governance. This course will explore topics from the perspective of what local elected and appointed leaders need to know to effectively guide a municipality, navigate codes and laws, and promote public engagement and civil discourse.
This course is graded S/U.

5180  TechniCity  U  3
The way we understand cities is undergoing sweeping transformation, right along with the analytical tools we use to design our cities and the communication tools we use to engage people. Absorbing, studying and understanding the role of technology from a critical viewpoint allows us to generate creative ideas for improving our cities.
PreReq: Jr, Sr, or Grad standing.

5191  Professional Experience in City and Regional Planning  U  0
Professional practice in the field of city and regional planning or suitable related areas.
PreReq: Permission of Instructor. Repeatable to a maximum of 6 completions. This course is graded S/U.

5194  Group Studies in City and Regional Planning  U  1 - 15
Group-based study of City and Regional Planning topics within the frame of an instructor guided course.
PreReq: Permission of Instructor. Repeatable to a maximum of 15 cr hrs or 4 completions.

5200  Metropolitan and Regional Planning  U  3
Cities and towns are becoming increasingly dependent on each other. Progressive approaches to regional planning directly influence the economy and quality of life.
PreReq: Sr or Grad standing. Not open to students with credit for 753.

5300  Airport Planning, Design and Development  U  3
A comprehensive study of airport planning, design and development, the role of the airport and its components as part of the overall air transportation system, the issues related to the planning, design, and development of the airport and its system.
PreReq: Aviation 3100 or CRPlan 3100; or Sr standing in CivilEn major; or Grad standing; or permission of instructor. Cross-listed in Aviation and CivilEn.

5320  Transportation Data Analytics for Planners  U  3
In this course, students will analyze data for the purpose of planning transportation infrastructure. Students will build expertise in innovative transportation data collection (such as drones), improve familiarity with publicly available transportation data sources, develop basic R coding skills to visualize transportation data, and consider careers as transportation planning analysts.
PreReq: Jr, Sr, or Grad standing.

5400  Planning for Housing  U  3
Housing -- including its uses, meaning, design, and role. The creation of a range of housing to support growth and revitalization of cities and regions.
PreReq: Not open to students with credit for 320, 752, or PubAfRs 5400. Cross-listed in PubAfRs.

5461  Latino Urbanism and the Reinvention of the American City  U  3
Interdisciplinary course that examines a new trend of urbanism based on the urban experiences of Latinos and the study of this group’s social, economic, and cultural impact on cities across the US. Taught in English. Team-taught course.
PreReq: Completion of 2nd GE Writing course, and Jr or Sr standing; or permission of instructor. Not open to students with credit for 4461 or Spanish 4461 or 5461. Cross-listed in Spanish.

5500  Energy Planning  U  3
Energy makes cities run, from renewable and non-renewable sources. Energy is a driving opportunity and constraint in urban development.
PreReq: Grad standing, or 3000. Not open to students with credit for 720.

5550  Financing Sustainability  U  3
This course examines sustainability through the lens of financing. The primary foci are two important elements of green infrastructure - food systems and clean energy. Students will explore the systems and industry behind food and energy and develop comprehensive road maps that communities can use to build robust and financially supported supported sustainability systems for food and energy.
PreReq: CRPlan 3400, Grad standing, or permission of instructor.

5670  Creative Place Marketing  U  1
This course introduces the idea of creative placemaking and creative place marketing, explores issues in place marketing and introduces students to key considerations for developing place marketing plans, cultural tourism strategies, and other initiatives that improve the quality and economics of place through arts and culture. Emotional aspects of place and social justice issues are also covered.
This course is graded S/U.

5700  Urban Transportation Demand Forecasting  U  3
Introduction and applications for quantitative demand forecasting in urban transportation.
PreReq: Math 1118 or equiv, or Grad standing. Not open to students with credit for 775 or CivilEn 5700 (775). Cross-listed in CivilEn.

5798  Planning Study Abroad  U  1 - 15
Rapid globalization of cities creates new opportunities to explore, investigate and analyze urban development internationally.
Repeatable to a maximum of 15 cr hrs or 2 completions.

5800  Interdepartmental Seminar  U  1 - 15
Interdepartmental seminar; topics to be announced. Repeatable to a maximum of 15 cr hrs or 5 completions. Cross-listed in Arch and LArch.

5890  Workshop in City and Regional Planning  U  1 - 15
Workshop on city and regional planning issues.
Repeatable to a maximum of 15 cr hrs or 5 completions.

5900  Food System Planning and the Economy  U  3
Examines the social, environmental and economic costs and benefits of our food production, distribution, and consumption.
PreReq: Not open to students with credit for ADEcEn 5900 or PubAfRs 5900. Cross-listed in ADEcEn and PubAfRs.

5980  Design Competition  U  1 - 6
Interdisciplinary teams design proposals to solve problems in the natural or built environment.
PreReq: Jr, Sr, or Grad standing. Repeatable to a maximum of 9 cr hrs or 3 completions. Cross-listed in Arch and LArch.
What changes when we take our plans to the developing world? This course will lead you from Brazil to Nigeria to India to find out—with lots of stops in between. It combines historical and global perspectives on international development theory with real-world case studies that will force you to consider difficult tradeoffs and make tough choices.

6000 Historical Foundations of Planning
The people, movements, and principles which have shaped contemporary planning practice. Historical successes and failures mean for the future of planning. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 643.

6010 Innovation in City and Regional Planning
Successful cities are innovative and forward-thinking. Challenges students to focus on generation of truly innovative ideas to improve cities and regions. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 742.

6080 Advanced GIS for Professional Planning Practice
In-depth and hands-on training in GIS applications for city and regional planning. Prereq: 5001 and Grad standing, or permission of the instructor. Not open to students with credit for 608 or 609.

6100 Participation and Advocacy in Planning
Planning theories that support the planner's role in engaging and advocating for the public. Skills in public engagement techniques and tools. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 712.

6150 Environmental Planning and Policy for a Sustainable Future
This course incorporates environmental considerations into land use planning and policy making. Upon completion of this course students will be able to analyze environmentally related planning problems not requiring in-depth environmental expertise and recognize when such expertise is necessary.

6191S Professional Development
Provides successful candidates with a broad but intensive learning experience in various areas of city and regional planning. The program is designed to prepare individuals for professional planning positions. Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 4 cr hrs. This course is graded S/U.

6193 Independent Studies in City and Regional Planning
Study a specialized topic in City and Regional Planning with an instructor based on mutual interests. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 5 completions. This course is graded S/U.

6194 Group Studies in City and Regional Planning
Group-based study of City and Regional Planning topics within the frame of an instructor guided course. Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions.

6200 Graphic Visualization
Fundamental skills in graphics and graphic technology commonly used in planning, including on-line, print, document, poster, and video layout and design. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 702.

6300 Law and Planning I: Land Use
The impact of law on planning, with an emphasis on the regulation of land use. Prereq: Grad standing, or permission of the instructor. Not open to students with credit for 761.

6310 Law and Planning II: Environment and Society
The role of social and environmental justice and other societal considerations in the establishment of a legal framework in planning. Prereq: 6300 (761), and Grad standing; or permission of instructor. Not open to students with credit for 765 or 766.

6350 The Socially Just City
Poverty reduction, access to public services and improving quality of life are goals to achieving the socially just city. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 3500.

6400 Site Planning and Development
Effective site planning can lead to the development of a strong community. Learn the design, environmental and infrastructure elements that are needed to generate a feasible development project. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 745.

6410 Planning for Sustainable Development
Sustainable development is a broad concept; translated into reality through relevant theory and the implementation of key design, policy and project based solutions. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 724.

6411 Sustainability, Measurement and Power
Indicators drive decisions and inform action. This course introduces students to the history, theory and practice of measuring sustainability, with a focus on the metropolitan environment. Students will come to understand the relationship between sustainability, measurement and governance, analyzing and comparing specific indicators within their institutional, political and social contexts. Prereq: Grad standing.

6420 Infrastructure Planning
Infrastructure development plans address the planning, budgeting and programming challenges of making cities run. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 783.

6425 Measuring Resilience to Disasters for Planning
This course focuses on concepts, elements, theory, and applications for resilience to disasters in urban and regional planning. Students will develop quantitative analytical skills in resilience assessment through various methods, including resilience indicators, cost-benefit analysis, econometric analysis, and simulation analysis. Prereq: Grad standing, or permission of instructor.

6430 Urban Design
Vibrant cities contribute to quality of life, through urban design and urban form. Site analysis, context sensitive design and impacts of design choices are explored. Prereq: Grad standing, or permission of the instructor. Not open to students with credit for 731.

6440 Research Methods for Urban Design and Planning
Behavioral research and evaluation (research design, validity, reliability, data gathering techniques) methods for urban design and planning questions. Prereq: Grad standing, or permission of the instructor. Not open to students with credit for 734.

6460 Real Estate Finance for Planners
Realize plans by understanding the financial mechanisms to fund projects. Explore how public-private partnerships create opportunities for affordable housing, downtown revitalization, and neighborhood improvement. Prereq: Grad standing, or permission of instructor. Cross-listed in PubAfrs.

6500 Plan Making and Analysis Techniques
Collection and analysis of information used to make plans, including population projections and economic activity. Prereq: Grad standing, or permission of instructor.

6500.02 Data and Forecasting for Planning
Models and methods used in the analysis and projection of population and employment, and the major data sources for such analyses, including data shortcomings and problems of comparability. The use of data and projection methodologies by planners, with an emphasis on translating results into policy implications that are understandable by the non-technical reader. Prereq: Permission of instructor.

6600 Evaluation Methods in City and Regional Planning
City and regional planners routinely plan and evaluate public sector interventions which generally take the form of physical infrastructure projects or public policies and programs. This course offers an overview of the concepts, methods, and metrics used to anticipate the impact and evaluate the trade offs of proposed projects, policies, and programs. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 637 or PubPolM/PubAfrs 880.06. Cross-listed in PubAfrs 7501.

6620 Project Management in the Public Sector
Public officials rely on grants to help fund their grand plans. Planners find grants, prepare proposals, and manage grants to effectively support public projects. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 637 or PubPolM/PubAfrs 880.06. Cross-listed in PubAfrs 7501.

6700 Technology in Design
Software tools, information theory, and technology to aid in preparing for the professional planning workplace. Repeatable to a maximum of 20 cr hrs or 4 completions.

6750 Resolving Social Conflict
Multidisciplinary examination of social conflict, its dynamics and negotiated and consensual resolution; offers broad-based framework for diagnosing and managing conflict; applied to legal, environmental, organizational, and geopolitical conflicts. Prereq: Grad standing, or permission of instructor.

6788 Planning Study Abroad
The world is rapidly globalizing. Exploring global cities provides a rich perspective that can be used to evaluate domestic and international planning challenges. Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions.

6890 Workshop in City and Regional Planning
Workshop on city and regional planning issues. Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions.
92 City and Regional Planning

6910 Comprehensive Planning Studio G 6
Application of knowledge and skills to a comprehensive planning process in consultation with professionals to produce a plan for use by a real world client. Prereq: 6400 (745) and 6500 (762), or permission of instructor. Not open to students with credit for 853.

6920 Urban Design/Physical Planning Studio G 6
Improvement of the aesthetics of the built environment through the creation of a physical plan for a portion of a city using an integrative process to solve planning challenges. Course cannot be taken concurrently with other studio courses (6930, 6950, 6960, or 6970). Prereq: 6430 (731), or permission of instructor. Not open to students with credit for 851.

6930 Neighborhood Planning Studio G 6
Planning for neighborhoods engages residents and local non-profit organizations to empower them to solve planning challenges using democratic methods. Course cannot be taken concurrently with other studio courses (6920, 6950, 6960, or 6970). Prereq: 6400 (745) and 6500 (762), or permission of instructor. Repeatable to a maximum of 12 cr hrs.

6950 Transportation Studio G 6
Planning for transportation requires an examination of environmental, social, and economic factors, as well as active engagement of decision makers and transportation users alike. Course cannot be taken concurrently with other studio courses (6920, 6930, 6960, or 6970). Prereq: 6400 (745) and 6500 (762), or permission of instructor. Not open to students with credit for 852.

6960 Sustainability Studio G 6
Planning for sustainability requires systems thinking, strategic solutions and collaborative governance. Sustainability plans will be generated through active engagement with a client community. Course cannot be taken concurrently with other studio courses (6920, 6930, 6960, or 6970). Prereq: 6410 (724), and Grad standing, or permission of instructor. Not open to students with credit for 824.

6970 International Development Studio G 6
Cities and regions across the globe are rapidly urbanizing and are facing planning challenges. Plan development focuses on developing context-sensitive solutions. Course cannot be taken concurrently with other studio courses (6920, 6930, 6950, or 6960). Prereq: 6400 (745) and 6500 (762), or permission of instructor. Not open to students with credit for 749.

6999 Research for Thesis in City and Regional Planning G 1 - 12
Research for Thesis in City and Regional Planning. Prereq: Grad standing, and permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions. This course is graded S/U.

7000 Contemporary Planning Research G 3
Introduction and overview of topics and techniques in planning research. Prereq: Grad standing. Not open to students with credit for 871.01.

7100 City & Regional Planning Theory G 3
Critical inquiry into the dominant theories related to city and regional planning research and practice. Prereq: Grad standing. Not open to students with credit for 864.01.

7110 Development Theory G 3
Critical inquiry into the classic debates and critiques of development theory related to planning research and practice in developing countries. Prereq: Grad standing.

7194 Group Studies in City and Regional Planning G 1 - 15
For group-based study of city and regional planning topics within the frame of an instructor guided course. Prereq: Grad standing, and permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions.

7300 Planning Dissertations and Theses from Start to Finish G 3
Covers the full dissertation/thesis process: topic selection, refinement, proposal development, literature review, methods, data collection/analysis, presenting and publishing, getting a job, life on the job. Prereq: Enrollment in the City and Regional Planning PhD program, or permission of instructor.

7509 Disasters: Preparedness and Response G 3
Introduction to planning, policy, and management issues that arise when disaster strikes, and the roles of government, non-profits, communities, and individuals in emergency preparedness by examining a variety of recent natural and human-made disasters, both in the U.S. and abroad. Cross-listed in PubAfrs.

7531 Economic Development Policy G 3
Takes a practical approach to the legal, policy, and business issues related to urban redevelopment. Students gain a legal perspective as they investigate business and public policy issues surrounding redevelopment in their urban core. Prereq: Not open to students with credit for PubAfrs 880.02. Cross-listed in PubAfrs.

8193 Independent Studies in City and Regional Planning G 1 - 15
Study a specialized topic in City and Regional Planning with an instructor based on mutual interests. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.

8194 Group Studies in City and Regional Planning G 1 - 15
Group-based study of City and Regional Planning topics within the frame of an instructor guided course. Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions.

8200 Teaching Practicum in City and Regional Planning G 0 - 9
A hands on teaching experience in conjunction with a city and regional planning faculty member. Includes syllabus development, course preparation, lecture, discussion experience, and grading review. Prereq: Grad standing. Not open to students with credit for 890.

8300 General Practicum in City and Regional Planning G 0 - 9
Supervised field experience in city and regional planning; analysis and critique of field experience. Prereq: Grad standing. Not open to students with credit for 890.

8999 Research for Dissertation in City and Regional Planning G 1 - 15
Research for Doctoral Dissertation Purposes. Prereq: Enrollment in the City and Regional Planning PhD program. Repeatable to a maximum of 32 cr hrs or 10 completions. This course is graded S/U.

Civil Engineering

2050 Probabilistic Applications and Data Interpretation in Civil and Environmental Engineering U 3
Fundamentals of probability and statistical analysis for applications and data interpretation in Civil and Environmental Engineering design and analysis. Prereq: Enrollment in CivilEn or EnvEng major.

2060 Numerical Analysis Methods for Civil and Environmental Engineering Applications U 4
Implement numerical solution techniques using computer programming in MATLAB and apply them to a variety of problems related to Civil Engineering. Prereq: 2050 or Stat 3450, 3460, or 3470; and Math 2127, 2127, 2255, or 2415; and enrollment in CivilEn or EnvEng major.

2090 Professional Aspects of Civil and Environmental Engineering U 1
Topics in Civil and Environmental Engineering ethics and practice. Must be taken as soon as possible upon entering the major. Prereq: Enrollment in CivilEn or EnvEng major. Not open to students with credit for 460 or EnvEng 460. Cross-listed in EnvEng.

2193 Individual Studies in Civil Engineering U 1 - 5
Individual conferences, assigned readings, and reports on minor investigations. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

2194 Group Studies in Civil Engineering U 1 - 5
Provides groups of students opportunities to pursue special studies not otherwise offered. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

2405 Computer Graphics for Civil Engineers U 1
An introductory course in graphics with emphasis on the application of computer generated graphics to the solution of civil engineering problems. AutoCAD and Civil 3D or similar software to be used. Prereq: Enrollment in pre-CivilEn program, or permission of instructor. Not open to students with credit for Engr 4410.01 or FABEng 3171.

2410 Introduction to Surveying U 3
An introduction to surveying and geomatics, with an emphasis on basic spatial data collection and construction layout using ground-based measurement techniques. Must be taken as soon as possible upon entering the major. Prereq or concour: 2050 or Stat 3450, 3460, or 3470; and enrollment in CivilEn or EnvEng major.

2810 Construction Engineering and Management: An Introduction U 3
Basic engineering and management concepts of construction operations of various foundations, concrete, and steel buildings and bridges. Prereq: Enrollment in CivilEn major. Not open to students with credit for 682.

3080 Economic Evaluation and Optimization in Civil and Environmental Engineering U 3
Fundamentals of engineering economics and optimization for civil and environmental engineering planning and design. Prereq or concour: 2060 (406), and enrollment in CivilEn or EnvEng major. Not open to students with credit for 576 or EnvEng 576. Cross-listed in EnvEng.
3130 Fluid Mechanics U 3
An introduction to fluid mechanics; topics include: fluid properties; fluid statics; flow concepts; continuity, energy, and momentum equations; dimensional analysis; basic pipe flow; lab experiments. Prereq: MechEng 2010 or 2040, and enrollment in CivilEn, EnvEng, or FABEng major; or permission of instructor.

3160 Water Resources Engineering U 3
Pipe systems, introduction to open channel flow, basic hydrology, demographic studies, water supply, and wastewater flow. Prereq: 3130 (413) or EnvEng 413; and CSE 1221 (205) or 1222 (202) or EnGraph 167 or Engr 1221 or 1222 or 1281H or Engineer; and enrollment in CivilEn or EnvEng major. Not open to students with credit for 516 or EnvEng 516.

3310 Structural Engineering Principles U 3
Structural forms and loads, statically determinate structures, and trusses, internal loadings developed, influence lines for statically determinate structures, cables and arches, elastic beam deflections, energy methods. Prereq: MechEng 2010, and enrollment in CivilEn major. Prereq or concur: 2050 or Stat 3450, 3460, or 3470; or permission of instructor.

3510 Civil Engineering Materials U 3
Composition and Characterization of civil engineering materials - concretes, asphalts, plastics, fiber-reinforced composites; elastic, plastic, visco-elastic, and failure characterization under various environmental and mechanical loading conditions. Prereq or concur: 2050 or Stat 3450 or 3460 or 3470, and MechEng 2020, and enrollment in CivilEn major; or permission of instructor.

3540 Geotechnical Engineering U 2
The properties of soils as construction materials (e.g., for earth dams) and as foundations for building are introduced and state-of-the-art numerical techniques for the prediction of seepage and settlement are presented. Contemporary issues such as the impact of soil failure mechanisms and sustainability are covered. Prereq: MechEng 2020 or 2040, and enrollment in CivilEn or EnvEng or FABEng major. Concur: CivilEn 3541. Prereq or concur: CivilEn 2050 or Stat 3450, 3460, or 3470; or permission of instructor.

3541 Geotechnical Engineering Laboratory U 1
Laboratory determination of soil properties including grain size distribution, plasticity, permeability, compaction and shear strength (both drained and undrained). Course must be taken concurrently with 3450, 5561, or 5571. The 3541 course requirement may be waived in 5561 and 5571 by the instructor, if the student demonstrates previous completion of a similar lab program. Concur: 3450, 5561, or 5571.

3700 Transportation Engineering and Analysis U 3
Introduction to mathematical analysis and design of various transportation engineering topics: scheduled services, sight distance, geometric design, freeway capacity, traffic flow and queueing, signalized intersections. Prereq: 2050 or Stat 3450, 3460, or 3470, and enrollment in CivilEn major; or permission of instructor.

4001 Civil Engineering Capstone I U 2
Part 1 of the two semester course sequence for the culminating design component in the curriculum for students in Civil Engineering. Must be taken in semester preceding 4002, with sequence completed as close to graduation as possible. Prereq: 2050 or Stat 3450, 3460, or 3470; and CivilEn 2080, 2405, 2410, 2810, 3090, 3130, 3160, 3310, 3510, 3541, 3700, and 4320 or 4350, and EnvEng 3200; and enrollment in CivilEn major. Not open to students with credit for 4000.01.

4002 Civil Engineering Capstone II U 2
Part 2 of the two semester course sequence for the culminating design component in the curriculum for students in Civil Engineering. Must be taken in semester immediately following 4001, with sequence completed as close to graduation as possible. Prereq: 4000.01 or 4001. Not open to students with credit for 4000.02.

4011 Civil Engineering Global Capstone I U 2
Part 1 of a two semester course sequence satisfying the culminating design component in the curriculum for students in Civil Engineering set in a global development context. Must be taken in sequence with CivilEn 4012, taken as close to graduation as possible. Prereq: 2410, 2810, 3080, 3130, 3160, 3310, 3510, 3540, 3541, 3700, 4320 or 4350, and EnvEng 3200; or permission of instructor.

4012 Civil Engineering Global Capstone II U 2
Part 2 of a two semester course sequence satisfying the culminating design component in the curriculum for students in Civil Engineering set in a global development context. Must be taken in semester immediately following CivilEn 4011 with sequence taken as close to graduation as possible. Prereq: 4011, and Sr standing; or permission of instructor.

4191.01 Civil Engineering Internship I U 1
An engineering work experience with an approved employer for minimum of 10 hours per week for approximately 15 weeks. Typically taken during the autumn or spring academic terms. To earn credit students must demonstrate satisfactory work performance, complete monthly reporting requirements and submit a final report. Prereq: Enrollment in the Civil Engineering major, and permission of instructor. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

4191.02 Civil Engineering Internship II U 2
An engineering work experience with an approved employer for minimum of 30 hours per week for approximately 15 weeks. Typically taken during the summer academic term. To earn credit students must demonstrate satisfactory work performance, complete monthly reporting requirements and submit a final report. Prereq: Enrollment in the Civil Engineering major, and approval of the Civil Engineering Internship Advisor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

4193 Individual Studies in Civil Engineering U 1 - 5
Individual conferences, assigned readings, and reports on minor investigations. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

4194 Group Studies in Civil Engineering U 1 - 5
Provides groups of student opportunities to pursue special studies not otherwise offered. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

4210 The Physics of Sustainable Buildings U 3
Equips students to understand and properly model the drivers of energy consumption and human exposure to airborne pollutants in buildings. Overview of the physical laws governing transport processes in buildings. Methods of modeling these processes that are specific to buildings, including energy balances, mass balances and their constituents. Prereq: 3130 and Math 2174, 2177, or 2415; or permission of instructor.

4310 Structural Analysis U 3

4320 Structural Steel Design U 3
Design of steel tensile members, compression members, beams, beam-columns, and bolted and welded connections based on AISC Specifications. Design problem solving. Introduction to computer-aided design. Prereq: 3310 (431), and enrollment in CivilEn major. Not open to students with credit for 532.

4340 Behavior of Structural Element U 3
Mechanics of beams - symmetrical bending and unsymmetrical bending; shear stresses and shear center for thin flange beams; buckling of columns; pressure vessels and combined loadings. Prereq: 3310 (431). Not open to students with credit for 534.

4350 Reinforced Concrete Design U 3
Analysis and design of reinforced concrete beams, one-way slabs and columns under flexure, shear and axial loads. Prereq: 3310 (431), and enrollment in CivilEn major. Not open to students with credit for 535.

4552 Design and Construction of Flexible Pavements U 3
The design, manufacturing, placement, compaction and maintenance of hot mix asphalt for roadways with coverage on how to determine and specify which mixture to use for a given application. Sustainable roadway design is also covered. Prereq: 3510 (451); and Math 2250 (255), 2415 (415) or 2177. Not open to students with credit for 552.

4600 Project Management in Civil Engineering U 3
Comprehensive guide to project management methods, tools, and techniques. Prereq: Sr standing, and enrollment in CivilEn major. Prereq or concur: 4998H.

4998 Undergraduate Research in Civil Engineering U 1 - 5
Opportunity for undergraduate students to conduct research in Civil and Environmental Engineering. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

4998H Undergraduate Research in Civil Engineering U 1 - 5
Opportunity for undergraduate honors students to conduct research in Civil and Environmental Engineering. Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

4999 Civil Engineering Research for Thesis U 1 - 5
Supervised research and project work. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

4999H Civil Engineering Research for Thesis U 1 - 5
Supervised research and project work arranged individually for honors students. Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

5001 Introduction to Geographic Information Systems U G 4
Introduction to the basic principles of geographic information systems and their use in spatial analysis and information management. Prereq: 2050, Stat 3450, 3460, or 3470, and Sr standing; or Grad standing in CivilEn or EnvEng; or permission of instructor.
94 Civil Engineering

5130 Applied Hydrology U G 3
Hydrologic cycle, meteorology, streamflow, evapotranspiration, hydrographs, runoff relations, runoff hydrographs, groundwater, unit hydrographs, flood routing, frequency and duration studies, and application of hydrologic techniques. Prereq: 3160 (516) or EnvEng 516. Not open to students with credit for 613 or EnvEng 613.

5162 Introduction to Laminated Composite Materials U G 3
Introduction to anisotropic material behavior and failure assessment of laminated composite materials. Classical lamination theory, beams, plates and shells. Prereq: MechEng 2020 (420) or 2040; or Grad standing in Engineering; or permission of instructor. Not open to students with credit for 662, 762, MechEng 5162, 662, or 762. Cross-listed in MechEng.

5168 Introduction to the Finite Element Method U G 3
Basic concepts, formulation, and application of finite element techniques for numerical solution of problems of engineering and scientific interest. Prereq: 2060, Math 2568, 2174, or 2177, or equiv.; or Grad standing in Engr or Math. Not open to students with credit for MechEng 5168 or Math 5168. Cross-listed in Math.

5194 Group Studies in Civil Engineering U G 1 - 5Provides groups of students opportunities to pursue special studies not otherwise offered. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

5220 Open Channel Hydraulics U G 3
Flow classifications, channel properties, energy and momentum principles, critical flow, uniform flow formulas, erodible and nonerodible channel design, and gradually-varied profile computations. Prereq: 3160 (516) or EnvEng 516, and Math 2177, or 2415 and 2568. Not open to student with credit for 722.

5230 Transport Phenomena in Water Resources Engineering U G 3
Study of the mechanisms by which momentum, heat, and mass are transported in fluid systems of interest to water resources engineers. Prereq: 3160 (516) or EnvEng 516, and Math 2173, 2177, 2255 (255), or 2415 (415). Not open to students with credit for 723.

5240 Groundwater Engineering U G 3
The role of groundwater in the hydrologic cycle, water supply, construction, and contamination. Includes principles describing subsurface water movement (seepage, saturated, and unsaturated flow). Emphasis on gaining a working knowledge of techniques used in applied engineering practice to estimate groundwater parameters for design purposes. Applications include well design, pumping, and drainage. Prereq: 3130, or Grad standing; or permission of instructor. Not open to students with credit for 750.

5300 Airport Planning, Design, and Development U G 3
A comprehensive study of airport planning, design & development, the role of the airport and its components as part of the overall Air Transportation System, and the issues related to the planning, design, and development of the airport and its systems. Prereq: Aviatn 3000 or CRPlan 3010, or Sr standing in CivilEn major, or Grad standing, or permission of instructor. Cross-listed in Aviatn and CRPlan.

5310 Matrix Structural Analysis U G 3
Analysis of frame structures by force and displacement methods using matrices. Prereq: 4310 (531). Not open to students with credit for 735.

5320 Intermediate Structural Steel Design U G 3
Design of bolted and welded building connections; structural behavior in the nonlinear range; plastic analysis and design of steel structures. Prereq: 4320.

5350 Intermediate Reinforced Concrete Design U G 3
Analysis and design of reinforced concrete systems and components. Prereq: 4350 (535). Not open to students with credit for 731.

5360 Bridge Engineering U G 3
Types of bridges, aesthetics in bridge design; loads on bridges; selection of bridge type; AASHTO specifications for bridge design; design of steel bridges. Prereq: 4310 (531) and 4320 (532). Not open to students with credit for 736.

5370 Prestressed Concrete Design U G 3
Design applications for prestressed concrete members and structures. Basic concepts to be covered include flexural and shear design, stress analysis, deflections, and prestress losses. Prereq: 4350 (535). Not open to students with credit for 737.

5410 Engineering Surveying U G 3
Surveying applications for engineering, construction, mining and transportation work. Route surveying and geometric design; topographic site surveys and mapping; earthwork computations. Prereq: 2410, GeoSciE 410, or 450, and enrollment in CivilEn major, or permission of instructor. Not open to students with credit for GeoSciE 502.

5411 Legal Aspects of Surveying U G 4
History of measurement; development of land survey systems; milestones in technology; Land Surveyor's role; types of land surveys; retracement principles; laws on surveying practices. Prereq: 2410 (400), and enrollment in CivilEn major; or permission of instructor. Not open to students with credit for GeoSciE 560 and 561.

5412 Land Boundary & Development Principles U G 4
Analysis of evidence and procedures for boundary location; preparing land boundary descriptions; process of subdividing and platting land. Prereq: 5411, or 560 and 561, and enrollment in CivilEn major; or permission of instructor. Not open to students with credit for GeoSciE 561 and 562.

5420 Remote Sensing of Environment U G 3
The energies of the natural and cultural environment, current remote sensing systems and case histories of applications in measuring the environment. Prereq: 2410 (400), or permission of instructor. Not open to students with credit for 603 or 606.

5422 Terrain Analysis U G 3
Principles and applications of photo pattern analysis, geologic and geomorphologic patterns, terrain studies, and land use suitability and capability mapping. Prereq: 2050 or Stat 3450, 3460, or 3470; or permission of instructor.

5441 Introduction to GPS: Theory and Applications U G 3
Introduction to reference systems, fundamentals of GPS design and operation; GPS observables, error analysis and handling; data collection and data processing; interdisciplinary applications of GPS. Prereq: Math 1172 or 1544 (154) or 2153 (254), and Jr standing or above; or Grad standing; or permission of instructor. Not open to students with credit for GeoSciE 608.

5461 Geospatial Numerical Analysis U G 4
Application of adjustment techniques to geo-spatial information including but not limited to GPS, Photogrammetry GIS and remote sensing. Prereq: 2410 (400), or Grad standing. Not open to students with credit for GeoSciE 650 or 651.

5510 Durability and Condition Assessment of Reinforced Concrete Structures U G 3
Concrete Structures
Stress-strain properties of soil and rock. Strength of cohesive and non-cohesive materials under a variety of loads. Settlement and stability analyses of soil and rock slopes in both in-situ and reconstituted materials. Prereq: 3540, or Grad standing.

5571 Principles of Foundation Analysis and Design U G 3
Design methods (classical and numerical) will be presented for the analysis of excavations, earth structures, shallow and deep foundations. The course introduces: site investigation techniques, failure mechanisms and design techniques of footings, drilled shafts, sheet piles, driven piles, anchors, tiebacks, and MSE walls, as well as, stability and settlement calculations. Prereq or concur: 3540 and 3541; Grad standing; or permission of instructor.

5581 Numerical Methods in Geotechnical Engineering U G 3
Introduction to Geomechanical Numerical modeling of soils and development of Soil-Structure Interaction (SSI) solutions using the Finite Difference and Element Methods, and to the constitutive modeling of soils based on elasticity and plasticity deformation theories. Multiple numerical techniques that are widely used in Geotechnical engineering and Soil-Structure interaction problems. Prereq: 3540; and 5561 or 5571; or permission of instructor.

5584 Sustainable Infrastructure for Developing Rural Communities U G 3
Working effectively with developing rural communities to identify and acquire their basic infrastructure needs demands a combination of community development and engineering expertise. This series of courses will, at an introductory level, bridge the gap between these two disciplines. It will provide the engineer with the knowledge of how to design sustainable infrastructure systems.

5601.01 Sustainable Infrastructure for Developing Rural Communities U G 3
Communities
Prereq: Permission of instructor.

5700 Urban Transportation Demand Forecasting U G 3
Introduction and applications of quantitative demand forecasting in urban transportation. Prereq: 3700 (570), or Grad standing in CivilEn, or permission of instructor. Not open to students with credit for 775 or CRPlan 5700 (775). Cross-listed in CRPlan.

5720 Transportation Engineering Data Collection Studies U G 3
Methods of collecting and analyzing transportation data with empirical applications. Prereq: 3700 (570), or Grad standing in CivilEn, or permission of instructor. Not open to students with credit for 672.

5730 Highway Location and Design U G 3
Methods of route location; design standards for highways, interchanges, freeways, and arterials; discussion of computer methods for highway design. Prereq: 3700 (570), or Grad standing in CivilEn, or permission of instructor. Not open to students with credit for 673.
5740 Design and Operation of Road Traffic Facilities  U G  3
Traffic laws and ordinances; operational design of streets, intersections, parking, and terminal facilities; design and operation of traffic control devices.
Prereq: 3700 (570), or Grad standing in CivEn, or permission of instructor. Not open to students with credit for 774.

5750 Instrumentation, Signals, and Control in Transportation  U G  3
Applications
An interdisciplinary course bringing together electrical engineering tools and transportation applications. Students gain valuable experience working in teams while learning traffic flow, surveillance and control.
Prereq: 3700 (570), or Grad standing in Engineering or Science, or permission of instructor. Not open to students with credit for 675 or ECE 5400 (675). Cross-listed in ECE 5400.

5760 Network Metrics and Control in Transportation Systems  U G  3
Course covers fundamental analysis tools including: time space diagram, queuing theory, traffic flow theory, and further network theory. Includes application to intersection control (signal timing).
Prereq: 3700 (570), or Grad standing in CivEn, or permission of instructor. Not open to students with credit for 776.

5770 Urban Public Transportation  U G  3
This course focuses on the analysis, planning, and design of bus and rail urban public transportation services and operations. Fundamental knowledge and methods for network and route planning, service planning, design, performance monitoring, and operations control. Analytical tools including probability, statics, and optimization are extensively used in this course.
Prereq: 3700 (570), or Grad standing in CivEn, or permission of instructor. Not open to students with credit for 670. Cross-listed in CRPlan.

5780 Seminar in Transportation Engineering and Planning  U G  1
Speakers from and site visits to transportation agencies, organizations, and companies.
Prereq: 3700 (570), or Grad standing in CivEn, or permission of instructor. Repeatable to a maximum of 3 cr hrs.

5810 Construction Safety and Forensics  U G  3
Practical aspects of identifying construction and structural problems, construction accidents, mechanisms of failures and accidents, methods of avoidance and forensic engineering.
Prereq: 2810 (682), or permission of instructor. Not open to students with credit for both 683 and 688.

5820 Construction Estimating  U G  3
Practical aspect in estimating real construction projects encompassing highway, foundation, buildings, and bridges.
Prereq: 2810 (682), or permission of instructor. Not open to students with credit for 685.

5830 Construction Scheduling  U G  3
Practical aspects in identifying construction activities and their relations, establishing visual representation of a project schedule, and computing the completion date of the project.
Prereq: 2810 (682), or permission of instructor. Not open to students with credit for 684.

5840 Construction Contracts and Claims  U G  3
Practical aspects of the development and interpretation of contracts and claims focusing on the construction industry.
Prereq: 2810 (682), or permission of instructor. Not open to students with credit for 686.

6193 Individual Studies in Civil Engineering  G  1 - 5
Individual conferences, assigned readings, and reports on minor investigations. Topics selected to give the advanced student opportunity to pursue special studies not otherwise offered.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

6194 Group Studies in Civil Engineering  G  1 - 5
Provides groups of students opportunities to pursue special studies not otherwise offered.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

6210 The Physics of Sustainable Buildings  G  3
Evolves students to understand and properly model the drivers of energy consumption and human exposure to airborne pollutants in buildings. Overview of the physical laws governing transport processes in buildings. Methods of modeling these processes that are specific to buildings, including energy balances, mass balances and their constituents.
Prereq: Grad standing in CivEn, or permission of instructor.

6211 Simulation of Building Energy Performance  G  3
Simulation of building energy consumption under various design or retrofit scenarios. Prediction of the impact of design decisions and energy conservation measures on building energy consumption. Employment of EnergyPlus and OpenStudio, free but supported and open source building energy modeling tools, to develop and simulate a model of a real building.
Prereq: Grad standing in the College of Engineering, or permission of instructor.

6230 Numerical Models in Water Resources Engineering  G  3
Lake, river, and coastal contaminant or heat numerical transport model formulation; averaging; finite difference and finite volume methods; errors, stability; data requirements, verification procedures.
Prereq: 5230. Not open to students with credit for 823.

6300 Dynamics of Structures  G  3
Concepts in structural dynamics and their applications in civil engineering type structures. Methods to determine dynamic response of single degree of freedom systems with free and forced vibrations, similar concepts in discrete and continuous multi-degree of freedom systems. Numerical methods to determine response over time, industry standard analysis software.
Prereq: Grad standing, or permission of instructor.

Theories and practices in GNSS data processing for high-precision (centimeter-level) static and kinematic applications. In-depth aspects of GNSS code and phase data, observation models, estimation strategy, and some physical phenomenon that affects the data. Data processing routines to estimate various parameters, hand-on experience in analyzing real GNSS data.

6451 Introduction to Photogrammetry  G  4
Analytical and digital photogrammetry, bundle block adjustment, analytical camera calibration, aerotriangulation, image acquisition systems, GPS controlled aerotriangulation, quality control and network design, DEMs and orthophotography.
Prereq: Not open to students with credit for 725 and 728.

6510 Advanced Concrete Materials  G  3
This course takes a materials science-based approach to understanding the materials and processes involved in hydration and property development of cementitious materials. Students will then apply that learning to understand how to design systems which will prevent, and/or mitigate durability concerns common in concrete infrastructure.
Prereq: Grad standing in CivEn, or permission of instructor.

6880 Civil Engineering Graduate Seminar  G  1
This seminar will strengthen presentation skills, engender professional development, and broaden understanding of current engineering research essential for graduate students and professional engineers. Components of this seminar will include: presentations of research work conducted within the department, workshops on professional skills, and talks by invited speakers.
Prereq: Grad standing in CivEn, or permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

6999 Civil Engineering Research for Thesis  G  1 - 15
Research for thesis purposes only.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 15 completions. This course is graded S/U.

7320 Structural Reliability  G  3
Fundamental concepts, theoretical developments, and simulation strategies for the assessment of the reliability of structures with applications in design and performance evaluation of new and existing structures and other engineered systems.
Prereq: 2050, and 4320 or 4350; or Grad standing in CivEn; or permission of instructor.

7330 Earthquake Engineering  G  3
Analysis and design of structures subject to seismic loading; case studies of behavior of structures during earthquakes; design of structures to minimize earthquake damage; earthquake-resistant systems for high-rise buildings; vibration control.
Prereq: A course in structural dynamics or vibrations, or permission of instructor. Not open to students with credit for 830.

7350 Advanced Reinforced Concrete  G  3
Advanced topics in reinforced concrete structural modeling, analysis, design and detailing.
Prereq: 5350. Not open to students with credit for 831.

7421 Advanced Machine Learning for Remote Sensing Image Interpretation  G  3
Introduces basic high-resolution remote sensing concepts with focus on optical remote sensing, and computational solutions for typical remote sensing problems. Students are assumed to know basic knowledge in statistical estimation, linear algebra and numerical methods for engineering. Students with prior experience on remote sensing/machine learning/computer vision will find this easier to follow.
Prereq: Grad standing, or permission of instructor. Not open to students for credit for ECE 7402. Cross-listed in ECE 7402.

7453 Photogrammetric Computer Vision  G  3
Fundamental processes of digital photogrammetry. Advanced DEM and orthophoto methods. Extraction of high level features such as lines curves and segments; Matching high level features.
Prereq: 6451.

7730 Transportation Demand Modeling  G  4
Various applications of demand modeling in transportation, with emphasis on discrete choice demand modeling.
Prereq: 5700, CRPlan 5700, or permission of instructor. Not open to students with credit for 873.

7740 Urban Transportation Network Analysis  G  4
Various networks concepts and applications in transportation, with emphasis on equilibrium-based traffic assignment.
Prereq: 5700, CRPlan 5700, or permission of instructor. Not open to students with credit for 874.
96 Civil Engineering

7760 Transportation Management Systems G 3
Concepts and methods for the management of unscheduled and scheduled urban transportation systems. Emphasizes network performance and travel demand interactions, and real-time applications.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 878.

7770 Infrastructure Systems Analysis G 3
Presents a systems approach to infrastructure provision and management with a focus on the uncertainty inherent to large-scale and long-lived facilities.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 777.

7780 Graduate Student Seminar in Transportation Engineering and Planning G 1
Students will present their research to one another to gain experience presenting, learn what other students are doing, and provide feedback to one another.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

7790 Transportation Practicum G 4
Practical experience and perspective on practice of transportation engineering and planning.
Prereq: Grad standing in Civil En and CPEn Dual M.S. Degree Program, and permission of instructor. Not open to students with credit for 890. This course is graded S/U.

8193 Individual Studies in Civil Engineering G 1 - 5
Individual conferences, assigned readings, and reports on minor investigations. Topics selected to give the advanced student opportunity to pursue special studies not otherwise offered.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

8194 Group Studies in Civil Engineering G 1 - 5
Provides groups of students opportunities to pursue special studies not otherwise offered.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

8443 Advanced Topics in GPS G 3
Advanced topics in GPS focused on science, engineering and navigation applications of GPS: Positioning algorithms; Remote sensing with GPS; GPS atmospheric studies; GPS integration with other navigation and imaging sensors (digital cameras, LiDAR).
Prereq: 7442, 6461, or GeodSci 650, 651, or equivalent; or permission of instructor. Not open to students with credit for GeodSci 888.

8454 Videogrammetry G 3
Optical flow; neuronal processing; measuring motion field; geometry of motion field; camera motion; rigid and nonrigid body motion; measurements from motion; block adjustment using motion.
Prereq: 6451 and 7442.

8810 Construction Intelligent System and Simulation I G 3
Applications of intelligent system to construction systems and operations. Simulations include mathematics and computer modeling. Knowledge about computer programming recommended.
Prereq: 2810 and 5810, or permission of instructor. Not open to students with credit for 881.

8820 Construction Intelligent System and Simulation II G 3
Applications of intelligent system to construction systems and operations. Simulations include mathematics and computer modeling. Knowledge about computer programming recommended.
Prereq: 8810, or permission of instructor. Not open to students with credit for 888.

8998 Graduate Research in Civil Engineering G 1 - 15
Graduate level research in Civil Engineering.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 15 completions. This course is graded S/U.

8999 Civil Engineering Research for Dissertation G 1 - 15
Research for dissertation purposes only.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 15 completions. This course is graded S/U.

Classics

1101 Introduction to Classical Literature U 3
Introductory survey of the Greek and Roman achievement in literature and its contribution to Western thought; selected readings in English translation in major authors from Homer to Boethius.
GE lit and diversity global studies course.

1101H Introduction to Classical Literature U 3
Introductory survey of the Greek and Roman achievement in literature and its contribution to Western thought; selected readings in English translation in major authors from Homer to Boethius.
Prereq: Honors standing, or permission of instructor. GE lit and diversity global studies course.

2010 Classical Background of Scientific Terminology U 3
An introduction to the Greek and Latin roots of modern scientific terminology, especially medical and pharmaceutical terminology. This is an online-based course. In-person sessions include first-day orientation, midterm, and the final exam.
Prereq: Not open to students with credit for Classics 210.

2194 Group Studies U 1 - 9
Topics in classical studies.
Au, Sp, Su Sems. Prereq: Permission of instructor. Repeatable to a maximum of 36 cr hrs or 12 completions. This course is graded S/U.

2194H Group Studies U 1 - 9
Topics in classical studies.
Au, Sp, Su Sems. Prereq: Honors standing, or permission of department or instructor. Repeatable to a maximum of 36 cr hrs or 12 completions. This course is graded S/U.

2201 Classical Civilization: Greece U 3
A survey of ancient Greek civilization, concentrating upon important facets of literature, history, art, and archaeology.
Prereq: Not open to students with credit for Classics 224. GE cultures and ideas and diversity global studies course.

2201H Classical Civilization: Greece U 3
A survey of ancient Greek civilization, concentrating upon important facets of literature, history, art, and archaeology.
Prereq: Honors standing, or permission of department or instructor. Not open to students with credit for Classics 224H. GE cultures and ideas and diversity global studies course.

2202 Classical Civilization: Rome U 3
A survey of the civilization of ancient Rome, concentrating upon important facets of literature, history, art, and archaeology.
Prereq: Not open to students with credit for Classics 225. GE cultures and ideas and diversity global studies course.

2202H Classical Civilization: Rome U 3
A survey of the civilization of ancient Rome, concentrating upon important facets of literature, history, art, and archaeology.
Prereq: Honors standing, or permission of department or instructor. Not open to students with credit for Class 2202 (Classics 225) or 222H. GE cultures and ideas and diversity global studies course.

2204 Medicine in the Ancient World U 3
An introduction to the theory and practice of medicine in ancient Greece and Rome.
Prereq: Not open to students with credit for Classics 230. GE cultures and ideas and diversity global studies course.

2205 Sports and Spectacles in the Ancient World U 3
The history and social role of gymnastic and athletic competition in Greece and Rome. The evolution of their modern revivals.
Prereq: Not open to students with credit for Classics 250. GE cultures and ideas course.

2220 Classical Mythology U 3
Personalities and attributes of the Greek and Roman gods and goddesses, their mythology and its influence on Western culture.
Prereq: Not open to students with credit for Classics 250. GE cultures and ideas course.

2220H Classical Mythology U 3
Personalities and attributes of the Greek and Roman gods and goddesses, their mythology and its influence on Western culture.
Prereq: Honors standing, or permission of department or instructor. Not open to students with credit for 2220. GE lit and diversity global studies course.

2222 From Ishtar to Christ: The History of Mediterranean Religions U 3
This course introduces students to the historical facts of 10 ancient Mediterranean religions in a context that trains them to study religions more generally. It also teaches them how two of the most prominent religions today—Judaism and Christianity—succeeded within a richly diverse religious marketplace, and how religions respond to their political, economic, and social environments.
Prereq: Not open to students with credit for RelStds 2222. GE historical study course. Cross-listed in RelStds.

2301 Classical Archaeology U 3
Introduction to the principles, methods, and history of archaeological investigation in the ancient Greek and Roman world, illustrated through a selection of major classical sites.
Prereq: Not open to students with credit for Classics 240, History 2210 (240 or 306), or HistArt 2301 (306). GE cultures and ideas and historical study and diversity global studies course. Cross-listed in History 2210 and HistArt 2301.

2500H Greek Identities: Ancient and Modern U 3
Explores how Greeks defined themselves by comparing ethnic and national identity in ancient and modern Greece. What does it mean to be Greek?
Prereq: Not open to students with credit for MythGk 2500H (250H). GE lit course.

2798.01 Study Tour U 3 - 9
Specific content, location, semester(s) of offering, and prerequisites vary. Contact department for details.
Prereq: Permission of instructor. Repeatable to a maximum of 27 cr hrs or 3 completions.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2798.02</td>
<td>Byzantium - Constantinople - Istanbul: Crossroads of East and West</td>
<td>U 3</td>
<td>Survey of the influence Latin as a literary language had on Western cultures from the Middle Ages to the present day. GE cultures and ideas and historical study course.</td>
</tr>
<tr>
<td>3100</td>
<td>Topics in Ancient Literature and Culture</td>
<td>U 3</td>
<td>In depth analysis of selected topics in ancient literature and culture. Varies. Repeatable to a maximum of 6 cr hrs.</td>
</tr>
<tr>
<td>3101</td>
<td>Greek and Roman Epic</td>
<td>U 3</td>
<td>Study of Greek and Roman epic based on extensive readings in English translation of works by authors such as Homer, Apollonius, Vergil and Ovid. Prereq: Not open to students with credit for Classics 301.</td>
</tr>
<tr>
<td>3102</td>
<td>Greek and Roman Drama</td>
<td>U 3</td>
<td>Study of Greek and Roman drama based on extensive readings in English translation of the plays of such authors as Sophocles, Euripides, Menander, Plautus, or Seneca. Prereq: Not open to students with credit for Classics 302.</td>
</tr>
<tr>
<td>3103</td>
<td>Comic Spirit in Antiquity</td>
<td>U 3</td>
<td>Study of the comic literature of the Greco-Roman world based on extensive readings in English translation drawn from epic, drama, satire, and the novel. Prereq: Not open to students with credit for Classics 303.</td>
</tr>
<tr>
<td>3203</td>
<td>War in Ancient Greek and Roman Literature</td>
<td>U 3</td>
<td>Study of ancient warfare as a complex political, social, cultural, and economic process through the lens of Greek and Latin literary texts. GE lit course.</td>
</tr>
<tr>
<td>3215</td>
<td>Sex and Gender in the Ancient World</td>
<td>U 3</td>
<td>Introductory survey of women, gender, and sexual relations in the ancient Mediterranean world, especially Greece and Rome. Prereq or concur: English 1110.xx, or permission of instructor. Not open to students with credit for History 3215. GE historical study and diversity global studies course. Cross-listed in History.</td>
</tr>
<tr>
<td>3401</td>
<td>Ancient Greek Religion</td>
<td>U 3</td>
<td>Study of ancient Greek religions, including the beginnings of Christianity. Prereq: Not open to students with credit for Classics 323. GE historical study course.</td>
</tr>
<tr>
<td>3403</td>
<td>The Hero in Classical Mythology</td>
<td>U 3</td>
<td>The development and interpretation of the major cycles of classical saga based on extensive readings in Greek and Roman epic and drama. Prereq: Not open to students with credit for Classics 322.</td>
</tr>
<tr>
<td>3404</td>
<td>Magic in the Ancient World</td>
<td>U 3</td>
<td>An introduction to the theory and practice of magic in the ancient Mediterranean, how people viewed it, and how it survived in later epochs. GE cultures and ideas and diversity global studies course.</td>
</tr>
<tr>
<td>3405</td>
<td>Christians in the Greco-Roman World</td>
<td>U 3</td>
<td>The origins and development of Christianity in its historical, social, and cultural context. Prereq: Not open to students with credit for Classics 325.</td>
</tr>
<tr>
<td>3408</td>
<td>Ancient Roman Religion</td>
<td>U 3</td>
<td>Study of religious life and institutions in the Roman Republic and Empire, with due attention to the primary sources, in translation, and their difficulties. GE cultures and ideas and historical study course.</td>
</tr>
<tr>
<td>3956</td>
<td>Black Cultures and Classical Education</td>
<td>U 3</td>
<td>Study the role of classics in African and the African Diaspora (US, Caribbean, Brazil). Major themes include: adaptations of classical literature, impact of classical education, classics as a tool of colonial oppression, classics as a tool of anti-colonial resistance, theories of race, classical and classicizing depictions of black bodies. Prereq: Not open to students with credit for AtAmAsT 3956. Cross-listed in AtAmAsT. GE lit course. GE diversity global studies course.</td>
</tr>
<tr>
<td>4031</td>
<td>Sacred Texts of the Ancient World</td>
<td>U 3</td>
<td>Study of sacred texts from Greece and Rome.</td>
</tr>
<tr>
<td>4101</td>
<td>Classical Receptions: Ancient Greece and Rome in the Modern World</td>
<td>U 3</td>
<td>Explorations of the reception of ancient culture in the modern world, from creative cultural engagements to comparative political and social topics.</td>
</tr>
<tr>
<td>4201</td>
<td>Political Thought and Institutions in the Greco-Roman World</td>
<td>U 3</td>
<td>Selected topics concerning the development of ancient political theory. Prereq: Not open to students with credit for Classics 505.</td>
</tr>
<tr>
<td>4501</td>
<td>The Good Life: Ancient Ethical Philosophy</td>
<td>U 3</td>
<td>Explorations of ancient ethical philosophy, from Socrates to the Hellenistic schools of Epicureanism and Stoicism, including their legacy in later periods.</td>
</tr>
<tr>
<td>4998</td>
<td>Research</td>
<td>U 1 - 3</td>
<td>A program of study arranged for each student. Prereq: Sr standing, and permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>4998H</td>
<td>Honors Research</td>
<td>U 1 - 3</td>
<td>A program of study arranged for each student. Prereq: Honors standing, and Sr standing, and permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>4999</td>
<td>Thesis Research</td>
<td>U 1 - 6</td>
<td>A program of study leading to the writing of a thesis and an oral defense that will integrate the experience of earlier courses in classics. Prereq: Jr standing or above, and enrollment in Classics major; or permission of instructor or department. Repeatable to a maximum of 16 cr hrs or 3 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>4999H</td>
<td>Honors Thesis Research</td>
<td>U 1 - 6</td>
<td>A program of study leading to the writing of a thesis and an oral defense that will integrate the experience of earlier courses in classics. Prereq: Honors standing, Jr standing or above, and Enrollment in Classics Major; or permission of instructor or department. Repeatable to a maximum of 18 cr hrs or 3 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>5194</td>
<td>Group Studies</td>
<td>U G 1 - 9</td>
<td>Topics in classical studies at the upper undergraduate and introductory/intermediate graduate levels. Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 27 cr hrs or 9 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>5302</td>
<td>Studies in Greek or Roman Topography</td>
<td>U G 3</td>
<td>The topography and archaeology of ancient Athens, Rome, or other sites important to Greco-Roman literature and civilization. Prereq: Not open to students with credit for Classics 656.</td>
</tr>
<tr>
<td>5401</td>
<td>Methodologies for the Study of Ancient Religions</td>
<td>U G 3</td>
<td>Introduction to the methodologies and the scholars who have significantly influenced the study of ancient religion. Prereq: Not open to students with credit for NE LC 5401. Cross-listed in NELC.</td>
</tr>
<tr>
<td>5797</td>
<td>Study at a Foreign Institution</td>
<td>U G 1 - 9</td>
<td>Study at a foreign institution for which the student receives credit from OSU. Prereq: Permission of department chairperson. Repeatable to a maximum of 27 cr hrs or 3 completions. This course is progress graded.</td>
</tr>
<tr>
<td>5798.02</td>
<td>Study Tour: Foreign</td>
<td>U G 3 - 9</td>
<td>Specific content, location, semester(s) of offering, and prerequisites vary. Contact department for details. Prereq: Classics 3201.01, 3201.02, or 5302, or permission of department chairperson. Repeatable to a maximum of 27 cr hrs or 3 completions.</td>
</tr>
<tr>
<td>6780</td>
<td>History of Philology</td>
<td>G 3</td>
<td>A seminar introducing first-year graduate students to methods, instrument and history of research in ancient studies.</td>
</tr>
<tr>
<td>7890</td>
<td>Seminar on Classical Literatures and Cultures</td>
<td>G 3</td>
<td>Graduate research seminar on topics that span across Greek and Latin (and occasionally other ancient Mediterranean) texts and cultures. Prereq: Grad standing. Repeatable to a maximum of 9 cr hrs.</td>
</tr>
<tr>
<td>7891</td>
<td>Graduate Seminar on Epigraphy</td>
<td>G 3</td>
<td>Graduate research seminar on Greek and/or Latin epigraphy. Prereq: Not open to students with credit for Classics 811.</td>
</tr>
<tr>
<td>7892</td>
<td>Graduate Seminar on Greek and Latin Palaeography and Textual Criticism</td>
<td>G 3</td>
<td>Research seminar on Greek and Latin palaeography and textual criticism. Prereq: Not open to students with credit for Classics 812.</td>
</tr>
<tr>
<td>7893</td>
<td>Graduate Seminar on Religion and Mythology of the Ancient World</td>
<td>G 3</td>
<td>Graduate research seminar on Greek and/or Roman religion and mythology. Reading knowledge of Greek and/or Latin preferred; special arrangements can be made for exceptional students without reading knowledge. Prereq: Not open to students with credit for Classics 870. Repeatable to a maximum of 9 cr hrs.</td>
</tr>
<tr>
<td>7894</td>
<td>Graduate Seminar on Late Antiquity and Byzantium</td>
<td>G 3</td>
<td>Research Seminar on select topics in the history, cultures, and literatures of Late Antiquity and Byzantium. Prereq: Not open to students with credit for Classics 890.</td>
</tr>
</tbody>
</table>
Graduate Seminar on New Testament and Early Christian Literature
Graduate research seminar on the exegetical problems and current methodologies in the academic study of the New Testament and other early Christian literature. Reading knowledge of Greek preferred; special arrangements can be made for exceptional students without reading knowledge.
Prereq: Grad standing. Repeatable to a maximum of 9 cr hrs.
8301 Studies in Ancient Greek and Roman Art
Advanced study and specialized research on major topical problems in ancient art.
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. Cross-listed in HistArt.

Communication

1100 Communication in Society
Role of communication in society, forms, strategies, theories and issues; interpersonal, group, organizations, public and mass communication.
Prereq: Not open to students with credit for 200. GE soc sci indivs and groups course.
1101 History of Communication
History of human communication from the beginning of spoken and written communication to modern mediated and mass communication.
Prereq: Not open to students with credit for 101. GE soc sci indivs and groups course.
1102H History & Theories of Communication
This is a combination of Comm 1101 History of Communication and Comm 1100 Communication in Society that is open only to honors students. The first half of the course covers the history of human communication from the beginning of spoken and written communication to modern mediated and mass communication. The second half covers the various theoretical approaches to the study of communication.
Prereq: Honors standing. Not open to students with credit for 1101 (101) or 1100 (200). GE soc sci indivs and groups course.
2110 Principles of Effective Public Speaking
A course in critical thinking and public speaking; how to analyze and organize information for oral presentations; basics of public speaking for majors and non-majors.
2131 Business and Professional Speaking
Train students in public speaking and developing interpersonal skills for business and the professions.
2221 Media Writing and Editing
Designed to help students develop the fundamentals of news reporting, writing, and editing across news platforms.
Prereq: C- or higher in 1100 and 1101, English 1110.xx or equivalent, and enrollment in Comm or Journal, or enrollment in AgriComm major; or permission of instructor. Not open to students with credit for 421 or 422.
2223 Lantern Practicum
The practice of journalism as a member of the staff of the Lantern student newspaper and Web news site.
Prereq: 2221 (421 and 422), or permission of instructor. Repeatable to a maximum of 8 or 9 hrs.
2321 Writing for Strategic Communication
Introduction to, and instruction and practice in writing, reporting, and editing for the strategic communication industries.
Prereq: Enrollment in AgriComm, Comm, or Journal major; or permission of instructor.
2331 Strategic Communication Principles
The role of strategic communication in business, including basic principles of integrated marketing, theory, and ethical standards.
Prereq: Not open to students with credit for 431. GE soc sci indivs and groups course.
2367 Persuasive Communication
Principles of persuasion as reasoned discourse.
Prereq: Soph standing or above, and English 1110.01 or equiv. Not open to students with credit for 2367H (367H) or 367. GE writing and comm course: level 2.
2367H Persuasive Communication
Principles of persuasion as reasoned discourse.
Prereq: Honors standing, English 1110, and Soph standing. Not open to students with credit for Comm 2367. GE writing and comm course: level 2.
2511 Visual Communication Design
The examination of visual symbols, graphics, photographs, art, movies and video, and their impact on society.
Prereq: Enrollment in Comm, Journal or AgriComm major/minor. Not open to students with credit for 311.
2540 Introduction to Communication Technology
This course is designed as an introduction to major communication technologies. The course will consider a range of older media and contemporary new media, with a focus on societal, relational, and psychological effects.
Prereq: Not open to students with credit for 240.
3345 Strategic Media Planning U 3
Media planning for students interested in careers in advertising, public relations and other
forms of strategic communications.
Prereq: 2331 (431), and enrollment in Journ or Comm major, or permission of instructor. Not
open to students with credit for 545.
3402 Crime and the News Media U 3
Study of the nature of news coverage of crime and the criminal justice system, and the
implications for individuals, social groups, and society.
Prereq: Not open to students with credit for 502.
3403 Sports Journalism U 3
This hands-on, active-learning course will teach the practice of sports journalism, specifically
developing skills in writing, social media, multimedia, research and broadcasting.
3404 Media Law and Ethics U 3
This course will explore the theory, history, and ethical issues associated with free speech and
free press areas of the First Amendment. Students will analyze key legal and ethical issues
that affect journalism and media, with a focus on cases that have shaped media law and
theories that help journalism professionals make decisions.
Prereq: Not open to students with credit for 3404H.
3405 Introduction to Lantern TV U 3
This course will prepare students to work in television news. There will be a particular focus on
writing, editing, and shooting video. Students will apply knowledge by creating and presenting
news content. Students will leave this course ready for internships at television stations or
Internet news outlets.
Prereq: Theatre 3351, or permission of instructor.
3413 Media Entertainment U 3
Explores speculation, theory, and research regarding effects and appeal of media
entertainment, emphasizing emotional reactions.
Prereq: Not open to students with credit for 613.
3414 Sports Media Relations U 3
This hands-on, active-learning course will teach the theory and practice of sports media
relations, developing strategic communication skills including writing, social media, multimedia,
which will prepare students for sports media careers at the collegiate or professional sports levels.
3415 Sports, Mass Media & Society U 3
Sports communication is a growing area of study within the communication discipline, as
scholars recognize the increasingly important role media play in conveying and shaping sports
and society. This course will examine the intersection of sports, society, and the media, by
exploring historical and current issues in sports that shape our ideas, perspectives, and
assumptions about U.S.
3425 Media Management U 3
Introduction to media management with a focus on how issues of management apply to
various media.
Prereq: Not open to students with credit for 425.
3440 Mass Communication and Society U 3
This course is designed to promote an understanding of basic mass communication practice.
Prereq: Not open to students with credit for 642.
3442 Violence in Society and Violence in the Media U 3
Issues in the psychology of media presentations of violence.
Prereq: Not open to students with credit for 2442. GE soc sci indivs and groups course.
3444 Advertising and Society U 3
Examination of positive and negative contributions of advertising in the American mass media
system to society from political, sociological, and economic perspectives.
Prereq: Not open to students with credit for 644.
3450 Media and Citizenship U 3
This course provides an overview of media’s role in citizenship by learning about media
industry operations, how media influence us, critical evaluation of media, media responsibility
and literacy, and how our experiences and biases affect the current relationship between mass
media and democracy. We will learn how to engage with media to promote informed, active,
and responsible citizenship.
3466 Communication and Popular Culture U 3
Communication causes and impacts of changing technological environment where traditional
differences between cultural products, folk, mass, popular, low, elite, high, knowledge,
journalistic, and informational are disappearing.
3513 Video Games and Society U 3
A broad overview of the effects of video game play on society. Students critique the literature
on this topic and design their own study to test video game effects.
3545 Human-Computer Interaction & User Experience U 3
This course is an introduction to human-computer interaction (HCI) and user experience (UX).
The goal of this class is to help you learn how to design usable interactive technologies. We
will consider what constitutes good design, study a variety of ways to conceptualize design
problems, examine how users’ cognitive abilities and emotions influence design, and learn
about interfaces.
Feature Writing U 3
This hands-on, active-learning course will teach students how to identify, research, report and write non-fiction feature articles that combine fact-based journalistic writing with non-fiction writing techniques, including characters development, description and narrative arc.

Data Journalism in Enterprise Reporting U 4
A capstone experience devoted to enterprise journalism that springs from computer assisted reporting techniques and presented through the use of traditional print and multimedia journalism.
Prereq: 421 (421 and 422), and enrollment in Comm, Journal, or AgriComm major. Not open to students with credit for 621.

Science Communication U 3
Explores the structure, meanings and implications of "science communication" with an emphasis on how values, attitudes, social structure, and communication affect public perceptions of science and technology.
Prereq: Not open to students with credit for 4240H (649H), 3240H, or 640.

Public Communication Campaigns U 4
Application of management techniques to public relations; public relations strategy; campaign development.
Prereq: 2331 (431), and enrollment in Comm or Journal major; or permission of instructor. Not open to students with credit for 637.

Mass Communication and Youth U 3
Introduction to theories and research on the uses and effects of media on children and adolescents, including discussion of interventions.
Prereq: Not open to students with credit for 501.

Stereotypes in Media U 3
Expose students to the existence and impact of stereotypes in various forms of media.
Prereq: Not open to students with credit for 645.

User-Centered Communication Design U 3
Concepts and principles of user-centered design and application of skills to multimedia design.
Prereq: Comm 2511 (311), or Design 320, 570, 571, or 573, or permission of instructor. Not open to students with credit for 611.

Computer Interface and Human Identity U 3
Surveys computer phenomena such as artificial intelligence, agents, avatars, virtual worlds, and humanoid robots, and identities such as humanness, race, gender and sexuality.
Prereq: Not open to students with credit for 655.

Information Technology and Organizational Communication U 3
Focus on the role of various technologies within organizations and for work team members.
Prereq: Not open to students with credit for 656.

Communication Network Infrastructure U 3
Introduction to the concepts and principles that underlie contemporary telecommunication networks with the opportunity to apply these concepts to the analysis of novel systems.
Prereq: 2540 (240). Not open to students with credit for 657.

Social Media Analytics U 3
This course is an introduction to analyzing social media data. Students will learn how to operate an established analytics platform and complete a novel research project using real world social media data. Students will learn how to tackle industry and academic research problems using social media logs and metrics.
Prereq: 3160, 3163, or 3165.

Communication and Emotion U 3
Introduction to research about emotion in mediated communication. Applications in domains of students' choice (e.g. sports communication, entertainment, advertising, online communication, news, public affairs communication, etc.).

Communication Dynamics in Groups U 3
This class examines how communication dynamics affect group performance in organizations through topics such as: communication roles and norms, effective communication in teamwork and decision-making, leadership, group cohesion, managing conflict and using communication technologies.

Human Communication in Social Networks U 3
Communication creates a relationship between individuals in various ways, and the large set of these relationships form networks. In this class, our task will be to observe and understand the various ways in which communication may be directly observed or inferred and the consequences that such communication has for humans who are embedded in networks.

Health Communication in Interpersonal Contexts U 3
Study of communication relevant to health care in various face-to-face contexts.
Prereq: Not open to students with credit for 636.01.

Health Communication in Mass Mediated Contexts U 3
Overview of theory and research related to the role of mass media as they affect the public's health behavior.
Prereq: Not open to students with credit for 636.02.
Survey Research Practicum  G  3
Hands-on applications for students interested in the planning, implementation and analysis of a scientific sample survey.
Prereq: Admission to grad survey research, or permission of instructor. Not open to students with credit for 7789 or 789 in Econ, PoliSci, Stat, ADEEcon, AgrEduc, BusML, EduPL, Geog, Psych, PubHth, or PubAffs. Cross-listed in PoliSci, Econ, and Stat.

Statistical Applications in Communication II  G  3
Survey of research methods and practical experience in conducting a research project.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 790.

Narrative and Communication  G  3
Integrated reading and research in communication narrative.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 802.

Public Opinion and Communication  G  3
Discusses the central role of communication in the concept of public opinion. Reviews research on the influence of communication on public opinion direction and quality.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 813.

Mass Communication and the Individual  G  3
Survey of theory and research in mass communication dealing with psychological aspects of mass communication.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 840.

Mass Communication and the Social System  G  3
Survey of mass communication theory at the macro or sociological level. Seminar covers social theories shaping media content and theories of media influence or effects.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 841.

Communication Technology  G  3
Theory and research on the uses and effects of communication technology.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 850.

Human-Computer Interaction  G  3
This course is one of two seminars offered as part of the communication technology focus area of the School of Communication graduate program. The focus of this course is on experiences with technology, including technological adoption and use; affordances across digital platforms; usability; and elements of interface design and their psychological, interpersonal, social and cultural implications.

Media, Campaigns and Health  G  3
How mediated communication can influence human behavior and public policy in ways that can improve (or can negatively impact) human health and well-being.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 870.

Health Communication in Interpersonal Settings  G  3
Introduce students to the research and theories comprising contemporary literature in health communication in interpersonal settings.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 871.

Colloquium  G  1
Colloquium.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

Theory Construction  G  3
The formal principles of theory and model construction function as criteria for examining the strengths and weaknesses of communication research models.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 927.

Directed Research  G  1 - 3
Directed research.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 27 cr hrs or 9 completions. This course is graded S/U.

Thesis Research  G  1 - 12
Thesis research.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 12 cr hrs or 3 completions. This course is graded S/U.

Directed Reading  G  1 - 3
Directed reading.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

Special Topics in Communication Research Methods  G  3
In-depth study of particular methods in the field of communication.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 15 cr hrs.

Special Topics in Mass Communication  G  3
Advanced seminar on current research in mass communication.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 12 cr hrs.

Special Topics in Communication  G  3
Advanced seminar on current research cutting across sub-fields of communication.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 18 cr hrs.

1100 Exploring Agricultural Communication, Education, and Leadership  U  1
Basic understanding of global trends within agricultural communication, agricultural education, and community leadership, the diversity of career opportunities within the industry, planning for a career and opportunities for professional development.

2100.01 Foundations of Leadership I  U  1
This course focuses on the foundations of leadership. Topics include introductory leadership theories and concepts with a focus on personal development, leadership style, and self-discovery. This CCP course is offered as a part of an off-campus, community-embedded program in cooperation with the Department of Agricultural Communication, Education, and Leadership. Selection into an approved partner program with the Department of Agricultural Communication, Education, and Leadership (such as OSUE’s LOOK to Ohio) required for enrollment.

2100.02 Foundations of Leadership II  U  2
This course focuses on the foundations of leadership. Topics include introductory leadership theories and concepts with a focus on developing relationships with others. Topics include diversity, communication, and teamwork. This CCP course is offered as a part of an off-campus, community-embedded program in cooperation with the Department of Agricultural Communication, Education, and Leadership. Selection into an approved partner program with the Department of Agricultural Communication, Education, and Leadership (such as OSUE’s LOOK to Ohio) required for enrollment.

2189 Early Experience in Community and Extension Education  U  1
The early experience program is designed to help students explore careers and gain experience in Community and Extension Education.
Prereq: Permission of instructor. Not open to students with credit for AEE 280.

2193 Individual Studies  U  1 - 3
Planning, conducting, and reporting a special study appropriate to the needs of the student.
Prereq: CPHR 2.50 or above, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 3 completions. This course is progress graded (S/U).

2194 Group Studies  U  1 - 5
Group studies for students in specialized programs. Repeatable to a maximum of 10 cr hrs or 5 completions.

2530 Introduction to Agricultural Communication, Education, and Leadership  U  2
Creating an awareness and understanding of the agricultural communication, education and leadership profession. The class will provide a basis for educating, communicating, and leading by synthesizing theoretical knowledge with practical application.
Prereq: Not open to students with credit for AEE 230 or AgrComm 200.

2530E Introduction to Agricultural Communication, Education, and Leadership  U  2
Creating an awareness and understanding of the agricultural communication, education and leadership profession. The class will provide a basis for educating, communicating, and leading by synthesizing theoretical knowledge and practical application.
Prereq: Honors standing.

3330 Program Development and Evaluation  U  3
Introductory skills necessary to develop, deliver, and evaluate educational programs. Students will examine the principles, methods, and models of program development and evaluation.

3530 Foundations of Personal and Professional Leadership  U  3
Leadership theories, principles, and concepts. Research-based theories, methods of social scientific inquiry, individual strengths, personal leadership philosophy and vision, concepts of diversity and ethics, and professional development plan.
Prereq: Not open to students with credit for AEE 342.

3530E Foundations of Personal and Professional Leadership  U  3
Leadership theories, principles, and concepts. Research-based theories, methods of social scientific inquiry, individual strengths, personal leadership philosophy and vision, concepts of diversity and ethics, and professional development plan.
Prereq: Honors standing. Not open to students with credit for AEE 342.

3555 Toward Cultural Proficiency  U  3
Leader effectiveness in multicultural, multiracial learning environments. Strategies for obtaining insight into learners from varied cultures. Theory will connect practice through service-learning using cognitive, affective and psychomotor domains.
Prereq: Not open to students with credit for AEE 594. GE cultures and ideas and diversity soc div in the US course.
### 102 Community Leadership

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>3537</td>
<td>Data Analysis in the Applied Sciences</td>
<td>U</td>
<td>3</td>
<td>The purpose of this course is to develop an overview and basic understanding of descriptive and inferential statistics. Prereq: Math 1130 (130) or 1148 (148). Not open to students with credit for AEE 387. GE data any course. MA Adminis Cond course.</td>
</tr>
<tr>
<td>4191</td>
<td>Internship in Community Leadership</td>
<td>U</td>
<td>1 - 2</td>
<td>Provides students in the Community Leadership program with an experiential learning opportunity to practice and apply knowledge and skills learned in an authentic setting. Open to Community Leadership Majors with a Leadership Specialization. Prereq: Enrollment in CommLdr major with Leadership Specialization, and permission of instructor. Not open to students with credit for AEE 489. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>4194</td>
<td>Group Studies in Community Leadership</td>
<td>U</td>
<td>1 - 3</td>
<td>Specialized topics in leadership or community and extension education. Repeatable to a maximum of 10 cr hrs or 5 completions.</td>
</tr>
<tr>
<td>4430</td>
<td>Leadership in Teams and Community Organizations</td>
<td>U</td>
<td>3</td>
<td>Principles and strategies involved in leading teams and community organizations. Students will examine leadership dynamics in small groups and reflect on applications in various settings. Team service project with student or community organization. Prereq: Not open to students with credit for AEE 442.</td>
</tr>
<tr>
<td>4480</td>
<td>Capstone in Leadership</td>
<td>U</td>
<td>3 - 4</td>
<td>Application of leadership theories, principles, concepts, and skills in a setting aligned with the student's academic and/or career interests. Students will plan, conduct, reflect, and report the project in conjunction with a faculty supervisor. Prereq: Permission of instructor. This course is graded S/U.</td>
</tr>
<tr>
<td>4550</td>
<td>Senior Transition from College</td>
<td>U</td>
<td>3</td>
<td>Designed to serve as a &quot;transition&quot; course for seniors at The Ohio State University, preparing them for their first professional position. Students will synthesize their knowledge and skills developed while at OSU and learn how transition those talents into practical application. Prereq: Sr standing.</td>
</tr>
<tr>
<td>4998</td>
<td>Undergraduate Research</td>
<td>U</td>
<td>1 - 10</td>
<td>Conducting and reporting an undergraduate research project. Prereq: Permission of instructor. This course is graded S/U.</td>
</tr>
<tr>
<td>4999</td>
<td>Research with Distinction</td>
<td>U</td>
<td>1 - 6</td>
<td>Conducting and reporting research with distinction. Students are expected to present at the CFAES Undergraduate Research Forum and the Denman Undergraduate Research Forum. Prereq: GPA 3.0 or above, and GPA 3.0 or above in major, and permission of project supervisor. Not open to students with credit for 683H. Repeatable to a maximum of 6 cr hrs or 3 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>4999H</td>
<td>Research with Distinction - Honors</td>
<td>U</td>
<td>1 - 6</td>
<td>Conducting and reporting research with distinction. Students are expected to present at the CFAES Undergraduate Research Forum and the University's Denman Undergraduate Research Forum. Prereq: Honors standing, and FAES 4590.01H (S90.01H), and CPHR 3.4 or above, and GPA 3.4 or above in major, and permission of honors project supervisor. Repeatable to a maximum of 6 cr hrs or 3 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>5000</td>
<td>Leadership for Community Change</td>
<td>U</td>
<td>3</td>
<td>Leading change in a community setting is important to addressing complex, adaptive community challenges. This course will teach students how to work with a community (of place, interest, etc.) through the difficult process of change by engaging them in leadership development. This course is meant to serve as an advanced course for students learning about leadership. Prereq: ENR 3500, or permission of instructor.</td>
</tr>
<tr>
<td>5193</td>
<td>Individual Studies in Community Leadership</td>
<td>U</td>
<td>1 - 3</td>
<td>Planning, conducting and reporting a special study appropriate to the needs of the student. Prereq: CPHR 2.50 or above, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 3 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>5194</td>
<td>Group Studies in Community Leadership</td>
<td>U</td>
<td>1 - 3</td>
<td>Group studies for student in specialized programs. Repeatable to a maximum of 10 cr hrs or 5 completions.</td>
</tr>
<tr>
<td>5330</td>
<td>Methods of Teaching in Nonformal Learning</td>
<td>U</td>
<td>3</td>
<td>Examining the teaching and learning process with emphasis on planning and delivering agricultural instruction for agribusiness, extension, and non-formal learning environments.</td>
</tr>
<tr>
<td>5335</td>
<td>Volunteer and Human Resource Management</td>
<td>U</td>
<td>3</td>
<td>Introductory skills in volunteer and human resource management for working in educational and non-profit organizations with paid and unpaid staff. Examination of principles, methods, and models and application with case studies. Prereq: Not open to students with credit for AEE 795.02.</td>
</tr>
<tr>
<td>5350</td>
<td>Youth Organizations and Program Management</td>
<td>U</td>
<td>4</td>
<td>Introduction to and analysis of youth organizations and youth program management. Theories, principles, and key concepts important for assuming leadership roles in contemporary youth organizations. Prereq: Not open to students with credit for both AEE 642 and 643.</td>
</tr>
<tr>
<td>5380</td>
<td>Internship in Community and Extension Education</td>
<td>U</td>
<td>4</td>
<td>Under the supervision of a Departmental faculty instructor and daily leadership of an experienced Extension educator at the county level, students will enhance their professional and technical competencies in Extension education. Concur: 5381 and 5382.</td>
</tr>
<tr>
<td>5381</td>
<td>Capstone in Community and Extension Education</td>
<td>U</td>
<td>4</td>
<td>The capstone brings together a student's theory and programmatic work during their undergraduate career and applies it to a cohesive pattern that related to applied professional Extension work settings. Concur: 5380 and 5382.</td>
</tr>
<tr>
<td>5382</td>
<td>Issues in Community and Extension Education</td>
<td>U</td>
<td>4</td>
<td>Explore past, current, and potential trends and issues related to Extension programming and apply them to professional settings. Students will learn about contemporary issues and how to use futuring and strategic planning tools to address the issues. Concur: 5380 and 5381.</td>
</tr>
<tr>
<td>5430</td>
<td>Professional Leadership Ethics</td>
<td>U</td>
<td>3</td>
<td>This course is designed to prepare students to meet the ethical challenges facing employees and other members of education, nonprofit organizations and business. The class will address moral issues at every organizational level - personal, interpersonal, group and system wide.</td>
</tr>
</tbody>
</table>

### Comparative Studies

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1100</td>
<td>Intro to the Humanities: Cross-Cultural Perspectives</td>
<td>U</td>
<td>3</td>
<td>Explores the role of literature and the arts in constructing, maintaining, and questioning the values and beliefs of diverse cultures and historical periods; topics vary. Prereq: Not open to students with credit for 1100H. GE It and diversity global studies course.</td>
</tr>
<tr>
<td>1100H</td>
<td>Intro to the Humanities: Cross-Cultural Perspectives</td>
<td>U</td>
<td>3</td>
<td>Explores the role of literature and the arts in constructing, maintaining, and questioning the values and beliefs of diverse cultures and historical periods; topics vary. Prereq: Honors standing. Not open to students with credit for 1100 (100H, 100). GE It and diversity global studies course.</td>
</tr>
<tr>
<td>2099</td>
<td>The Question of Comparative Studies</td>
<td>U</td>
<td>1</td>
<td>This course offers an introduction to the Comparative Studies major. It is designed to help students to take advantage of curricular, research, and advising opportunities, to manage the particular challenges of independent and interdisciplinary work; to link classroom work to social and political engagement with relevant communities; and to prepare for life after graduation. This course is graded S/U.</td>
</tr>
<tr>
<td>2101</td>
<td>Literature and Society</td>
<td>U</td>
<td>3</td>
<td>Study of relationships among politics, society, and literature; analysis of social and political elements of literature and film from diverse cultures and historical periods. Prereq: English 1110 (110) or equiv. Not open to students with credit for 2101H (201H, 201). GE It and diversity global studies course.</td>
</tr>
<tr>
<td>2101H</td>
<td>Literature and Society</td>
<td>U</td>
<td>3</td>
<td>Study of relationships among politics, society, and literature; analysis of social and political elements of literature and film from diverse cultures and historical periods. Prereq: Honors standing, and English 1110 (110) or equiv. Not open to students with credit for 2101 (201, 201H). GE It and diversity global studies.</td>
</tr>
<tr>
<td>2103</td>
<td>Literature and the Self</td>
<td>U</td>
<td>3</td>
<td>Study of relationships between psychology and literature; analysis of psychological concepts and processes as represented in literature and film of diverse cultures and historical periods. Prereq: English 1110 (110) or equiv. Not open to students with credit for 2103H (203H) or 203. GE It and diversity global studies course.</td>
</tr>
<tr>
<td>2104</td>
<td>Literature, Science, and Technology</td>
<td>U</td>
<td>3</td>
<td>Study of relationships among literature, science, and technology; analysis of representations of science and technology in literature and film of diverse cultures and historical periods. Prereq: English 1110 or equiv. Not open to students with credit for 2104H. GE It and diversity global studies course.</td>
</tr>
<tr>
<td>2104H</td>
<td>Literature, Science, and Technology</td>
<td>U</td>
<td>3</td>
<td>Study of relationships among literature, science, and technology; analysis of representations of science and technology in literature and film of diverse cultures and historical periods. Prereq: Honors standing, and English 1110 or equiv. Not open to students with credit for 2104H. GE It and diversity global studies course.</td>
</tr>
<tr>
<td>2105</td>
<td>Literature and Ethnicity</td>
<td>U</td>
<td>3</td>
<td>Study of relationships between literature and ethnicity; analysis of concepts of ethnicity as represented in literature and film of diverse cultures and historical periods. Prereq: English 1110 (110) or equiv. Not open to students with credit for 205. GE It and diversity soc div in the US course.</td>
</tr>
</tbody>
</table>
2193 Individual Studies U 1 - 3
Designed to give students an opportunity for personal study with a member of the faculty. Repeatable to a maximum of 6 or hrs or 6 completions. This course is graded SU.

2194 Group Studies U 1 - 3
Designed to give groups of students an opportunity to pursue special studies not otherwise offered. Repeatable to a maximum of 6 or hrs or 6 completions. This course is graded SU.

2194H Group Studies U 1 - 3
Designed to give groups of students an opportunity to pursue special studies not otherwise offered.
Prereq: Honors standing or permission of instructor. Repeatable to a maximum of 6 or hrs or 6 completions. This course is graded SU.

2214 Introduction to Sexuality Studies U 3
Provides an introduction to sexuality studies through an interdisciplinary approach. To apply the knowledge learned, this course requires a fieldwork component.
Prereq: Not open to students with credit for 214, Edu/PAES 214, or SistySt 2214. GE diversity soc div in the US course. Cross-listed in SisySt.

2220 Introduction to South Asia Studies U 3
A multi-disciplinary introduction to South Asia's geographical, political, cultural, and religious contexts and connections.
Prereq: English 1110 or equiv. Not open to students with credit for NELC 2220 or SAsia 2220. Cross-listed in SAsia. GE cultures and ideas and diversity global studies course.

2264 Introduction to Popular Culture Studies U 3
Introduction to the analysis of popular culture texts, with special emphasis on the relationship between popular culture studies and literary studies.
Prereq: English 1110 (110) or equiv. Not open to students with credit for 264, or English 2264 (264). Cross-listed in English. GE cultures and ideas course.

2281 American Icons U 3
Interdisciplinary methods in American studies; emphasis on the plurality of identities in American culture.
Prereq: English 1110 (110) or equiv. Not open to students with credit for 234. GE cultures and ideas and diversity soc div in the US course.

2301 Introduction to World Literature U 3
Analysis of oral and written literatures of diverse cultures and historical periods.
Prereq: English 1110, or equiv. GE lit and diversity global studies course.

2321 Introduction to Asian American Studies U 3
Introduction to Asian American studies; history, experiences, and cultural production of Americans of Chinese, Japanese, Korean, South Asian, Filipino, and Southeast Asian ancestry.
Prereq: English 1110 (110), or equiv. Not open to students with credit for 241. GE cultures and ideas course and diversity soc div in the US course.

2322 Introduction to Latino Studies U 3
Introduction to Latino studies; history, politics, and cultural production of Latino/a communities in the U.S. and its borderlands.
Prereq: English 1110 (110) or equiv. Not open to students with credit for 242, or Spanish 2242. GE cultures and ideas and diversity soc div in the US course. Cross-listed in Spanish 2242.

2323 Introduction to American Indian Studies U 3
Explores the legal, cultural, historic, and political foundations, experiences, and perspectives and futures of American Indians in the U.S.
Prereq: English 1110 or equiv. GE cultures and ideas and diversity soc div in the US course.

2340 Introduction to Cultures of Science and Technology U 3
Critical analysis of the multiple relations of science to society, with emphasis on knowledge, power, authority, values, and ethics.
Prereq: English 1110 (110), or equiv. Not open to students with credit for 2341 (272). GE cultures and ideas and diversity global studies course.

2341 Technology, Science, and Society U 3
Critical analysis of the relations among science, technology, and culture, with particular emphasis on ethical issues in technology and engineering.
Prereq: English 1110.01 (110.01) or equiv. Not open to students with credit for 2340 (272). GE cultures and ideas and diversity global studies course.

2350 Introduction to Folklore U 3
A general study of the field of folklore including basic approaches and a survey of primary folk materials: folktales, legends, folkongs, ballads, and folk beliefs.
Prereq: English 1110 (110) or equiv. Not open to students with credit for English 2270 (270), or 2350H. GE cultures and ideas course. Cross-listed in English 2270H.

2350H Introduction to Folklore U 3
A general study of the field of folklore including basic approaches and a survey of primary folk materials: folktales, legends, folkongs, ballads, and folk beliefs.
Prereq: Honors standing, and English 1110 (110) or equiv. Not open to students with credit for 2350, English 2270 (270), or 2270H. GE cultures and ideas course. Cross-listed in English 2270H.

2360 Introduction to Comparative Cultural Studies U 3
Introduction to interdisciplinary field of cultural studies; emphasis on relation of cultural production to power, knowledge, and authority, globally and locally.
Prereq: English 1110 (110) or equiv. Not open to students with credit for 274. GE cultures and ideas course.

2367.02 U.S. Latino Identity U 3
Latina/o identity in the U.S.: emphasis on Latina/o cultural history and expression and on role of race, class, gender, and sexuality in identity construction.
Prereq: English 1110 (110) or equiv, and Soph standing. Not open to students with credit for 367.04. GE writing and comm: level 2 and diversity soc div in the US course.

2367.04 Science and Technology in American Culture U 3
Role of science and technology in contemporary American society; their relationship to human values; sources of concern about their impact; evaluation of selected issues.
Prereq: English 1110 (110), or equiv, and Soph standing. Not open to students with credit for 2367.04H (367.02H) or 367.02. GE writing and comm: level 2 and cultures and ideas and diversity soc div in the US course.

2367.07 Religious Diversity in America U 3
Exploration of the concept of religious freedom and the position of minority religious groups in American society.
Prereq: English 1110 (110) or equiv and Soph standing. Not open to students with credit for 367.03. GE writing and comm: level 2 and cultures and ideas and diversity soc div in the US course.

2367.08 American Identity in the World U 3
American culture viewed from inside and from the perspective of foreign cultures, as seen in literature, film, art, music, journalism, folklore, and popular culture.
Prereq: English 1110, or equiv, and Soph standing. Not open to students with credit for 2367.08H. GE writing and comm: level 2 and cultures and ideas and diversity soc div in the US course.

2420 American Food Cultures U 3
Historical perspective on the development of the American food system, including associated discourses and cultures, leading to an exploration of contemporary concerns about industrial food, the American diet, and the politics surrounding these issues.
GE cultures and ideas and diversity soc div in the US course.

2797 Introductory Study at a Foreign Institution U 1 - 30
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.
Prereq: Permission of Department. Repeatable to a maximum of 30 or hrs.

2864H Modernity and Postmodernity: Issues and Ideas U 3
Examination of some of the defining ideas of modern thought and how those ideas have problematically affected modern life in both developed and developing countries.

3302 Translating Literatures and Cultures U 3
Introduction to issues and problems inherent to translating literatures and cultures.
Prereq: English 1110 (110), or equiv. Not open to students with credit for 3302E (373E) or 373. GE cultures and ideas and diversity global studies course.

3302E Translating Literatures and Cultures U 3
Introduction to issues and problems inherent to translating literatures and cultures.
Prereq: Honors standing, and English 1110 (110), or equiv. Not open to students with credit for 3302 (373) or 373E. GE cultures and ideas and diversity global studies course.

3360 Introduction to Globalization and Culture U 3
History and contemporary dimensions of globalization, focusing on period preceding European hegemony, era of European colonialism, period of decolonization, and contemporary contexts.
Preeq: Soph standing, or permission of instructor. Not open to students with credit for 357.

3501 Humanitarianism in Question U 3
This course addresses questions related to the history, practices, institutional dimensions, impact, criticism, and function of humanitarian and philanthropic work. Students learn about relationships between donors and targeted communities, both domestically and abroad. Discussions reflect upon reasons for giving, the goals of the supported initiatives, and mechanisms for evaluating success.
Repeatable to a maximum of 6 or hrs. GE cultures and ideas course.

3603 Love in World Literature U 3
Representations of love in world literature; emphasis on mythological, psychological, and ideological aspects of selected representations in different cultures and time periods.
Prereq: English 1110 (110), or equiv. Not open to students with credit for 3603H (301H) or 301. GE lit and diversity global studies course.
### Comparative Studies

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
<th>Prerequisites</th>
<th>Co-requisites</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3606</td>
<td>The Quest in World Literature</td>
<td>Motif of the quest in world literature; physical and mental journeys as metaphors of personal transformation and salvation.</td>
<td>English 1110 (110) or equiv. Not open to students with credit for 3606. GE lit and diversity global studies course.</td>
<td>GE VPA and diversity global studies course.</td>
<td>U 3</td>
</tr>
<tr>
<td>3607</td>
<td>Film and Literature as Narrative Art</td>
<td>Relationships between film and literature; emergence of cinematic art as a form of representation with emphasis on diverse cultural traditions.</td>
<td>English 1110 (110) or equiv. Not open to students with credit for 3607(358H, 358).</td>
<td>GE VPA and diversity global studies course.</td>
<td>U 3</td>
</tr>
<tr>
<td>3608</td>
<td>Representations of the Experience of War</td>
<td>Representations of war in works of literature, religious texts, and film from diverse cultures and time periods.</td>
<td>English 1110 (110) or equiv. Not open to students with credit for 3608. GE lit and diversity global studies course.</td>
<td>U 3</td>
<td></td>
</tr>
<tr>
<td>3620</td>
<td>Everyday Life in South Asia</td>
<td>An examination of everyday life as experienced by members of the culturally diverse population of South Asia.</td>
<td>English 1110 or equiv. Not open to students with credit for NELC 3620 or SAsia 3620.</td>
<td>Cross-listed in SAsia.</td>
<td>U 3</td>
</tr>
<tr>
<td>3645</td>
<td>Cultures of Medicine</td>
<td>Humanistic, scientific, and clinical perspectives on medical issues; literary uses of medical themes; medicine as art and science.</td>
<td>English 1110 (110) or equiv. Not open to students with credit for 3645H (305).</td>
<td>GE cultures and diversity global studies course.</td>
<td>U 3</td>
</tr>
<tr>
<td>3645H</td>
<td>Cultures of Medicine</td>
<td>Humanistic, scientific, and clinical perspectives on medical issues; literary uses of medical themes; medicine as art and science.</td>
<td>Honors standing, and English 1110 (110) or equiv. Not open to students with credit for 3645H (305).</td>
<td>GE cultures and diversity global studies course.</td>
<td>U 3</td>
</tr>
<tr>
<td>3646</td>
<td>Cultures, Nature, Technologies</td>
<td>Cultural perspectives on issues related to technology, nature, and culture; examines cultural approaches to uses of technology and their relation to natural and human worlds.</td>
<td>English 1110 (110), or equiv. GE cultures and ideas course.</td>
<td>U 3</td>
<td></td>
</tr>
<tr>
<td>3661</td>
<td>The City and Culture</td>
<td>Introduction to the comparative and cross-cultural study of cities, urban culture, and urbanism.</td>
<td>One course in CompStd or IntStdS, or permission of instructor. Not open to students with credit for 4661 (531) or IntStdS 4661 (531) or IntStdS 3681.</td>
<td>Cross-listed in IntStdS.</td>
<td>U 3</td>
</tr>
<tr>
<td>3686</td>
<td>Cultural Studies of American Musics</td>
<td>Investigation of the social, political, and cultural contexts of the development of popular musics in the U.S.</td>
<td>English 1110 or equiv. GE VPA and diversity sect in the US course.</td>
<td>U 3</td>
<td></td>
</tr>
<tr>
<td>3692</td>
<td>Comparative Social Movements</td>
<td>Comparative and interdisciplinary analysis of social movements and theories about social movement in various global contexts.</td>
<td>GE cultures and ideas and diversity global studies course.</td>
<td>U 3</td>
<td></td>
</tr>
<tr>
<td>3797</td>
<td>Topical Study at Foreign Institution</td>
<td>An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.</td>
<td>Permission of Department. Repeatable to a maximum of 30 ch hrs.</td>
<td></td>
<td>U 1 - 30</td>
</tr>
<tr>
<td>3798</td>
<td>Japanese Popular Culture</td>
<td>This course takes up Japanese popular culture in order to get at big questions about nationalism and cosmopolitanism, appropriation and authenticity, and being human in a world of commodities. This is an intensive summer course: two weeks in Columbus and two weeks in Japan, where we will be based in Tsukuba and make trips to Tokyo, Kyoto, Osaka, and Uji. Knowledge of Japanese is not required.</td>
<td>English 1110. GE diversity global studies and education abroad course.</td>
<td></td>
<td>U 3</td>
</tr>
<tr>
<td>3808</td>
<td>Utopia and Dystopia</td>
<td>Exploration and critique of utopian thinking in different historical and cultural contexts.</td>
<td>English 1110 (110) or equiv. Not open to students with credit for 4808 (508).</td>
<td></td>
<td>U 3</td>
</tr>
<tr>
<td>3903</td>
<td>World Literature: Theory and Practice</td>
<td>Discussion of world literatures in theoretical, historical, and cultural contexts, with particular attention to translation, language, nationalism, globalization, and internationalism.</td>
<td>English 2301 (273), 3302 (373), or 3302E (373E). Not open to students with credit for 4903 (573), 4903E (573E), or 4903E.</td>
<td>U 3</td>
<td></td>
</tr>
<tr>
<td>3990</td>
<td>Approaches to Comparative Studies</td>
<td>Introduces comparative studies majors to theoretical tools, methods of investigation, and key concepts.</td>
<td>English 1110 (110) or equiv. CompStd major, or permission of instructor. Not open to students with credit for 398.</td>
<td>U 3</td>
<td></td>
</tr>
<tr>
<td>4191</td>
<td>Research Internship in Comparative Studies</td>
<td>Intensive research experience in Comparative Studies; individualized research training; students collaborate closely with faculty member on research project; projects either student-initiated or faculty research.</td>
<td>English 1110 (110) or equiv. Repeatable to a maximum of 6 cr hrs or 6 completions.</td>
<td>This course is graded S/U.</td>
<td>U 1 - 3</td>
</tr>
<tr>
<td>4193</td>
<td>Individual Studies</td>
<td>Designed to give students an opportunity for personal study with a member of the faculty.</td>
<td>Permission of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions.</td>
<td>This course is graded S/U.</td>
<td>U 1 - 3</td>
</tr>
<tr>
<td>4597.01</td>
<td>Global Studies of Science and Technology</td>
<td>Explores relations among culture, science, and technology in changing global contexts. Previous completion of 2307 (302) or 367 (302) recommended.</td>
<td>Completion of a Second Writing course and Natural Science sequence, or permission of instructor. Not open to students with credit for 597.01.</td>
<td>GE diversity global studies and cross-disciplinary seminar course.</td>
<td>U 3</td>
</tr>
<tr>
<td>4597.02</td>
<td>Global Culture</td>
<td>Examines contemporary global cultural flows, the concepts useful in analyzing them, and the questions they raise about power and cultural change.</td>
<td>Permission of Instructor. Not open to students with credit for 597.02.</td>
<td>GE diversity global studies and cross-disciplinary seminar course.</td>
<td>U 3</td>
</tr>
<tr>
<td>4597.03</td>
<td>Global Folklore</td>
<td>Examines contemporary folklore around the world; introduces students to key concepts in folklore scholarship; focuses on transmission and transformation of cultural knowledge and practice, particularly in situations of conflict or upheaval.</td>
<td>Completion of a Second Writing course. Not open to students with credit for 597.02.</td>
<td>GE diversity global studies and cross-disciplinary seminar course.</td>
<td>U 3</td>
</tr>
<tr>
<td>4685</td>
<td>Comparative Ethnic and American Studies</td>
<td>Examines relationships between interdisciplinary fields of American Studies and Ethnic Studies.</td>
<td></td>
<td></td>
<td>U 3</td>
</tr>
<tr>
<td>4803</td>
<td>Studies in Asian American Literature and Culture</td>
<td>Focused study of a topic in Asian American literary and cultural studies.</td>
<td>English 1110 (110), or equiv. Not open to students with 10 qtr cr hrs in 543 or English 587 or with 6 sem cr hrs in English 4587. Repeatable to a maximum of 6 cr hrs.</td>
<td>Cross-listed in English 4587.</td>
<td>U 3</td>
</tr>
<tr>
<td>4804</td>
<td>Studies in Latino Literature and Culture</td>
<td>Focused study of a topic in Latino/a literary and cultural studies.</td>
<td>English 1110 (110), or equiv. Not open to students with 10 qtr cr hrs in 543 or English 588 or 6 sem cr hrs in English 4588. Repeatable to a maximum of 6 cr hrs.</td>
<td>Cross-listed in English 4588.</td>
<td>U 3</td>
</tr>
<tr>
<td>4822</td>
<td>Native American Identity</td>
<td>Historical and contemporary issues of American Indian identity, primarily in U.S.; focus on American Indian authors, artists, and scholars.</td>
<td>English 1110 (110) or equiv. Not open to students with credit for 542.</td>
<td>GE cultures and ideas and diversity sect in the US course.</td>
<td>U 3</td>
</tr>
<tr>
<td>4845</td>
<td>Gender, Sexuality, and Science</td>
<td>Examination of relations between gender and science; topics include gendering of &quot;science&quot; and &quot;nature,&quot; biological theories of sexual inequality, feminist critiques of science and technology.</td>
<td>One course in CompStd or WGSSt, or Grad standing, or permission of instructor. Not open to students with credit for 535 or WGSST 4845 (535). Cross-listed with WGSST.</td>
<td></td>
<td>U 3</td>
</tr>
<tr>
<td>4921</td>
<td>Intersections: Approaches to Race, Gender, Class, and Sexuality</td>
<td>Examines intersections of race, gender, class, and sexuality in various sites within American culture (e.g., legal system, civil rights discourse, social justice movements).</td>
<td>CompStd and Sr standing; or permission of instructor. Not open to students with credit for 545, 545AAM 4921 (545), or WGSST 4921 (545). Cross-listed in areas in WGSST and AAMAS.</td>
<td></td>
<td>U 3</td>
</tr>
<tr>
<td>4990</td>
<td>Senior Seminar in Comparative Studies</td>
<td>Writing seminar based on students' independent research.</td>
<td>English 3909 (398), and 500 or a 4000 level course in CompStd, and Sr standing; or permission of instructor. Not open to students with credit for 508.</td>
<td></td>
<td>U 3</td>
</tr>
<tr>
<td>4998</td>
<td>Undergraduate Research in Comparative Studies</td>
<td>Undergraduate research in variable topics; independent study.</td>
<td>Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions.</td>
<td>This course is graded S/U.</td>
<td>U 1 - 9</td>
</tr>
<tr>
<td>4998H</td>
<td>Honors Undergraduate Research in Comparative Studies</td>
<td>Undergraduate research in variable topics; independent study.</td>
<td>Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions.</td>
<td>This course is graded S/U.</td>
<td>U 1 - 9</td>
</tr>
<tr>
<td>4999</td>
<td>Undergraduate Thesis</td>
<td>Independent study for 4-year students wishing to complete a senior thesis.</td>
<td>Sr standing, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 2 completions.</td>
<td>This course is graded S/U.</td>
<td>U 1 - 6</td>
</tr>
</tbody>
</table>
Comparative Studies  105

6300  Critical Foundations: Cultural and Social Theory  G  3
This course offers an introduction to comparative cultural studies and social theory. It introduces students to a wide range of well-known thinkers, critical movements, and widely cited texts. Attention will be paid to the ways in which these thinkers, movements, and texts are situated within disciplinary and inter-disciplinary contexts.

6390  Approaches to Comparative Cultural Studies I  G  3
Introduces students to theoretical tools, methods of investigation, and key concepts integral to research in comparative studies.

6391  Approaches to Comparative Cultural Studies II  G  3
Continuation of 6390. Discussion of theoretical tools, methods of investigation, and key concepts integral to research in comparative studies.

6400  Critical Foundations: The Humanities and Collaborative Practices  G  3
The course introduces students to different forms of collaborative practices and participatory research in the humanities, recognizing the opportunities and possibilities it affords, as well as the challenges and limitations it entails. The course will also offer a space for critical reflection on how we engage other people's ideas, both in terms of our research and within the seminar community.

6425  Introduction to Latino Studies  G  4
Introduces graduate students to the broad themes, concepts, and questions raised in the interdisciplinary field of Latina/Latino studies.

6500  Teaching Seminar in Interdisciplinary Studies  G  3
The seminar will also teach students to develop strategies to support students in questioning and challenging normative discourses while also developing teaching practices that problematize social reality and knowledge. The course topics focus on three areas: course content, methods of delivery, and issues related to in-class "comportment."

6750.01  Introduction to Graduate Study in Folklore I: The Philology of the Vernacular  G  3
Introduction to the canonical folklore genres and the history of folklore as a discipline. Why and how should we study the vernacular?

6750.02  Introduction to Graduate Study in Folklore II: Fieldwork and Ethnography of Communication  G  3
Introduction to fieldwork and ethnographic writing in the humanities - interviewing, participant observation, and research ethics. Focus on the ethnography of communication and community representations.

7193  Individual Studies  G  1 - 9
Designed to give able students an opportunity to pursue special studies not otherwise offered.

7201  Theorizing Race and Ethnicity  G  3
Advanced introduction to critical race theory; critical analysis of concepts of law in relation to race and ethnicity.

7349  Theorizing Science and Technology  G  3
Introduction to comparative and cultural studies of science and technology.

7350.01  Theorizing Folklore I: Tradition and Transmission  G  3
The transmission of cultural forms through time and space across social networks, with special attention to the dynamics of conservation and innovation, reflexivity and habit.

7350.02  Theorizing Folklore II: Ethnography of Performance  G  3
Performance as a heightened mode of communication characteristic of vernacular cultural processes, studied in the context of ongoing social interaction.

7391  Comparative Studies Field School  U  G  3
Introduction to ethnographic field methods (participant-observation, writing field notes, photography, interviewing), archiving, and public humanities. An introduction to fieldwork is followed by a field experience (where students will reside together in local housing) followed by accessioning, exhibition planning, and reflection. Maximum credit hours include those for English 5169S.

5189S  Comparative Studies Field School  U  G  3
Introduction to anthropographic field methods (participant-observation, writing field notes, photography, interviewing), archiving, and public humanities. An introduction to fieldwork is followed by a field experience (where students will reside together in local housing) followed by accessioning, exhibition planning, and reflection. Maximum credit hours include those for English 5169S.

5194  Group Studies  U  G  1 - 3
Special topics. Open to both undergraduates and graduate students. Repeatable to a maximum of 9 or 12 hrs.

5197  Study at a Foreign Institution  U  G  1 - 30
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

5957.01  Comparative Folklore  U  G  3
Comparative study of folklore. Topics vary, e.g., folklore and gender politics; theories of myth, folklore, memory, and history.

5957.02  Folklore in Circulation  U  G  3
Study of transmission of culture. Topics vary, e.g., tourists, travelers, tricksters; cultures of waste and recycling; orality and literacy.

5980  Ancient and Modern Narrative: Cognition, Affect, Ethics, Belief  U  G  3
This course will juxtapose narratives from an ancient culture with narratives from a modern culture to explore the hypothesis that the power of narrative arises from its capacity to affect the lives of audiences by engaging the cognitive, affect, ethics, and beliefs. Team-taught w/ faculty in English.

6100  Critical Foundations: Comparative Analysis  G  3
This course prepares students to begin to approach their research interests and questions from a comparative perspective. The function of comparison is not to discover differences and similarities, but to understand more comprehensively the political, social, economic, and aesthetic dimensions of the various discourses and practices that constitute social and individual life.

6200  Critical Foundations: Interdisciplinarity & Methods  G  3
This course introduces interdisciplinarity as an approach to knowledge production that is problem and question driven and that therefore draws from varied approaches and methodologies. It considers a range of tools that scholars across humanities and social sciences disciplines use to critically analyze the pressing global issues.
106 Comparative Studies

7350.03 Theorizing Folklore III: Differentiation, Identification, and The Folk
Cultural form as social marker. "Folklore" and other metacultural concepts in the history of modernity.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 792 or English 870. Cross-listed in English.

7360 Theorizing Culture
The concept of culture as it has developed over time; emphasis on tension between descriptive and normative approaches.
Prereq: Grad standing or permission of instructor. Not open to students with credit for 716.

7370 Theorizing Religion
Relationships between religion and other domains in a cross-cultural, comparative framework with attention to theoretical models and particular texts and traditions.
Prereq: Grad standing or permission of instructor. Not open to students with credit for 725.

7380 Theorizing America
Interdisciplinary study of culture, identity, and representation in the U.S.
Prereq: Grad standing or permission of instructor. Not open to students with credit for 715.

7888 Interdepartmental Studies in the Humanities
Two or more departments present colloquia on subjects of mutual interest; topics to be announced.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 15 cr hrs or 10 completions. Cross-listed in German 7888, English 7888.01, and 7888.02.

7999 Research in Comparative Studies: Thesis
Research for Master's thesis. Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

8100 Interdisciplinary Learning Laboratory I
The Comparative Studies Interdisciplinary Learning Laboratories are two-part courses that seek to give participants opportunities to engage in sustained interdisciplinary research, to workshop their research projects in conversation with one another, and to share their projects with a broader publics. Expect to enroll in CompStd 8200 subsequent to this course. Repeatable to a maximum of 18 cr hrs.

8193 Individual Studies
Designed to give able students an opportunity to pursue special studies not otherwise offered.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions. This course is graded S/U.

8200 Interdisciplinary Learning Laboratory II
The Comparative Studies Interdisciplinary Learning Laboratories are two-part year-long courses that seek to give participants opportunities to engage in sustained interdisciplinary research, to workshop their research projects in conversation with one another, and to share their projects with a broader publics. Taken in conjunction with CompStd 8100.
Prereq or concur: 8100. Repeatable to a maximum of 18 cr hrs.

8791 Seminar in Interdisciplinary Theory
Discussion of interdisciplinary cultural theory. Repeatable to a maximum of 9 cr hrs.

8805 Seminar in Literature in Global Context
Discussion of literary texts, cultural-political documents, and theoretical discourses in global contexts. Repeatable to a maximum of 15 cr hrs.

8842 Seminar in Science and Medicine
Explores relationships between science, technology and the health sciences and medical practices; topic varies. Repeatable to a maximum of 15 cr hrs.

8843 Seminar in Technology and Culture
Explores relationships between science and technology and other areas, including politics, gender and sexuality, popular culture; topic varies. Repeatable to a maximum of 15 cr hrs.

8858 Seminar in Folklore
Advanced seminar on current or specialized topics in folklore studies. Folklore GIS course.
Prereq: Grad standing, or permission of instructor. Not open to students with 9 sem or hrs of English 8858.01 (can include equiv qtr cr or hrs for 870), English 8858.02, or CompStd 8858. Repeatable to a maximum of 9 cr hrs. Cross-listed in English 8858.01.

8865 Seminar in Critical Trauma Theory
Examines various topics in the growing field of critical trauma theory. Repeatable to a maximum of 9 cr hrs.

8866 Seminar in Culture and Capital
Exploration of theoretical approaches to relations between cultural and economic production; examines major materialist theories, materialist feminism, and other forms of materialist critique. Repeatable to a maximum of 9 cr hrs.

8872 Seminar in Religious Studies
Explores relationships between religious institutions and practices and other areas, including politics, gender and sexuality, technology, popular culture; topics vary. Repeatable to a maximum of 9 cr hrs.

8888 Interdepartmental Seminar in Critical Theory
Interdisciplinary study of a movement or problem in critical theory. Repeatable to a maximum of 15 cr hrs. Cross-listed in English, French, German, Spanish, and WGSSL.

8890 Colloquia, Workshops, and Departmental Seminars
Departmental workshop, colloquium, or seminar. Topics vary. Repeatable to a maximum of 9 cr hrs or 9 completions. This course is graded S/U.

8896 Seminar in East Asian Philosophy
Seminar focusing on a particular thinker, school of philosophy, or set of texts from the East Asian philosophical tradition. Topics vary. Repeatable to a maximum of 9 cr hrs. Cross-listed in EALL 8896 and Philos 8102.

8990 Dissertation Writing Workshop
Since the dissertation is often your first effort to construct a complex, original, and extended argument, interpretation and/or analysis, this writing workshop will assist you in developing concrete strategies for tackling this major task. hold you accountable for making progress on the dissertation, and contribute to the creation of an intellectual community among Comp Studies graduate students. This course is graded S/U.

8998 Research in Comparative Studies: Candidacy Examination
Research in preparation for Ph.D. exams. Repeatable to a maximum of 27 cr hrs or 12 completions. This course is graded S/U.

8999 Research in Comparative Studies: Dissertation
Research for dissertation. Repeatable. This course is graded S/U.

Computer Science and Engineering

1110 Introduction to Computing Technology
A course of general interest giving experience with personal computer software, e.g., word processors and spreadsheets; provides fundamental computer literacy; neither teaches nor requires programming.
Prereq: Not open to students with credit for 1111 or 1113.

1111 Introduction to Computer-Assisted Problem Solving
Problem solving techniques using productivity software; spreadsheets, formulas, conditional logic, relational databases, relational algebra; word processing; data presentation; graphics.
Prereq: Not open to students with credit for 1112 (105), 1113 (101), or 200. GE quant reason math and logical anly course.

1112 Introduction to Computer-Assisted Problem Solving for Construction Systems Management
Using productivity software, especially spreadsheets and databases, to solve problems for construction management; relative/absolute cell referencing, logic, functions; relational databases, querying, project integration.
Prereq: Not open to students with credit for 1111 (101), 1113, 105, or 200.

1113 Spreadsheet Programming for Business
Spreadsheet modeling/programming concepts and techniques to solve business related problems; efficient/effective data handling, computational analysis and decision support.
Prereq: Math 1130 (130) or above. Not open to students with credit for 1111 (101), 1112 (105), 2111, or 200.

1114 Introduction to Databases Using MS Access
Database concepts and techniques for efficient/effective data handling; computational analysis and decision support.
Prereq: Not open to students with credit for 1111, 1112, or 2111.

1211 Computational Thinking in Context: Images, Animation, and Games
Introduction to computational thinking, focusing on problem solving and programming concepts and skills needed to manipulate digital images and to create interactive graphics, animations, and games; creativity and imagination encouraged.
Prereq: Not open to students with credit for 203 or 204.

1213 Computational Thinking in Context: Game Development
Introduction to computational thinking, focusing on problem solving and programming concepts and skills needed to develop video games.

1222 Introduction to Computer Programming in C++ for Engineers and Scientists
Introduction to computer programming and to problem solving techniques using computer programs with applications in engineering and the physical sciences; algorithm development; programming lab experience.
Concur: Math 1151, 1154, or 1161. Not open to students with credit for Engr 1281.01 or 1281.02. This course is available for EM credit.
1223 Introduction to Computer Programming in Java U 3
Introduction to computer programming and to problem solving techniques using computer programs; programming lab experience. Prereq: Math 1130, 1140, 1149, or 1150, or Math Placement Level L. This course is available for EM credit.

1224 Introduction to Computer Programming in Python U 3
Introduction to computer programming and to problem solving techniques using computer programs; programming lab experience. Prereq: Math 1130, 1140, 1149, or 1150, or Math Placement Level L.

2021 Introduction to Modeling and Simulation U 3
Concepts of modeling and simulation; develop MATLAB skills to explore modeling concepts; project: design, implementation, verification/validation of model; oral and written project report. Prereq: Math 1151 (152) or equivalent, and Physics 1250 (131). Not open to students with credit for 1221 or 1212.

2111 Modeling and Problem Solving with Spreadsheets and Databases U 3
Spreadsheet and database modeling/programming concepts and techniques to solve business related problems; efficient/effective data handling, computational analysis and decision support. Additional topics: computer concepts, networking, project integration. Prereq: Math 1130 or above, or Math Placement Level L. Not open to students with credit for 1111 or 1112. This course is available for EM credit. GE quant reason math and logical reasoning course.

2112 Modeling and Problem Solving with Spreadsheets and Databases for Engineers U 3
Spreadsheet and database modeling/programming concepts and techniques to solve business and engineering related problems; efficient/effective data handling, computational analysis and decision support. Prereq: 1222 (202), 1223 (201), Engr 1281.01H, or 1281.02H. Prereq or concurs: Math 1151, 1161.01, or 1161.02. Not open to students with credit for 2111 (200), 1111 (101), 1112 (105), or 1113.

2122 Data Structures Using C++ U 3
Introduction to programming in C++ and object-oriented programming; encapsulation using classes, inheritance, etc. Prereq: 1222 (202). Not open to students with credit for 230.

2123 Data Structures Using Java U 3
Subroutines and modular programming; searching; basic data structures; recursion; introduction to sequential files. Prereq: 1223.

2123 Business Programming with File Processing U 3
Business data processing principles and programming; sequential file processing algorithms; sorting, data validation; COBOL is taught. Prereq: 2123, and enrollment in Business Info Sys major or CIS minor.

2193 Individual Studies in Computer Science and Engineering U 1-10
Engineering Planning, conducting, and reporting a special study appropriate to the needs of the students. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

2194 Group Studies in Computer Science and Engineering U 1-10
Designed to give the student an opportunity to pursue special studies not otherwise offered. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

2194H Group Studies in Computer Science and Engineering U 1-10
Designed to give the student an opportunity to pursue special studies not otherwise offered. Prereq: Honors standing, or permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

2221 Software I: Software Components U 4
Intuitive foundations of software engineering; design-by-contract principles; mathematical modeling of software functionality; component-based software from client perspective; layered data representation. Prereq: 1212, 1221, 1222, 1223, Engr 1281, 1281.01H, 1281.02H, or CSE Placement Level A. Prereq or concur: Math 1151, 1161.01, or 1161.02. Not open to students with credit for 5022. This course is available for EM credit.

2231 Software II: Software Development and Design U 4
Data representation using hashing, search trees, and linked data structures; algorithms for sorting; using trees for language processing; component interface design; best practices in Java. Prereq: 2221. Concur: 2231. Not open to students with credit for 2231.01.

2321 Foundations I: Discrete Structures U 3
Propositional and first-order logic; basic proof techniques; graphs, trees, analysis of algorithms; asymptotic analysis; recurrence relations. Prereq: 2122, 2123, or 2221; and Math 1151, or 1161. Concur (for students with credit for 2221): 2231.

2331 Foundations II: Data Structures and Algorithms U 3
Design/analysis of algorithms and data structures; divide-and-conquer; sorting and selection, search trees, hashing, graph algorithms, string matching; probabilistic analysis; randomized algorithms; NP-completeness. Prereq: 2231, 2321, and Stat 3460 or 3470, and enrollment in CSE, CIS, ECE, Data Analytics, or Math major, or CIS minor. Concur: Math 3345. Not open to students with credit for 5331.

2421 Systems I: Introduction to Low-Level Programming and Computer Organization U 4
Introduction to computer architecture at machine and assembly language level; pointers and addressing; C programming at machine level; computer organization. Prereq: 2122, 2123, or 2231; and 2321 or Math 2566; and enrollment in CSE, CIS, Data Analytics, Music (BS), Engr Physics, or Math major.

2431 Systems II: Introduction to Operating Systems U 3
Introduction to operating system concepts: process, CPU scheduling, memory management, file system and storage, and multi-threaded programming. Prereq: 2421, or 2451 and ECE 2560; and enrollment in CSE, CIS, Data Analytics, Engr Physics, or ECE major. Not open to students with credit for 5431.

2451 Advanced C Programming U 2
Advanced C features for students with significant programming experience in another language. Prereq: 2221 or 222. Concur: 2321 or 321. Not open to students with credit for 2421.

2501 Social, Ethical, and Professional Issues in Computing U 1
Social, ethical, and professional issues facing computing professionals; ethical principles; discussion of case studies. Prereq: 2122, 2123, or 2221; and Gen Ed Writing: Level 2; and enrollment in CSE or CIS major, or Information Security minor. Not open to students with credit for 5501.

3231 Software Engineering Techniques U 3
Software engineering issues, techniques, methodologies and technologies; software lifecycle activities: requirements analysis, architecture, design, testing, deployment, maintenance; project management; enterprise software systems; frameworks. Prereq: 3901 or 3902 or 3903. Not open to students with credit for 5231 (757).

3232 Software Requirements Analysis U 3
Information systems analysis; object-oriented analysis models and tools; use cases, system modeling using UML, requirements specification development; term project. Prereq: 2421, 3901, 3902, 3903, or 5241; and enrollment in CIS, CSE, ECE, or Business Info Sys major. Not open to students with credit for 5322.

3241 Introduction to Database Systems U 3
Database systems use, logical design, entity-relationship model, normalization, query languages and SQL, relational algebra and calculus, object relational databases, XML, active databases; database design project. Prereq: 2133 or 2231; and 2321 or Math 2366; and enrollment in CSE, CIS, ISE, Data Analytics, ECE, Engr Physics, or Business Info Sys major, or CIS minor. Not open to students with credit for 5241.

3244 Data Management in the Cloud U 3
Systematic organization of data on cloud computing architectures; basic indexing techniques, including B-tree and hash-based indexing; fundamentals of query optimization, including access path selection and cardinality estimation; full and partial replication; data partitioning and distributed task scheduling. Prereq: 2421 or 5241; and 2421 or 3430; and enrollment in CSE, CIS, or Data Analytics major.

3321 Automata and Formal Languages U 3
Machine-based and grammatical models of computation: finite automata and regular languages, pushdown automata and context-free languages, Turing machines; non-determinism; Church’s Thesis. Prereq: 2231, 2421, 2331, and Math 3345; and enrollment in CSE, CIS, ECE, or Math major. Not open to students with credit for 5321.

3341 Principles of Programming Languages U 3
Formal languages and grammars; recursive descent parsing; data types, expressions, control structures, parameter passing; compilers and interpreters; memory management; functional programming principles. Prereq: 2231, 2331 (680), and 2421, and 3901 (660), 3902, or 3903. Not open to students with credit for 5341 (665).

3421 Introduction to Computer Architecture U 3
Organization of hardware and software in modern computer systems, including instruction set design, processor control, ALU design, pipelining, multicores and accelerators, and memory subsystem design. Prereq: 2231, 2421 or ECE 2560, and 2000 or 2060; and enrollment in CSE, CIS, ECE, or ECE major. Not open to students with credit for 5421.

3430 Overview of Computer Systems For Non-Majors U 4
Introduction to computer architecture and organization at machine and assembly level; pointers and addressing using C programming; introduction to operating system concepts: process, memory management, file system and storage, and multi-threaded programming. Prereq: 2122, 2123, or 2231; and enrollment in Data Analytics major or CIS minor. Not open to students with credit for 2421 or 2431. Not open to CSE/CIS majors.
### Computer Science and Engineering

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Units</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>3461</td>
<td>Computer Networking and Internet Technologies</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>3521</td>
<td>Survey of Artificial Intelligence I: Basic Techniques</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>3541</td>
<td>Computer Game and Animation Techniques</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>3901</td>
<td>Project: Design, Development, and Documentation of Web Applications</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>3902</td>
<td>Project: Design, Development, and Documentation of Interactive Systems</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>3903</td>
<td>Project: Design, Development, and Documentation of System Software</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>4191</td>
<td>Professional Practice in Industry</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>4193</td>
<td>Individual Studies in Computer Science and Engineering</td>
<td>1-10</td>
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<tr>
<td>4194</td>
<td>Group Studies in Computer Science and Engineering</td>
<td>1-10</td>
<td></td>
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<tr>
<td>4194H</td>
<td>Group Studies in Computer Science and Engineering</td>
<td>1-10</td>
<td></td>
</tr>
<tr>
<td>4251</td>
<td>The UNIX Programming Environment</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>4252</td>
<td>Programming in C++</td>
<td>1</td>
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<tr>
<td>4253</td>
<td>Programming in C#</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>4254</td>
<td>Programming in Lisp</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>4256</td>
<td>Programming in Python</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>4471</td>
<td>Information Security</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4998</td>
<td>Undergraduate Research in Computer Science and Engineering</td>
<td>1-10</td>
<td></td>
</tr>
<tr>
<td>4998H</td>
<td>Undergraduate Research in Computer Science and Engineering</td>
<td>1-10</td>
<td></td>
</tr>
<tr>
<td>4999</td>
<td>Computer Science and Engineering Research for Thesis</td>
<td>1-10</td>
<td></td>
</tr>
<tr>
<td>5022</td>
<td>Software I: Software Components</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>5023</td>
<td>Software II: Development and Design</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>5032</td>
<td>Foundations I: Discrete Structures</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>5042</td>
<td>Systems I: Introduction to Low-Level Programming and Computer Organization</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>5043</td>
<td>Overview of Computer Systems For Non-Majors</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>5194.01</td>
<td>Group Studies in Computer Science and Engineering</td>
<td>1-10</td>
<td></td>
</tr>
<tr>
<td>5231</td>
<td>Software Engineering Techniques</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

*Prerequisites and notes vary; please consult the university catalog for detailed information.*
Software Requirements Analysis U G 2
Information systems analysis; object-oriented analysis models and tools; use cases; system modeling using UML; requirements specification development; term project. Prereq: 3241 or 3901 or 3902 or 3903 (580) or 5241 (670). Not open to students with credit for 3232 (616).

5234 Distributed Enterprise Computing U G 3
Current application and middleware frameworks for distributed enterprise computing; XML; Enterprise Java; SOAP and REST web services; AJAX and JSON; enterprise service bus; Hadoop; mobile computing. Prereq: 2431 or 5431 (660). Not open to students with credit for 769.

5235 Applied Enterprise Architectures and Services U G 3
Modeling/analysis of complex enterprise architectures; enterprise patterns (workflow, broker, warehousing); methods for service performance (lean, ontologies, data mining, etc.); emerging topics in semantic web-technologies, social computation. Prereq: 5911 (758 and 762), 5912 (786), 5913 (682), 5914 (731), 5915 (772), or 778.

5236 Mobile Application Development U G 3
Mobile application development frameworks; architecture, design and engineering issues, techniques, methodologies for mobile application development. Prereq: 3901 or 3902 or 3903 (560).

Intermediate-level topics in software engineering. Repeatable to a maximum of 12 cr hrs or 6 completions.

5241 Introduction to Database Systems U G 2
Database systems use; logical design; entity-relationship model; normalization; query languages; relational algebra and calculus; object relational databases; XML; active databases; database design project. Prereq: 2123 or 2231 or 2233 (314) or 321, and 2321 or Math 2366 (368). Not open to students with credit for 3241 (670).

5242 Advanced Database Management Systems U G 3
Transaction management; query processing and optimization; organization of database systems, advanced indexing, multi-dimensional data, similarity-based analysis, performance evaluation, new database applications. Prereq: 3241 or 5241, and 2421 or 5042.

5243 Introduction to Data Mining U G 2
Knowledge discovery, data mining, data preprocessing, data transformations; clustering, classification, frequent pattern mining, anomaly detection, graph and network analysis; applications. Prereq: 3241 or 5241; and 2331, 5331, Stat 3301, or ISE 3200; and enrollment in CSE, CIS, ECE, Data Analytics, or ISE major.

5245 Introduction to Network Science U G 3
Introduction to Network Science; Global and Local Network Measures; PageRank; Community Discovery Algorithms; Network Models; Understanding the role of network analysis in Web and Social network applications. Prereq: 2331.

5249 Intermediate Studies in Databases U G 2 - 3
Intermediate-level topics in databases. Repeatable to a maximum of 12 cr hrs or 6 completions.

5321 Automata and Formal Languages U G 2
Machine-based and grammatical models of computation; finite automata and regular languages, pushdown automata and context-free languages, Turing machines; non-determinism; Church’s Thesis; halting problem. Prereq: 2231 or 321, and 2421 or 360, and 2331 or Math 566. Not open to students with credit for 3321 (625).

5329 Intermediate Studies in Computation Theory U G 2 - 3
Intermediate-level topics in computation theory. Repeatable to a maximum of 12 cr hrs or 6 completions.

5331 Foundations II: Data Structures and Algorithms U G 2
Design/analysis of algorithms and data structures; divide-and-conquer; sorting and selection, search trees, hashing, graph algorithms, string matching; probabilistic analysis; randomized algorithms; NP-completeness. Prereq: 2231 or 321, and 2321 or Math 366, and 2566 (566), and Stat 3470 (427). Not open to students with credit for 2331 (680).

5339 Intermediate Studies in Algorithms U G 2 - 3
Intermediate-level topics in algorithms. Repeatable to a maximum of 12 cr hrs or 6 completions.

5341 Principles of Programming Languages U G 2
Formal languages and grammars; recursive descent parsing; data types, expressions, control structures, parameter passing; compilers and interpreters; memory management; functional programming principles. Prereq: 2231, 2331 (680) and 2421, and 3901 (560), 3902, or 3903. Not open to students with credit for 3341 (655).

5343 Compiler Design and Implementation U G 3
Lexical and syntax analysis using compiler generation tools; type checking; intermediate code; control-flow analysis; dataflow analysis; code-optimizations; code generation; compiler project. Prereq: 3901 (560), 3902, or 3903, and 3341 (655). Not open to students with credit for 750.

5349 Intermediate Studies in Programming Languages U G 2 - 3
Intermediate-level topics in programming languages. Repeatable to a maximum of 12 cr hrs or 6 completions.

5351 Introduction to Cryptography U G 3
Foundations of cryptography; mathematical formulations/proofs of security goals; theory and practical constructions of encryption schemes, MACs, digital signatures; zero-knowledge proof systems; cryptographic protocols. Prereq: 2331 (680), 5331, Math 4573 (573), or 4580 (580), and Stat 3460 (427) or 3470. Not open to students with credit for 723 or 740.

5359 Intermediate Studies in Cryptography U G 2 - 3
Intermediate-level topics in cryptography. Repeatable to a maximum of 12 cr hrs or 6 completions.

5421 Introduction to Computer Architecture U G 2
Organization of hardware and software in modern computer systems, including instruction set design, processor control, ALU design, pipelining, multicores and accelerators, and memory subsystem design. Prereq: 2321 or 321, and 2421 (390) or ECE 2560 (265), and 2001 or 261. Not open to students with credit for 3421 (675.01 or 675.02).

5429 Intermediate Studies in Computer Architecture U G 2 - 3
Intermediate-level topics in computer architecture. Repeatable to a maximum of 12 cr hrs or 6 completions.

5431 Systems II: Introduction to Operating Systems U G 2
Introduction to operating system concepts; process, CPU scheduling, memory management, file system and storage, and multi-threaded programming. Prereq: 5042 or equiv. Not open to students with credit for 2431 or 660.

5432 Mobile Handset Systems and Networking U G 3
Mobile handset architecture; processors, memory, I/O devices, sensors, virtual machine and power management; different ranges of wireless communication technologies; TCP/IP over wireless; mobile social networking. Prereq: 2421, 3430, or 2451 and ECE 2560; or Grad standing.

5433 Operating Systems Laboratory U G 3
Introduction to the internals of operating systems; designing and implementing components within commercial operating systems; system calls, CPU scheduling, context switching, process management, memory management, file systems. Prereq: 2431 or 5431. Not open to students with credit for 662.

5434 Comparative Operating Systems U G 3
A careful examination of a number of representative computer operating systems. Prereq: 2431 (660) or 5431. Not open to students with credit for 741.

Intermediate-level topics in operating systems. Repeatable to a maximum of 12 cr hrs or 6 completions.

5441 Introduction to Parallel Computing U G 3
Parallel programming models; sequential and parallel performance issues; high-performance computer architecture; design, analysis, implementation and performance evaluation of parallel algorithms. Prereq: 2231, 2321, and 2421; or 2231, 2321, and 3430; or 2231, 2321, 2451, and ECE 2560; or Grad standing.

5449 Intermediate Studies in Parallel Computing U G 2 - 3
Intermediate-level topics in parallel computing. Repeatable to a maximum of 12 cr hrs or 6 completions.

5461 Computer Networking and Internet Technologies U G 2
Computer networks, communication protocols, Internet TCP/IP and applications, wireless communications and network security. Prereq: 2451, and 2421 or ECE 2560 (265). Concur: 2431. Not open to students with credit for 4561 (677).

5462 Network Programming U G 3
IP-based socket programming in C/C++, TinyOS programming in NesC. Prereq: 3461, 5461, or ECE 3561.

5463 Introduction to Wireless Networking U G 3
Fundamental concepts in cellular design, Wireless-LANs, MANETs, and sensor networks will be explored. Specific topics will include propagation, fading, cellular design, wireless communications and network security. Prereq: 3461, 5461, or ECE 3561; or Grad standing in Engineering or Math and Physical Sciences. Cross-listed in ECE 5101 or 740.

5469 Intermediate Studies in Computer Networking U G 2 - 3
Intermediate-level topics in computer networking. Repeatable to a maximum of 12 cr hrs or 6 completions.
110 Computer Science and Engineering

5471 Introduction to Cybersecurity U G 3
Introduction to cybersecurity. Technical fundamentals of data, software, component, network, and system security. Cybersecurity from an organizational and societal view point, including human factors.
Prereq: Jr, Sr, or Grad standing, or permission of instructor. Not open to students with credit for ECE 5561. Cross-listed in ECE 5561.

5472 Information Security Projects U G 3
Team-based projects: solve information security problems (mobile/static host/network hardening, intrusion detection and vulnerability scanning, forensics); results communicated through report writing and presentation.
Prereq: 3901, 3902, or 3903, and 3461, 5461, or 4471. Not open to students with credit for 652.

5473 Network Security U G 3
Security threats and services, elements of cryptography, protocols for security services, network and internet security, advanced security issues and technologies.
Prereq: 3461 (677) or 5461. Not open to students with credit for 651.

5477.01 Offensive Security U G 3
This course will give students an overview of existing offensive computing techniques, which include well known attacks that break confidentiality, integrity and availability of computing resources. Attack targeting on human weaknesses without taking special care to security will also be discussed.
Prereq: 2431, 5431, or Grad standing. Not open to students with credit for ECE 5567.01. Cross-listed in ECE 5567.01.

5477.02 Reverse Engineering and Malware Analysis U G 3
This course will give students an overview of cutting edge reverse engineering techniques as well as software security and defense practices. Programming experience in C required.
Prereq: 2431, 5431, or Grad standing. Prereq or concur: 5471 or ECE 5561. Not open to students with credit for ECE 5567.02. Cross-listed in ECE 5567.02.

Intermediate-level topics in computer security. Repeatable to a maximum of 12 cr hrs or 6 completions.

5501 Social, Ethical, and Professional Issues in Computing U G 1
Social, ethical, and professional issues facing computing professionals; ethical principles; discussion of case studies.
Prereq: 1222 or 1223 or 2321 or 214 or 223 or 220, and 2321 or Math 366, and Gen Ed Writing Level 2. Not open to students with credit for 2501 (601).

5521 Survey of Artificial Intelligence I: Basic Techniques U G 2
Survey of the basic concepts and techniques in artificial intelligence, including problem solving, knowledge representation, and machine learning.
Prereq: 2331 or 5331, or Grad standing. Not open to students with credit for 3521.

5522 Survey of Artificial Intelligence II: Advanced Techniques U G 3
Survey of advanced concepts, techniques, and applications of artificial intelligence, including knowledge representation, learning, natural language understanding, and vision.
Prereq: 3521 or 5521, and enrollment in CSE, CIS, ECE, or Data Analytics major; or Grad standing.

5523 Machine Learning and Statistical Pattern Recognition U G 3
Introduction to basic concepts of machine learning and statistical pattern recognition; techniques for classification, clustering and data representation and their theoretical analysis.
Prereq: 3521, 5521, or 5243; and 5522, Stat 3460, or 3470; and Math 2568, 2174, 4568, or 5520H; or Grad standing.

5524 Computer Vision for Human-Computer Interaction U G 3
Computer vision algorithms for use in human-computer interactive systems; image formation, image features, segmentation, shape analysis, object tracking, motion calculation, and applications.
Prereq: 2331, or Sr or Grad standing. Not open to students with credit for 634.

5525 Foundations of Speech and Language Processing U G 3
Fundamentals of natural language processing, automatic speech recognition and speech synthesis; lab projects concentrating on building systems to process written and/or spoken language.
Prereq: 3521 or 5521, and 5522, Stat 3460, or 3470. Not open to students with credit for 733.

5526 Introduction to Neural Networks U G 3
Survey of fundamental methods and techniques of neural networks; single- and multi-layer perceptions; radial-basis function networks; support vector machines; recurrent networks; supervised and unsupervised learning.
Prereq: 3521 or 5521. Not open to students with credit for 779.

5539 Intermediate Studies in Artificial Intelligence U G 2 - 3
Intermediate-level topics in artificial intelligence. Repeatable to a maximum of 12 cr hrs or 6 completions.

5541 Computer Game and Animation Techniques U G 2
Fundamental algorithms and mathematics in the production of computer animation and video games, emphasizing the control and rendering of animated characters.
Prereq: 3901 or 3902 or 3903 (560). Not open to students with credit for 3541 (683).

5542 Real-Time Rendering U G 3
Comprehensive list of topics in real-time rendering using OpenGL and GLSL, including coordinate systems, transformations, viewing, illumination, texture mapping, and shader-based algorithms.
Prereq: 3901 (560) or 3902 or 3903, and Math 2568 (568) or 571. Not open to students with credit for 781.

5543 Geometric Modeling U G 3
Common algorithmic and mathematical techniques for modeling geometric objects in computer graphics and CAD applications; simple based modeling, mesh generation, and hierarchical representations.
Prereq: Math 2568 (568) or 571. Not open to students with credit for 784.

5544 Introduction to Data Visualization U G 3
Principles and methods for visualizing data from measurements and calculations in physical and life sciences, and transactional and social disciplines; information visualization; scientific visualization.
Prereq: 5561, Stat 3301, 3541, or 5541. Not open to students with credit for 694L.

5545 Advanced Computer Graphics U G 3
Advanced topics in computer graphics; image synthesis, lighting and rendering, sampling and material properties, volume rendering.
Prereq: 3541 or 5541 or 581. Not open to students with credit for 782.

5546 Virtual Reality U G 3
Principles and methods for the design, development, and evaluation of three-dimensional interfaces in virtual environments and their applications in data science, medicine, and engineering.
Prereq: 3541, 5541, 5542, or 5544, or permission of instructor.

Intermediate-level topics in computer graphics. Repeatable to a maximum of 12 cr hrs of 6 completions.

5589 Intermediate Studies in Multidisciplinary Computing U G 2 - 3
Intermediate-level topics in multidisciplinary computing techniques Repeatable to a maximum of 8 cr hrs or 4 completions.

5591 Proseminar in Cognitive Science U G 3
Provides an in-depth examination of cognitive science from an interdisciplinary perspective.
Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs. Cross-listed in Ling, Philos, Psych, and SphHmm.

6511 Capstone Design: Software Applications U G 4
Capstone design project: application of software engineering techniques, methodologies and technologies in software lifecycle activities using enterprise software frameworks; teamwork, written and oral communication.
Prereq: 3231 or 5231, and 2501 or Philos 1338, and CSE 3901 or 3902 or 3903, and second writing course; or Grad standing.

6512 Capstone Design: Game Design and Development U G 4
Capstone design project; conceptual and technical design and implementation of interactive game, integrating custom code and tools; teamwork, written and oral communication skills.
Prereq: 3541 or 5541, and 2501 or Philos 1338, and CSE 3901 or 3902 or 3903, and second writing course; or Grad standing.

6513 Capstone Design: Computer Animation U G 4
Capstone design project: conceptual and technical design and implementation of computer animation incorporating animation elements; teamwork, written and oral communication skills.
Prereq: 3541 or 5541, and 2501 or Philos 1338, and CSE 3901 or 3902 or 3903, and second writing course; or Grad standing.

6514 Capstone Design: Knowledge-Based Systems U G 4
Capstone design project; conceptual and technical design; theory and practice of knowledge-based systems; teamwork, written and oral communication skills.
Prereq: 3521 or 5521, and 2501 or Philos 1338, and CSE 3901 or 3902 or 3903, and second writing course; or Grad standing.

6515 Capstone Design: Information Systems U G 4
Capstone design project; information system principles: database design methods and tools, indexing, searching, application development; testing, evaluation; teamwork, written and oral communication skills.
Prereq: 3241 or 5241, and 2501 or Philos 1338, and CSE 3901 or 3902 or 3903, and second writing course; or Grad standing.

6519 Individual Studies in Computer Science and Engineering G 1 - 10
Designed to give the student an opportunity to pursue special studies not otherwise offered.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

6619 Group Studies in Computer Science and Engineering G 1 - 10
Designed to give the student an opportunity to pursue special studies not otherwise offered.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

6529 Advanced Studies in Software Engineering G 1 - 3
Advanced-level topics in software engineering. Repeatable to a maximum of 24 cr hrs or 8 completions. This course is graded S/U.
6249 Advanced Studies in Databases
Advanced-level topics in databases. Repeatable to a maximum of 24 cr hrs or 8 completions. This course is graded S/U.

6321 Computability and Complexity
G 3
Turing machines, decidability, recursive enumerability; many-to-one and polynomial-time reductions; NP-completeness, Cook-Levin Theorem; Recursion Theorem. Prereq: 3321 (625) or 5321. Not open to students with credit for 725.

6331 Algorithms
G 3
Algorithm design paradigms; mathematical analysis of algorithms. Prereq: 2331 (660) or 5331. Not open to students with credit for 780.

6341 Foundations of Programming Languages
G 3
Conceptual foundations of programming languages; attribute grammars; types; functional languages; language semantics; abstract interpretation. Prereq: 3341 (665) or 5341. Not open to students with credit for 755.

6349 Advanced Studies in Programming Languages
G 1 - 3
Advanced-level topics in programming languages. Repeatable to a maximum of 24 cr hrs or 8 completions. This course is graded S/U.

6421 Computer Architecture
G 3
Principles and tradeoffs behind the design of modern computer architectures, including instruction-level parallelism, memory system design, advanced cache architectures, cache coherence, multiprocessors, energy-efficient and embedded architectures. Prereq: 3431 (660) or 5431, and 3421 (675), 5421, or ECE 5362 (662). Not open to students with credit for 775.

6422 Advanced Computer Architecture
G 3
Fundamental design issues in parallel architectures, design of scalable shared memory and distributed memory systems, interconnection networks (on-chip and off-chip), multi-core architectures, accelerators, embedded systems, and exascale systems. Prereq: 6421 (775) and 6441 (721). Not open to students with credit for 875.

6429 Advanced Studies in Computer Architecture
G 1 - 3
Advanced-level topics in computer architecture. Repeatable to a maximum of 24 cr hrs or 8 completions. This course is graded S/U.

6431 Advanced Operating Systems
G 3
Advanced topics in operating systems and concurrency; introduction to distributed systems. Prereq: 2431 (660) or 5431. Not open to students with credit for 760.

6441 Parallel Computing
G 3
Principles and practice of parallel computing; design, implementation, and performance evaluation of parallel programs for shared-memory, distributed-memory and heterogeneous parallel systems. Prereq: 5441 (621). Not open to students with credit for 721.

6449 Advanced Studies in Parallel Computing
G 1 - 3
Advanced-level topics in parallel computing. Repeatable to a maximum of 24 cr hrs or 6 completions. This course is graded S/U.

6461 Computer Communication Networks
G 3
Foundational understanding of network analysis, error-control, routing, congestion-control, multi-access, and their examples in the context of the existing communication networks. A previous course in statistics is recommended for students taking this course. Prereq: Grad standing in Engr. Not open to students with credit for ECE 6101. Cross-listed in ECE 6101.

6469 Advanced Studies in Computer Networking
G 1 - 3
Advanced-level topics in computer networking. Repeatable to a maximum of 24 cr hrs or 8 completions. This course is graded S/U.

6479 Advanced Studies in Computer Security
G 1 - 3
Advanced-level topics in computer security. Repeatable to a maximum of 24 cr hrs or 8 completions. This course is graded S/U.

6521 Artificial Intelligence
G 3
Survey of advanced concepts, techniques, and applications of artificial intelligence, including knowledge representation, learning, natural language understanding, and vision. Prereq: 4256 or equiv., Math 4568 or equiv., and Stat 3470 or equiv. Not open to students with credit for 5521 or 5522.

6539 Advanced Studies in Artificial Intelligence
G 1 - 3
Advanced-level topics in artificial intelligence. Repeatable to a maximum of 24 cr hrs or 8 completions. This course is graded S/U.

6559 Advanced Studies in Computer Graphics
G 1 - 3
Advanced-level topics in computer graphics. Repeatable to a maximum of 24 cr hrs or 8 completions. This course is graded S/U.

6998 MS Research in Computer Science and Engineering
G ½ - 10
MS research in Computer Science and Engineering. Repeatable to a maximum of 10 completions. This course is graded S/U.

6999 MS Thesis Research in Computer Science and Engineering
G 1 - 10
MS research in Computer Science and Engineering, leading to a thesis. Repeatable to a maximum of 10 completions. This course is graded S/U.

8194 Group Studies in Computer Science and Engineering
G 1 - 10
Designed to give the student an opportunity to pursue special studies not otherwise offered. Prereq: Permission of instructor. Repeatable to a maximum of 10 completions.

8998 PhD Research in Computer Science and Engineering
G ½ - 10
PhD research in Computer Science and Engineering. Repeatable to a maximum of 10 completions. This course is graded S/U.

8999 PhD Dissertation Research in Computer Science and Engineering
G 1 - 10
PhD research in Computer Science and Engineering, leading to a dissertation. Repeatable to a maximum of 10 completions. This course is graded S/U.

Construction Systems Management

1100 Exploring Construction Systems Management
U ½
Basic understanding of the global trends within construction systems management, the diversity of career opportunities within the industry, planning for a career and opportunities for professional development.

2193 Individual Studies
U 1 - 3
Introductory individual study of problems and topics not included in regular Construction Systems Management courses. Prereq: CPFR 2.5 or above, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

2194 Group Studies
U 1 - 5
Introductory group studies of selected topics in Construction Systems Management. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 4 completions.

2205 Introduction to Construction Systems Management
U 3
Overview of commercial, industrial, institutional, transportation and residential sectors of the construction industry and the role of the construction manager. Introduction to planning, scheduling, estimating, safety and ethics in construction. Prereq or concour: Math 1148, 1149, 1150, or 1151. Not open to students with credit for 1205 or 3450. This course is available for EM credit.

2210 Graphic Presentation
U 2
Presentation of three-dimensional objects by precise graphics: orthographic, sectional, pictorial, and introduction to computer graphics.

2220 Information Technology for Construction
U 3
An introduction to information technology used in the construction process for collaboration, visualization, information modeling, and simulation. The application of current collaborative software packages for the construction process is explored. Spreadsheets are used to illustrate data collection and information modeling. Emerging trends in software and hardware are discussed. Prereq: Math 1148, 1149, 1150, or 1151.

2240 Construction Materials and Methods I
U 3
A study of the principles and practices in basic metal fabrication using the current joining, metallurgical and welding processes required in the construction industry. Prereq or concour: Math 1130, 1148, 1149, 1150 or 1151. Not open to students with credit for AgSys Mt 2240. This course is available for EM credit.

2241 Construction Materials and Methods II
U 3
Material selection and construction methods for residential and commercial construction with an emphasis on wood, masonry, and concrete. Prereq or concour: 2205. Not open to students with credit for AgSysMt 2241. This course is available for EM credit.

2305 Professional Development I
U 2
Business communications and professional development in construction systems management including informative and persuasive writing, academic planning, project management, research techniques, teaming, report writing and presentations. Prereq: English 1110. Not open to students with credit for AgSysMt 2305. This course is available for EM credit.

2310 Electrical and Lighting Systems for Buildings
U 3
Concepts of electricity and illumination applied to the design and installation of electrical and lighting systems in buildings including safety, code requirements, installation methods, electrical schematics, and construction blueprints. Prereq: Math 1148, 1149, 1150, or 1151. Prereq or concour: Physics 1200 or 1250. This course is available for EM credit.

2345 Mechanical Systems for Buildings
U 3
Fundamentals of HVAC, plumbing, fire protection and noise and vibration control and their impact on building design and construction. Prereq: Math 1148, 1149, 1150, or 1151. Prereq or concour: Physics 1200 or 1250. This course is available for EM credit.
### Construction Systems Management

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
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</thead>
<tbody>
<tr>
<td>2440</td>
<td>Construction Surveying and Site Development</td>
<td>U 4</td>
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<tr>
<td>2600</td>
<td>Construction Safety and Health</td>
<td>U 3</td>
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<tr>
<td>3191</td>
<td>Internship in Construction Systems Management</td>
<td>U 2</td>
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<tr>
<td>3450</td>
<td>Estimating for Construction</td>
<td>U 4</td>
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<td>3451</td>
<td>Scheduling Construction Projects</td>
<td>U 4</td>
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<td>3545</td>
<td>Structures for Construction Mgrs I</td>
<td>U 3</td>
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<tr>
<td>3546</td>
<td>Structures for Construction Mgrs II</td>
<td>U 3</td>
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<tr>
<td>4193</td>
<td>Individual Studies</td>
<td>U 1 - 3</td>
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<tr>
<td>4194</td>
<td>Group Studies</td>
<td>U 1 - 5</td>
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<tr>
<td>4605</td>
<td>Professional Development II</td>
<td>U 1</td>
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<tr>
<td>4641</td>
<td>Construction Project Management</td>
<td>U 2</td>
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<td>4642</td>
<td>Construction Control - Contracts and Documents</td>
<td>U 3</td>
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<td>4660</td>
<td>Heavy Construction Management</td>
<td>U 3</td>
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<tr>
<td>4998</td>
<td>Undergraduate Research</td>
<td>U 1 - 3</td>
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<tr>
<td>4999</td>
<td>Research with Distinction</td>
<td>U 1 - 3</td>
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<td>4999H</td>
<td>Honors Research with Distinction</td>
<td>U 1 - 3</td>
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<tr>
<td>5670</td>
<td>Green Building and Sustainable Construction</td>
<td>U G 3</td>
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### Consumer Sciences

<table>
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<tr>
<th>Code</th>
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<tbody>
<tr>
<td>2910</td>
<td>Consumer Problems and Perspectives</td>
<td>U 3</td>
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<tr>
<td>2990</td>
<td>Professional Development</td>
<td>U 1</td>
<td></td>
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<tr>
<td>3191</td>
<td>Internship</td>
<td>U 3</td>
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<td>3930</td>
<td>Consumer Decision-Making I</td>
<td>U 3</td>
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<td>3940</td>
<td>Consumer Information: Methods of Data Analysis</td>
<td>U 3</td>
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<td>4990</td>
<td>Practicum in Consumer Sciences</td>
<td>U 1 - 3</td>
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<tr>
<td>4998</td>
<td>Undergraduate Research in Consumer Sciences</td>
<td>U 1 - 3</td>
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**Prerequisites:**
- GPA 3.0 or above, GPA 3.0 or above in ConSysM, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 3 completions. This course is graded S/U.
- GPA 3.0 or above, GPA 3.0 or above in ConSysM, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 3 completions. This course is graded S/U.
- GPA 3.0 or above, GPA 3.0 or above in ConSysM, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 3 completions. This course is graded S/U.
- GPA 3.0 or above, GPA 3.0 or above in ConSysM, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 3 completions. This course is graded S/U.
- GPA 3.0 or above, GPA 3.0 or above in ConSysM, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 3 completions. This course is graded S/U.

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**Notes:**
- This course is graded S/U.
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4998H Undergraduate Honors Research in Consumer Sciences  U  1 - 3
Supervised undergraduate honors research in various phases of consumer sciences under the
guidance of a faculty member.
Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 6 cr hrs or
6 completions. This course is graded S/U.
5193 Individual Studies in Consumer Sciences  U  G  1 - 4
Problems in various phases of consumer sciences chosen for individual study under the
guidance of a faculty member.
Prereq: Permission of instructor. Repeatable to a maximum of 8 cr hrs or 8 completions. This
course is graded S/U.
5194 Group Studies in Consumer Sciences  U  G  1 - 4
Problems in various phases of consumer sciences chosen for group study under the guidance
of a faculty member.
Prereq: Permission of instructor. Repeatable to a maximum of 16 cr hrs or 4 completions.
5333 Workplace Satisfaction, Happiness, and Well-being of Service Employees
This course discusses and applies the key concepts and strategies - intellectual and practical -
to achieve a greater sense of workplace satisfaction, happiness and well-being among service
employees.
5798 Study Tour  U  G  1 - 12
Specific content, location, term(s) of offering and prerequisites vary; contact department office
for details.
Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs or 2 completions.
6000 Introduction to Research in Consumer Sciences  G  3
Research literature in consumer sciences; development of the principles of scholarly research.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 700 or
CSCFmFnS 738 or CSEnrRSc 777.01.
6010 Individual and Family Behavior in the Market Place  G  3
Study of consumer behavior in purchase of goods and services, with emphasis on applications
to effective marketing management decisions from the consumer perspective.
Prereq: Grad standing, or permission of instructor.
6020 Theories and Models in Consumer Sciences  G  3
Survey of theories and models that serve as the foundation for research in Consumer
Sciences, including theories from economics, psychology, and sociology.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 702.
7193 Individual Studies in Consumer Sciences  G  1 - 4
Problems in various phases of consumer sciences chosen for individual study under the
guidance of a faculty member.
Prereq: 6000 (700), and Grad standing; or permission of instructor. Repeatable to a maximum
of 16 cr hrs or 16 completions. This course is graded S/U.
7194 Group Studies in Consumer Sciences  G  1 - 4
Problems in various phases of consumer sciences chosen for group study under the guidance
of a faculty member.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 16 cr hrs or 16
completions.
7230 Measurement and Analysis of the Economic Status of Consumer Units
Measurement and analysis of the economic status of consumer units including key concepts,
determinants, policy implications, and implications for research.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 739.
7240 Theories and Models in Consumer Sciences II  G  3
Aspects of consumers' family life are analyzed from the perspective of economic theories.
Emphasis is placed on implications of the theories for design and interpretation of empirical
studies.
Prereq: Intermediate Microeconomics. Not open to students with credit for 740.
7900 Graduate Seminar in Consumer Sciences  G  1
Scholarly presentations of current research by students, faculty and invited speakers to
stimulate critical thinking and discussion of implications for consumers.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 800.
Repeatable to a maximum of 5 cr hrs. This course is graded S/U.
7991 Research Practicum in Consumer Sciences  G  1 - 4
Supervised participation in empirical research inclusive of research design selection, and/or
data collection, and/or data analysis, and/or manuscript preparation.
Prereq: 6000 (700), and Grad standing; or permission of instructor. Repeatable to a maximum
of 16 cr hrs or 6 completions.
7992 Teaching Practicum in Consumer Sciences  G  1 - 4
Supervised participation in college teaching inclusive of pedagogy selection, and/or
development of teaching techniques, and/or development of course content, and/or
development of assessment pieces, and/or classroom instruction.
Prereq: 6000 (700), and Grad standing; or permission of instructor. Repeatable to a maximum
of 16 cr hrs or 8 completions.
7999 Research for Dissertation  G  1 - 12
Research for Masters Thesis.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 12 cr hrs or 4
completions. This course is graded S/U.
8193 Individual Studies in Consumer Sciences  G  1 - 4
Problems in various phases of consumer sciences chosen for individual study under the
guidance of a faculty member.
Prereq: 6000 (700), and Grad standing; or permission of instructor. Repeatable to a maximum
of 16 cr hrs or 16 completions. This course is graded S/U.
8250 Normative Approaches to Consumer Sciences  G  3
Focuses on derivation of normative guidelines for household financial decisions, but normative
guidelines related to other aspects of consumer sciences will also be covered.
Prereq: Intermediate microeconomics, introductory statistics, and introductory differential
calculations. Not open to students with credit for 741 or CSEnrSmSc 741.
8260 Behavioral Approaches to Consumer Sciences  G  3
Economic behaviors are analyzed from psychological perspectives to understand factors that
motivate consumption, saving, and related economic behaviors.
Prereq: Grad standing, and permission of instructor.
8270 Managing Consumer Risk  G  3
An examination of challenges involved in managing consumer risk. Topics include the
economics of risk, methods of risk management, and quantitative risk analysis.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 872.
8891 Special Topic Seminar: Family Finance  G  3
Survey of literature on specific family finance topics with emphasis on identifying research
problems, assessing significance, reviewing literature, conducting research, and preparing
professional presentations.
Prereq: 6000 (700), and Grad standing; or permission of instructor. Repeatable to a maximum
of 6 cr hrs.
8999 Research for Dissertation  G  1 - 12
Research for dissertation.
Prereq: Grad standing, and permission of instructor. Repeatable to a maximum of 24 cr hrs or
8 completions. This course is graded S/U.

Consumer Sciences: Consumer & Family Financial Servs

2260 Family Financial Management  U  3
The management of family financial resources; topics include financial planning and budgeting,
insurance, credit, and savings and investments.
Prereq: Not open to students with credit for CSCFmFnS 260.
2990 Professional Development  U  1
The professional: Overview of the internship and job search process, networking, involvement
in professional organizations and continued development.
Prereq: Soph standing or above, and enrollment in CSFFFS major. Not open to students with
credit for 595. This course is graded S/U.
3191 Internship  U  3
Supervised practical experience at a department approved internship site related to the
student's selected major. Includes an investigation and analysis of assigned problems and
documentation of experience.
Prereq: 2990 (595), 2.0 CPRH or above, and Jr standing; and CSFFFS major. Not open to
students with credit for 589.02. This course is graded S/U.
3260 Fundamentals of Financial Planning  U  3
This course provides an introduction to personal financial planning from the perspective of the
financial planning professional. It is a required course in the seven-course Certified Financial
Planner (CFP) sequence that qualifies students to sit for the CFP Exam after obtaining their
Bachelors degree.
Prereq: 2260 or 9 credit hours of BusFin courses at the 3000-level or higher.
3270 Families in Business  U  3
Students explore family business topics such as family dynamics, conflict, gender, ethnicity;
and relative to the business formation: growth, strategic management, professionalization and
succession.
Prereq: Soph standing or above. Not open to students with credit for 595.
4130 Consumer Decision Making II  U  3
Theory and practice of rational consumer decision making under uncertainty with application to
decision-making of oneself and for clients.
Prereq: CONSCI 3930, and Econ 2001.01; and Stat 1350, or 1430, or 1450.
4150 Quantitative Methods in Consumer Sciences  U  3
Application of data analysis to facilitate decision making with respect to consumer sciences.
Prereq: CONSCI 3940 (340), and Stat 1430 (133), 1350 (135), or 1450 (145), and CSE 1111
(101), 2111 (200), or 1223 (201). Not open to students with credit for CSCFmFnS 644.
114 Consumer Sciences: Consumer & Family Financial Services

4260 Family Tax Planning U 3
Analyze and evaluate financial decisions by families at various points in family life cycle, apply economic principles and understanding of basic tax policy to family financial decisions. Prereq or concor: 3260.

4270 Retirement Planning and Employee Benefits U 2
Evaluation of retirement plans and employee benefits with consideration of the interwoven factors of Social Security, pension, private savings, and health insurance. Prereq or concor: 3260.

4280 Estate Planning for Individuals and Families U 2
Key topics in planning for transfer of family estate, focusing on strategies that conserve family wealth while being consistent with family financial goals. Prereq or concor: 3260.

5130 Solutions to Consumer Problems UG 3
Consumer problems are defined and characterized using an economics approach. Private and public solutions to consumer problems are then examined and evaluated. Prereq: ConSci 2910 and Econ 2001.01. Not open to students with credit for CSCFmRsM 443 or CSFmRsM 443.

5140 Topics in Consumer Sciences UG 3
Timely topics in consumer sciences are examined in depth. Prereq: Econ 2001.01 and Stat 1350, 1430, or 1450, or permission of instructor. Repeatable to a maximum of 6 cr hrs.

5150 FINRA Securities Industry Essentials Exam Preparation UG 1
This course prepares students for the FINRA Security Industry Essentials (SIE) Exam. Prereq or concor: BusFin 3222 or 4221. This course is graded S/U.

5250 Retirement Planning and Employee Benefits UG 3
This course covers advanced concepts in retirement planning, procedures and issues, with particular attention to designing retirement strategies to meet diverse client needs. Students will read journal articles covering the latest developments in planning for retirement and maintaining household well-being during retirement. Special attention will be given to qualified plans, tax-advantaged plans. Prereq or concor: 3260. Not open to students with credit for 4270.

5260 Family Financial Management Applications UG 4
Family financial management concepts are applied to evaluate financial goals and prepare a comprehensive financial plan for a household. Prereq: B- or above in 3260, and 4260; BusFin 3120 or 3220. Prereq or concor: 4270 or 5250, 4280, BusFin 3300, and 3222 or 4221.

Consumer Sciences: Fashion and Retail Studies

2100 Profit-Centered Merchandising and Hospitality U 3
An examination and application of managerial and financial accounting principles for the hospitality and fashion industry operations will be the focus. Students will apply the corresponding lectures to practical assignments to form a foundation of understanding concepts, procedures, and ultimately the analysis of various documents and data. Cross-listed in CSHisMg.

2300 Branding in Fashion, Hospitality, and Sport Industries U 3
Examine branding as a business strategy in fashion, hospitality, sport and special events industries, including luxury, mass market, and boutique fashion, hotel and restaurant brands. Cross-listed in CSHisMg.

2370 Aesthetics of Fashion & Retail U 3
The perception and presentation of self and its surrounding environment through use of aesthetics with consideration of foundations of design, physical characteristics, environment, personal expression, and context.

2371 Textiles U 3
Fiber, yarn, and fabric characteristics, textile coloration and finishes; textile selection for specific end uses; laundering and care; new textile products and industry trends. Prereq: Not open to students with credit for CSFmRsM 371.

2372 Appearance, Dress, and Cultural Diversity U 3
A cross-cultural study of the diversity and meaning of appearance and dress as manifestations of individual and group behavior, social organizations, and cultural norms. Prereq: Not open to students with credit for CSFmRsM 372. GE soc sci indivs and groups course.

2373 Business of Fashion & Retailing U 3
Survey of fashion industry supply chain, business structure, design, manufacture, sourcing, distribution, and retail functions along with industry terminology, current topic analysis, and career options.

2374 Twentieth Century Fashion and Beyond U 3
Relationship between culture, society and fashion in the 20th century, the influence of historic dress on contemporary fashion, and industry developments leading to mass fashion. Prereq: English 1110. Not open to students with credit for CSFmRsM 674. GE historical study course.
4585 Merchandise Buying and Management U 3
Retail buyer's role in merchandise management: decision making, planning, buying, pricing, and preparing merchandise for sale. Analysis and synthesis of merchandising management practices and problems. Prereq: A grade of C- or above in 2373, Math 1130, Acc&MIS 2000, CSE 1111, and Jr standing; or permission of instructor.

4680 Strategic Management in Fashion & Hospitality Industries U 2
Discussion, development and application of strategic management in fashion and hospitality industries. Prereq: Sr standing, or enrolled in HRL certificate program. Cross-listed in CSHSpMg.

5555 Management Consulting for Hospitality and Fashion Retail Operations U G 3
A conceptual foundation, discussion, and application of management consulting in the hospitality and retail industries. Prereq: Sr or Grad standing, or permission of instructor. Cross-listed in CSHSpMg.

5780 Hospitality and Fashion Retail Leadership U G 3
Advanced hospitality and fashion retail professional course incorporating all principles of hospitality and fashion retail leadership in the various sectors and unique applications of knowledge learned. Prereq: Sr or Grad standing, or permission of instructor. Cross-listed in CSHSpMg.

7478 Textiles: A Global and Cultural History G 3
Focuses on social, cultural, political, and technological influences, etc. on developments in historic textiles from the ancient world to modern times. Prereq: Grad standing. Not open to students with credit for CSFarRIS 878.

7574 Aesthetics, Appearance Management, and Self-Presentation G 3
Understanding aesthetics of dress as a medium of visual communication, with analysis of appearance management strategies employed in the social presentation of self. Prereq: ConSci 6000, or Grad standing, or permission of instructor.

7575 Psycho-social and Cultural Aspects of Dress G 3
In-depth study of research and social science theories as applied to appearance and dress as manifestations of individual and group consumer behavior. Prereq: ConSci 6000 (700), or Grad standing, or permission of instructor.

Consumer Sciences: Fashion and Retail Studies

2100 Profit-Centered Merchandising and Hospitality U 3
An examination and application of managerial and financial accounting principles for the hospitality and fashion industry operations will be the focus. Students will apply the corresponding lectures to practical assignments to form a foundation of understanding concepts, procedures, and ultimately the analysis of various documents and data. Cross-listed in CSFRSt.

2200 Introduction to Healthcare Environmental and Hospitality Services U 3
An application and discussion of healthcare business and analysis of critical healthcare areas in relation to hospitality business.

2300 Branding in Fashion, Hospitality, and Sport Industries U 3
Examine branding as a business strategy in fashion, hospitality, sport and special events industries, including luxury, mass market, and boutique fashion, hotel and restaurant brands. Cross-listed in CaRSF.

2600 Introduction to Hospitality Management U 2
Overview of the hospitality-tourism industry. Introduction to and career exploration of various segments of the hospitality-tourism field.

2700 Principles of Food Production Management U 3
Application of scientific food preparation and management principles to quantity food production in a commercial establishment. Prereq: 2600 or 1600 (230), or enrollment in Culinary Science major. Concur: 2710. Not open to students with credit for 350.01 or 350.02.

2710 Principles of Food Production Management Laboratory U 1
Applying scientific food preparation principles to quantity food production in a laboratory setting. Prereq: 2600 or 1600 (230), or enrollment in Culinary Science major. Concur: 2700 (350.01). Not open to students with credit for 350.01 or 350.02.

2800 Hotel Management U 3
An examination of the lodging firm as an operating entity, including structure, management strategies, functional departments, related financial reports and revenue management. Prereq or concur: 2600 (1600 (230)). Not open to students with credit for 560.

2810 Hotel Management Practicum U 1
Provide exposure to the lodging/hotel sector via experiences in Front of the House and Heart of the House in a real operating environment. Prereq or concur: 2600 (1600 (230)) and 2800 (4800). Not open to students with credit for 552.

2990 Professional Development U 1
The professional: overview of the internship and job search process, networking, involvement in professional development organizations and continued development. Prereq: Sophomore standing or above, and enrollment in CSHSpMg major. Not open to students with credit for 595. This course is graded S/U.

3191 Internship U 3
Supervised practical experience at a department approved internship site related to the student's selected major. Includes an investigation and analysis of assigned problems and documentation of experience. Prereq: 2990 (595), 2.0 GPA or above, and Jr standing; and CSHSPMg major. Not open to students with credit for 589.02. This course is graded S/U.

3191.02 Healthcare Environmental Services Internship U 3
Supervised and practical experience at a department approved internship site related to environmental services in healthcare. Includes investigation and analysis of assigned problems and documentation of experience. Prereq or concur: 2200 and 3200. This course is graded S/U.

3200 Infection Prevention in Healthcare and Hospitality U 3
An application and discussion of introductory Microbiology, Epidemiology, Infection Prevention and Sanitation in healthcare and hospitality facilities.

3330 Corporate Social Responsibility, Sustainability & Entrepreneurship in Fashion & Hospitality Indus U 2
Examination of corporate socially responsible and sustainable decision-making and regulatory processes used in advertising and promoting fashion retail and hospitality products and services. Prereq: Jr or Sr standing, or enrolled in HRL certificate program. Cross-listed in CSFRSt.

3700 Controlling Food, Beverage, and Labor Costs U 3
Course will demonstrate effective and efficient controls of prime costs in a foodservice operation without sacrificing quality and good customer service. Prereq: 2600 (1600), and Hospitality Management major; or Hospitality Management premajor; or a Hospitality Management minor; or major in Human Nutrition: Dietetics, Culinary Science, or Professional Golf Management. Not open to students with credit for 370.

3720 Food Service Management U 3
Identification of the crucial elements involved in the successful operation of a foodservice enterprise and demonstrate their inter-relationships. Special emphasis will be on customer service and employee development. Prereq or concur: 2600 (1600), or enrollment in Human Nutrition: Dietetics major. Not open to students with credit for 551.

3730 Food Service Management Practicum U 1
Application of customer service and restaurant management responsibilities in a real operating foodservice environment. Prereq or concur: 2600 and 3720, or enrollment in Human Nutrition: Dietetics major. Not open to students with credit for 551.

3910 Consumer Service and Satisfaction U 3
Provides students with an intellectual and hands-on understanding of the key consumer service management and consumer satisfaction theories and practices that are relevant in service sectors. Cross-listed in CSFRSt.

3950 Use of Social Media and IT in Fashion, Hospitality, and Sport Industries U 2
An application and discussion of social media and information technology strategies in fashion, sport, and hospitality industries. Prereq: Jr or Sr standing, and a major, pre-major, or minor in CSFRSt, CSHSpMg, or KNSISM. Not open to students with credit for 650. Cross-listed in CSFRSt.

4200 Managing the Customer Experience in Healthcare and Hospitality Services U 3
An application and discussion of hospitality principles and customer experience management in the healthcare industry.

4600 Special Events Planning and Management U 3
Course will examine techniques and procedures required for producing successful events of all types including effective procurement, organization, and implementation of all event aspects. Prereq: 2600.

4610 Beverage Management U 2
A discussion of the varieties, merchandising and management control of alcoholic and non-alcoholic beverages served in the hospitality industry. Prereq: 2600, or enrollment in Culinary Science major.

4620 Tourism & Culture U 3
An overview of the tourism industry including travel motivation and the impacts, both positive and negative, of social, environmental, and economic influences.

4650 Human Resources in the Hospitality Industry U 3
Advanced management skills in specific application to the many facets of the Hospitality Industry with a focus on Hospitality Organizational structure and behavior and human resource management. Prereq: 3720 (551) and 2800 (4800 or 560). Not open to students with credit for 650.
### Consumer Sciences: Hospitality Management

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<th>Course Title</th>
<th>Type</th>
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<td>4798</td>
<td>Tourism &amp; Culture - Study Abroad - Bali</td>
<td>U</td>
<td>3</td>
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<tr>
<td>5555</td>
<td>Management Consulting for Hospitality and Fashion Retail Operations</td>
<td>U</td>
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<tr>
<td>5640</td>
<td>Marketing in Hospitality Enterprises</td>
<td>U</td>
<td>3</td>
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<td>5780</td>
<td>Hospitality and Fashion Retail Leadership</td>
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<td>3</td>
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<td>5820</td>
<td>Revenue Management in the Hospitality Industry</td>
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<td>8630</td>
<td>Services in the Hospitality and Retail Industries</td>
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<td>8640</td>
<td>Managing Hospitality and Retail Operations</td>
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<td>1201T</td>
<td>Exploring Agronomy, Sustainable Agriculture, and Crop Management and Soil Conservation</td>
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<tr>
<td>2189T</td>
<td>Practicum in Crop and Soil Technologies</td>
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<td>2191T</td>
<td>Crop and Soil Internship</td>
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<tr>
<td>2193T</td>
<td>Individual Studies</td>
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<td>Group Studies</td>
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<td>Introduction to Sustainable Agriculture</td>
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<td>2422T</td>
<td>Weed Control Technology</td>
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<td>2580T</td>
<td>Soil Fertility and Fertilizers</td>
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<td>3800T</td>
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### Crop and Soil Technology

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<tr>
<td>2200T</td>
<td>Introduction to Sustainable Agriculture</td>
<td>U</td>
<td>2</td>
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<tr>
<td>2201T</td>
<td>Sustainable Cropping Systems and Marketing</td>
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### Czech

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<th>Type</th>
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<tr>
<td>1102</td>
<td>Elementary Czech II</td>
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<td>4</td>
</tr>
<tr>
<td>1103</td>
<td>Intermediate Czech I</td>
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</table>

This course will give students experience with the practical on-farm skills, management practices and entrepreneurship expertise needed in various sustainable agriculture enterprises. Students will work as a team to select, plan and execute a hands-on or field-based project that integrates the environmental, social and economic aspects of sustainable agriculture.

Prereq or concur: 2200T. Repeatable to a maximum of 2 cr hrs. This course is available for EM credit.

A study of the biological, chemical, and physical components of animal manures; methods for safe handling and storage; and land application.

This course is available for EM credit.

A review and application of sustainable methods for controlling disease, insect, and weed pests in crops.

Prereq or concur: 2411T (260T). Not open to students with credit for 265T. This course is available for EM credit.

An introduction to precision agriculture technologies including auto-guidance, prescription mapping, variable rate technologies, and remote sensing with a focus on practical application of the technologies in modern production systems.

This course is available for EM credit.

An introduction to soil physical, chemical, and biological properties related to plant systems, environmental quality, and construction.

Prereq: Not open to students with credit for 221T. This course is available for EM credit.

Laboratory analysis of soil physical, chemical, and biological properties related to plant systems, environmental quality, and construction.

Prereq or concur: 2300T. Not open to students with credit for 221T. This course is available for EM credit.

A study of sustainable-use of soil resources related to soil formation, mechanics, and erosion control.

Prereq: 2300T and 2301T. This course is available for EM credit.

A study of the biological practices and production principles for grain and oilseed crops.

Prereq: GenBio 1200T or 1250T or Biology 1113. This course is available for EM credit.

An applied study of the crop species, field management practices, and agricultural technologies used to grow grasses, legumes, and forbs for forage and livestock production systems.

This course is available for EM credit.

An introduction to the application of technologies used to control weeds in field cropping systems, including biological, chemical, and mechanical methods.

This course is available for EM credit.

A study of plant nutrient cycles, fertilizer recommendations, application of ag-lime, fertilizers, animal manure, and municipal biosolids.

Prereq: 2300T and 2301T. This course is available for EM credit.

A study of economic and management principles involved in planning, organizing, operating, and administrating a farm business; emphasis placed on developing a business plan and problem solving.

Prereq: AEDIEcon 2105 (BusTec 101T or 102T). Prereq or concur: BusTec 1151T (151T) or AEDIEcon 2001 (200). Not open to students with credit for BusTec 240T. This course is available for EM credit. Cross-listed in AmriTec.

Promotes student success in college and preparation for a career; explores personal and career interests, needs, goals, and the support services available for student success.

Provides an extensive overview of research on services focused on the hospitality and retail industries. Emphasis builds on theories associated with service, quality, customer satisfaction, and customer loyalty.

Provides an extensive overview of research focused on the hospitality and retail industries. Emphasis builds on theories associated with hospitality/retail operations.

A conceptual foundation, discussion, and application of management consulting in the hospitality and retail industries. Emphasis builds on theories associated with service, quality, customer satisfaction, and customer loyalty.

A study of the cultural practices and production principles for grain and oilseed crops.

A study of the biological, chemical, and physical components of animal manures; methods for safe handling and storage; and land application.

A conceptual foundation, discussion, and application of management consulting in the hospitality and retail industries. Emphasis builds on theories associated with service, quality, customer satisfaction, and customer loyalty.

A study of the cultural practices and production principles for grain and oilseed crops.

A study of plant nutrient cycles, fertilizer recommendations, application of ag-lime, fertilizers, animal manure, and municipal biosolids.

A study of sustainable-use of soil resources related to soil formation, mechanics, and erosion control.

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A study of plant nutrient cycles, fertilizer recommendations, application of ag-lime, fertilizers, animal manure, and municipal biosolids.

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A study of plant nutrient cycles, fertilizer recommendations, application of ag-lime, fertilizers, animal manure, and municipal biosolids.

A study of the cultural practices and production principles for grain and oilseed crops.
2164 Intermediate Czech II U 4
Increasing functional ability in speaking, listening, reading, and writing practice, vocabulary-building; new grammar structures; start developing higher-level language skills in Czech. Closed to native speakers. Prereq: 1103, or 5 or hrs for 104.51 or 111. Not open to students with credit for 407.51.

Dance

1101 Contemporary I U 1 - 3
Non-major introduction to studio practice of contemporary movement forms; includes survey of the history, theory, and/or literature of contemporary movement forms. Repeatable to a maximum of 8 cr hrs or 4 completions. VSP Admis Cond course.

1111 Ballet I U 1 - 3
Non-major introduction to studio practice of classical ballet; includes survey of the history, theory, and/or literature of classical ballet. Repeatable to a maximum of 8 cr hrs or 4 completions. VSP Admis Cond course.

1141 Jazz I U 1 - 3
Non-major introduction to studio practice of jazz dance; includes survey of the history, theory, and/or literature of jazz dance. Repeatable to a maximum of 8 cr hrs or 4 completions. VSP Admis Cond course.

1151 Hip Hop I U 1 - 3
Non-major introduction to studio practice of hip hop dance; includes survey of the history, theory, and/or literature of hip hop dance. Repeatable to a maximum of 8 cr hrs or 4 completions. VSP Admis Cond course.

1161 Tap I U 1 - 3
Non-major introduction to studio practice of tap dance; includes survey of the history, theory, and/or literature of tap dance. Repeatable to a maximum of 8 cr hrs or 4 completions. VSP Admis Cond course.

2102 Contemporary II U 1 - 3
Non-major intermediate level studio practice in contemporary movement forms; includes survey of the history, theory, and/or literature of contemporary movement forms. Prereq: One year of 1101 (201.01), or permission of instructor. Repeatable to a maximum of 8 cr hrs or 4 completions.

2103 Contemporary III U 1 - 3
Non-major advanced level studio practice in contemporary movement forms; includes survey of the history, theory, and/or literature of contemporary movement forms. Prereq: One year of 2102 (202.01), or permission of instructor. Repeatable to a maximum of 8 cr hrs or 4 completions.

2112 Ballet II U 1 - 3
Non-major intermediate level studio practice in classical ballet; includes survey of the history, theory, and/or literature of classical ballet. Prereq: One year of 1111 (201.02), or permission of instructor. Repeatable to a maximum of 8 cr hrs or 4 completions.

2113 Ballet III U 1 - 3
Non-major advanced level studio practice in classical ballet; includes survey of the history, theory, and/or literature of classical ballet. Prereq: One year of 2112 (202.02), or permission of instructor. Repeatable to a maximum of 8 cr hrs or 4 completions.

2121 Improvisation U 1 - 3
Introduction to studio practice of improvisation; includes survey of the history, theory, and/or literature of improvisation. Repeatable to a maximum of 8 cr hrs or 4 completions.

2142 Jazz II U 1 - 3
Non-major intermediate level studio practice of jazz dance; includes survey of the history, theory, and/or literature of jazz dance. Prereq: One year of 1141 (201.03), or permission of instructor. Repeatable to a maximum of 8 cr hrs or 4 completions.

2143 Jazz III U 1 - 3
Non-major advanced level studio practice of jazz dance; includes survey of the history, theory, and/or literature of jazz dance. Prereq: One year of 2142 (202.03), or permission of instructor. Repeatable to a maximum of 8 cr hrs or 4 completions.

2152 Hip Hop II U 1 - 3
Non-major intermediate/advanced level studio practice of hip hop dance; includes survey of the history, theory, and/or literature of hip hop dance. Prereq: One year of 1151 (201.06), or permission of instructor. Repeatable to a maximum of 8 cr hrs or 4 completions.

2162 Tap II U 1 - 3
Non-major intermediate/advanced level studio practice of tap dance; includes survey of the history, theory, and/or literature of tap dance. Prereq: One year of 1161 or permission of instructor. Repeatable to a maximum of 8 cr hrs or 4 completions.

2171 Pilates Mat I U 1 - 3
Introduction to Pilates mat for non-majors; includes survey of the history, theory, and/or literature of Pilates. Repeatable to a maximum of 4 cr hrs or 2 completions.

2175 Yoga U 1 - 3
Yoga practice for non-majors; includes survey of the history, theory, and/or literature of yoga. Repeatable to a maximum of 8 cr hrs or 4 completions.

2176 Bartenieff Fundamentals U 1 - 3
Bartenieff Fundamentals taught by certified practitioner (CMA) for non-majors; includes survey of the history, theory, and/or literature of Bartenieff Fundamentals. Repeatable to a maximum of 4 cr hrs or 2 completions.

2178 Floor Work U 1 - 3
Floor work for non-majors; includes survey of the history, theory, and/or literature of floor work. Repeatable to a maximum of 4 cr hrs or 2 completions.

2181 Social Dance U 1 - 3
Social dance for non-majors; includes survey of the history, theory, and/or literature of social dance. Repeatable to a maximum of 8 cr hrs or 4 completions.

2190 Movement Practice: Special Topics U 1 - 3
Special topics in movement practice for non-majors. Prereq: Enrollment in Dance major. Repeatable to a maximum of 8 cr hrs or 4 completions.

2201 Minors Composition U 2 - 3
Introduction to composition for dance minors. Prereq: Not open to students with credit for 211.03. Repeatable to a maximum of 4 cr hrs or 2 completions.

2301 Analysis for Minors U 1 - 3
Introduction to analysis of movement for dance minors. Prereq: Not open to students with credit for 620.

2367 Writing About Dance U 3
Provides an opportunity to view, discuss, read, think and write about contemporary dance through the practice of criticism. Prereq: English 1110.01 (110) or equiv. Not open to students with credit for 367.01. GE writing and comm course: level 2.

2367H Honors Writing About Dance U 3
Provides a rigorous opportunity to view, discuss, read, think and write about contemporary dance and its history through the study and practice of criticism. Prereq: Honors standing, and English 1110.01 (110) or equiv, or permission of instructor. Not open to students with credit for 367.01H.

2401 Western Concert Dance: Renaissance to Present U 3
Includes European origins of classical ballet, Africanist contributions, postmodern impulses; looks at aesthetic, cultural, and political themes in the history of concert dance in America. Prereq: Not open to students with credit for 200. GE VPA course.

2501 Production U 1 - 3
Activities in dance production; includes lectures, readings, and discussions. Prereq: Enrollment in Dance major, or permission of instructor. Repeatable to a maximum of 3 cr hrs or 2 completions. VSP Admis Cond course.

2701 Music Skills for Dance U 2
This course is an introduction to essential music skills. The content will explore foundational music theory, appreciation, and music for dance. Prereq: Enrollment in Dance major, or permission of instructor. Not open to students with credit for 615.

2702 Creative Technologies for Dance U 2
Introduction to technology used in the field of dance for promotional material development and art making. Includes digital image creation / manipulation, video editing, e-portfolio building, critical image analysis and foundational composition theory. Prereq: Enrollment in Dance major, or permission of instructor. Not open to students with credit for 289.

2801 Introductory Seminar I U 1
Introduction to The Ohio State University, the College of Arts and Sciences and the Department of Dance and the available resources, academic requirements, and diverse perspectives about dance research and creative activity. Prereq: Enrollment in Dance major, or permission of instructor. Not open to students with credit for 100 or 615. VSP Admis Cond course.

2802 Introductory Seminar II U 1
Continuation of introduction to The Ohio State University, the College of Arts and Sciences and the Department of Dance and the available resources, academic requirements, and diverse perspectives about dance research and creative activity. Prereq: Enrollment in Dance major, or permission of instructor. Not open to students with credit for 260 or 289.02 VSP Admis Cond course.
### Dance

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<td>Contemporary Part I</td>
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<td>Foundational level of contemporary movement forms for dance majors. Prereq: Enrollment in Dance major, or permission of instructor. Repeatable to a maximum of 6 cr hrs or 3 completions. VSP Admis Cond course.</td>
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<td></td>
<td>Foundational level of contemporary movement forms for dance majors. Prereq: Enrollment in Dance major or permission of instructor. Repeatable to a maximum of 6 cr hrs or 3 completions. VSP Admis Cond course.</td>
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<tr>
<td>3111</td>
<td>Ballet Part I</td>
<td>U</td>
<td>1 - 3</td>
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<tr>
<td></td>
<td>Foundational level of classical ballet for dance majors. Prereq: Enrollment in Dance major, or permission of instructor. Repeatable to a maximum of 6 cr hrs or 3 completions. VSP Admis Cond course.</td>
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<tr>
<td>3112</td>
<td>Ballet Part II</td>
<td>U</td>
<td>1 - 3</td>
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<tr>
<td></td>
<td>Foundational level of classical ballet for dance majors. Prereq: Enrollment in Dance major, or permission of instructor. Repeatable to a maximum of 6 cr hrs or 3 completions. VSP Admis Cond course.</td>
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<tr>
<td>3201</td>
<td>Composition I</td>
<td>U</td>
<td>3</td>
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<tr>
<td></td>
<td>Foundational level of composition. Prereq: Enrollment in Dance major, or permission of instructor. Not open to students with credit for 211.03, 211.04, or 620. VSP Admis Cond course.</td>
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<tr>
<td>3202</td>
<td>Composition II</td>
<td>U</td>
<td>3</td>
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<tr>
<td></td>
<td>Further experience in composition. Prereq: Enrollment in Dance major, or permission of instructor. Not open to students with credit for 211.03 or 645. VSP Admis Cond course.</td>
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<tr>
<td>3301</td>
<td>Analysis</td>
<td>U</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Foundational level of analysis of movement. Prereq: Enrollment in Dance major, or permission of instructor. Not open to students with credit for 621, 620, or 656. VSP Admis Cond course.</td>
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<tr>
<td>3401</td>
<td>Dance in Popular Culture</td>
<td>U</td>
<td>3</td>
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<tr>
<td></td>
<td>Popular dance in the United States, with an emphasis on how movement constructs identity and community. Prereq: Not open to students with credit for 357. GE cultures and ideas and diversity soc div in the US course.</td>
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<tr>
<td>3402</td>
<td>Dance in Global Contexts</td>
<td>U</td>
<td>3</td>
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<tr>
<td></td>
<td>Surveys dance forms from around the globe, offering insights into the religious, social, and political functions of dances in their historical and contemporary practices. GE cultures and ideas and diversity global studies course. VSP Admis Cond course.</td>
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<tr>
<td>3411</td>
<td>History/Theory/Literature I</td>
<td>U</td>
<td>3</td>
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<tr>
<td></td>
<td>Survey of dance from the Renaissance to the early twentieth century. Prereq: Enrollment in Dance major. VSP Admis Cond course.</td>
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<tr>
<td>3412</td>
<td>History/Theory/Literature II</td>
<td>U</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Survey of dance from the early twentieth century to the present. Prereq: Enrollment in Dance major. VSP Admis Cond course.</td>
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<tr>
<td>3501</td>
<td>Dance Education</td>
<td>U</td>
<td>3</td>
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<tr>
<td></td>
<td>Foundational study in dance education. Prereq: Enrollment in Dance major. VSP Admis Cond course.</td>
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<tr>
<td>3801</td>
<td>Kinesiology</td>
<td>U</td>
<td>3</td>
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<tr>
<td></td>
<td>Exploration of the skeleton and muscles for mechanical efficiency of movement, including principles of stability and motion as they relate to dance, for dance majors and minors. Prereq: Enrollment in Dance major. Not open to students with credit for 671.01. VSP Admis Cond course.</td>
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<tr>
<td>3999H</td>
<td>Research and Creativity in Dance</td>
<td>U</td>
<td>1 - 10</td>
</tr>
<tr>
<td></td>
<td>Honors Research and Creativity in Dance. Prereq: Honors standing, or permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions. This course is graded S/U. VSP Admis Cond course.</td>
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<tr>
<td>4101</td>
<td>Contemporary Part I</td>
<td>U</td>
<td>1 - 3</td>
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<tr>
<td></td>
<td>Further expertise in contemporary movement forms for dance majors. Prereq: Enrollment in Dance major. Repeatable to a maximum of 16 cr hrs or 8 completions. VSP Admis Cond course.</td>
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<tr>
<td>4102</td>
<td>Contemporary Part II</td>
<td>U</td>
<td>1 - 3</td>
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<tr>
<td></td>
<td>Further expertise in contemporary movement forms for dance majors. Prereq: Enrollment in Dance major. Repeatable to a maximum of 16 cr hrs or 8 completions. VSP Admis Cond course.</td>
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<tr>
<td>4111</td>
<td>Ballet Part I</td>
<td>U</td>
<td>1 - 3</td>
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<tr>
<td></td>
<td>Further expertise in classical ballet for dance majors. Prereq: Enrollment in Dance major. Repeatable to a maximum of 16 cr hrs or 8 completions. VSP Admis Cond course.</td>
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<tr>
<td>4112</td>
<td>Ballet Part II</td>
<td>U</td>
<td>1 - 3</td>
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<tr>
<td></td>
<td>Further expertise in classical ballet for dance majors. Prereq: Enrollment in Dance major. Repeatable to a maximum of 16 cr hrs or 8 completions. VSP Admis Cond course.</td>
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<tr>
<td>4189</td>
<td>Field Experience</td>
<td>U</td>
<td>0 - 3</td>
</tr>
<tr>
<td></td>
<td>Internship, practicum, or professional development activity, including teaching experience, under a faculty mentor. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs or 3 completions. VSP Admis Cond course.</td>
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<tr>
<td>4193</td>
<td>Independent Study</td>
<td>U</td>
<td>1 - 10</td>
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<tr>
<td></td>
<td>Independent projects undertaken by BFA students, under supervision of faculty mentor. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions. This course is graded S/U. VSP Admis Cond course.</td>
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<tr>
<td>4193H</td>
<td>Independent Study: Honors</td>
<td>U</td>
<td>1 - 10</td>
</tr>
<tr>
<td></td>
<td>Independent projects undertaken by BFA students in honors, under supervision of faculty mentor. Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions. This course is graded S/U. VSP Admis Cond course.</td>
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<tr>
<td>4194</td>
<td>Group Studies</td>
<td>U</td>
<td>1 - 3</td>
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<tr>
<td></td>
<td>Group studies in dance. Prereq: Undergrad standing, or permission of instructor; Repeatable to a maximum of 10 cr hrs or 5 completions. VSP Admis Cond course.</td>
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<tr>
<td>4200</td>
<td>Choreography Workshop</td>
<td>U</td>
<td>1 - 3</td>
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<tr>
<td></td>
<td>Workshop providing a platform for ongoing choreographic projects, includes peer and faculty observation and critique. Prereq: 3201 (211.03) and 3202 (211.04), and enrollment in Dance major. Repeatable to a maximum of 18 cr hrs or 6 completions. VSP Admis Cond course.</td>
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<tr>
<td>4201</td>
<td>Topics in Dance Composition</td>
<td>U</td>
<td>2 - 3</td>
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<tr>
<td></td>
<td>Topics in dance composition. Prereq: 3201 (211.03) and 3202 (211.04), and enrollment in Dance major. Repeatable to a maximum of 9 cr hrs or 3 completions. VSP Admis Cond course.</td>
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<tr>
<td>4202</td>
<td>Music in Dance Composition</td>
<td>U</td>
<td>2 - 3</td>
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<td></td>
<td>Study of music suitable for choreographic purposes and the various approaches to the use of music in dance composition. Prereq: Enrollment in Dance major, and 3201, or 3202, or 645 with Music 250 or 251. Repeatable to a maximum of 9 cr hrs or 3 completions. VSP Admis Cond course.</td>
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<tr>
<td>4203</td>
<td>Group Forms</td>
<td>U</td>
<td>2 - 3</td>
</tr>
<tr>
<td></td>
<td>Composing group dances and exploring compositional devices and craft unique to group choreography. Prereq: Enrollment in Dance major, and 3201 (211.03), or 3202 (211.04). Repeatable to a maximum of 9 cr hrs or 3 completions. VSP Admis Cond course.</td>
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<tr>
<td>4290</td>
<td>Composition: Special Topics</td>
<td>U</td>
<td>1 - 3</td>
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<td></td>
<td>Special topics in composition. Prereq: Enrollment in Dance major. Repeatable to a maximum of 10 cr hrs or 5 completions. VSP Admis Cond course.</td>
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<tr>
<td>4490</td>
<td>History/Theory/Literature Special Topics</td>
<td>U</td>
<td>1 - 3</td>
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<td></td>
<td>Special topics in history/theory/literature. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 5 completions. VSP Admis Cond course.</td>
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<tr>
<td>4500</td>
<td>Directed Teaching</td>
<td>U</td>
<td>1 - 3</td>
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<td>Designed to aid prospective teachers of dance in their development of essential teaching skills in a variety of settings. Prereq: Enrollment in Dance major, and 3501 (289.01 or 289.02), or permission of instructor. Repeatable to a maximum of 18 cr hrs or 6 completions. VSP Admis Cond course.</td>
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<tr>
<td>4501</td>
<td>Dance for Children</td>
<td>U</td>
<td>3</td>
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<tr>
<td></td>
<td>Foundation for teaching dance to children. Prereq: Enrollment in Dance major, and 3501 (289.01 or 289.02), or permission of instructor. Not open to students with credit for 687.01 or 687.02. VSP Admis Cond course.</td>
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<tr>
<td>4502</td>
<td>Methods and Materials</td>
<td>U</td>
<td>3</td>
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<td></td>
<td>Foundations for teaching; laboratory problems, lectures, readings, and discussion. Prereq: Enrollment in Dance major, and 3501 (289.01 or 289.02), or permission of instructor. Not open to students with credit for 688. VSP Admis Cond course.</td>
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<tr>
<td>4700</td>
<td>Repertory</td>
<td>U</td>
<td>1 - 3</td>
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<td></td>
<td>Studio-based experience in learning a new or existing dance work, may include informal performance. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs or 6 completions. VSP Admis Cond course.</td>
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<tr>
<td>4701</td>
<td>Performance</td>
<td>U</td>
<td>1 - 3</td>
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<td></td>
<td>Rehearsal process and performance of a dance work choreographed by resident or visiting artists. Prereq: Permission of instructor. Repeatable to a maximum of 36 cr hrs or 12 completions. VSP Admis Cond course.</td>
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</tbody>
</table>
4790  Repertory: Special Topics  U  1 - 3
Special topics in repertory.
PreReq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 5 completions. VSP Admis Cond course.

4801  Senior Seminar I  U  1
The primary vehicle for the mentoring and advising of dance majors in the senior year; includes grant writing and professional development.
PreReq: Enrollment in Dance major, and Sr standing, or permission of instructor. VSP Admis Cond course.

4802  Senior Seminar II  U  1
The primary vehicle for the mentoring and advising of dance majors in the senior year; includes production of the senior project, current trends in the dance field, and technology literacy for dancers.
PreReq: Enrollment in Dance major, and Sr standing, or permission of instructor. VSP Admis Cond course.

4804  Interdisciplinary Workshop  U  1 - 3
Advanced problems in dance and related areas; nature of workshop based on selected topics.
PreReq: Permission of instructor. Repeatable to a maximum of 18 cr hrs or 6 completions. VSP Admis Cond course.

4805  Interdisciplinary Practicum  U  1 - 3
Advanced problems in dance and related areas; nature of practicum based on selected topics.
PreReq: Permission of instructor. Repeatable to a maximum of 18 cr hrs or 6 completions. VSP Admis Cond course.

4998  Senior Project  U  1 - 5
Activities leading to the completion of the BFA creative project; in partial fulfillment of the BFA degree.
PreReq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 2 completions. This course is graded S/U. VSP Admis Cond course.

499H  Honors Senior Project  U  1 - 5
Activities leading to the completion of the BFA creative project; in partial fulfillment of the BFA degree with honors.
PreReq: Honors standing or permission of instructor. Repeatable to a maximum of 10 cr hrs or 2 completions. This course is graded S/U. VSP Admis Cond course.

4999  Distinction Project  U  1 - 5
Activities leading to the completion of the BFA distinction project; in partial fulfillment of the BFA degree.
PreReq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 2 completions. This course is graded S/U. VSP Admis Cond course.

499H  Honors Distinction Project  U  1 - 5
Activities leading to the completion of the BFA distinction project; in partial fulfillment of the BFA degree with honors.
PreReq: Honors standing, or permission of instructor. Repeatable to a maximum of 10 cr hrs or 2 completions. This course is graded S/U. VSP Admis Cond course.

5100  Alternative Movement Practice  U  1 - 3
Alternative movement practice for dance majors and graduate dance students.
PreReq: Permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions. This course is graded S/U. VSP Admis Cond course.

5101  Contemporary Part I  U  1 - 3
Advanced practice in contemporary movement forms for dance majors and graduate dance students.
PreReq: Enrollment in Dance major. Repeatable to a maximum of 16 cr hrs or 8 completions. VSP Admis Cond course.

5102  Contemporary Part II  U  1 - 3
Advanced practice in contemporary movement forms for dance majors and graduate dance students.
PreReq: Enrollment in Dance major. Repeatable to a maximum of 8 cr hrs or 4 completions. VSP Admis Cond course.

5105  Contemporary Dance Practice  U  1
Intermediate and advanced practice in contemporary dance for dance majors and graduate dance students, and others by permission. This is designed as a second technique class, offered later in the day, and is intended as an opportunity for deepening one’s practice and technique.
PreReq: Enrollment in Dance major, or permission of instructor or department. Repeatable to a maximum of 12 cr hrs.

5106  Contemporary Dance Practice Part II  U  1
Intermediate and advanced practice in contemporary dance for dance majors and graduate dance students, and others by permission. This is designed as a second technique class, offered later in the day, and is intended as an opportunity for deepening one’s practice and technique.
Sp Sem.  PreReq: Enrollment in Dance major, or permission of instructor or department. Repeatable to a maximum of 12 cr hrs.

5111  Ballet Part I  U  G  1 - 3
Advanced practice in classical ballet for dance majors and graduate dance students.
PreReq: Enrollment in Dance major. Repeatable to a maximum of 8 cr hrs or 4 completions. VSP Admis Cond course.

5112  Ballet Part II  U  G  1 - 3
Advanced practice in classical ballet for dance majors and graduate dance students.
PreReq: Enrollment in Dance major. Repeatable to a maximum of 16 cr hrs or 8 completions. VSP Admis Cond course.

5115  Ballet Practice Part 1  U  G  1
Intermediate and advanced practice in classical ballet for dance majors and graduate dance students, and others by permission. This is designed as a second technique class, offered later in the day, and is intended as an opportunity for deepening one’s practice and technique.
PreReq: Enrollment in Dance major, or permission of instructor or department. Repeatable to a maximum of 12 cr hrs.

5116  Ballet Practice Part II  U  G  1
Intermediate and advanced practice in classical ballet for dance majors and graduate dance students, and others by permission. This is designed as a second technique class, offered later in the day, and is intended as an opportunity for deepening one’s practice and technique.
PreReq: Enrollment in Dance major, or permission of instructor or department. Repeatable to a maximum of 12 cr hrs.

5121  Improvisation  U  G  1 - 3
This course is for experienced dance practitioners who have had some introductory experience with improvisation and allows for advanced explorations of dance improvisation methodologies and critical analysis of the relationship of this work to other domains.
PreReq: Enrollment in Dance major, or permission of instructor. Repeatable to a maximum of 18 cr hrs or 6 completions.

5171  Pilates Mat I  U  G  1 - 2
Foundational level of Pilates mat for dance majors and graduate dance students.
PreReq: Enrollment in Dance major. Repeatable to a maximum of 4 cr hrs or 2 completions. VSP Admis Cond course.

5173  Pilates Reformer I  U  G  1 - 2
Foundational level of Pilates reformer for dance majors and graduate dance students.
PreReq: Enrollment in Dance major, or permission of instructor. Repeatable to a maximum of 4 cr hrs or 2 completions. VSP Admis Cond course.

5174  Pilates Reformer II  U  G  1 - 2
Advanced practice in Pilates reformer for dance majors and graduate dance students.
PreReq: Enrollment in Dance major, or permission of instructor. Repeatable to a maximum of 4 cr hrs or 2 completions.

5175  Yoga  U  G  1 - 3
Yoga practice for dance and health sciences majors and graduate students.
PreReq: Enrollment in Dance or Health Sciences major, or permission of instructor. Repeatable to a maximum of 16 cr hrs or 8 completions. VSP Admis Cond course.

5176  Bartenieff Fundamentals  U  G  1 - 2
Bartenieff Fundamentals taught by certified practitioner (CMA) for dance majors and graduate dance students.
PreReq: Enrollment in Dance major or permission of instructor. Repeatable to a maximum of 4 cr hrs or 2 completions.

5177  Alexander Technique  U  G  1 - 2
The relationship of kinesthetic perception and the postural reflexes to physical coordination in performance.
PreReq: Permission of instructor. Repeatable to a maximum of 8 cr hrs or 4 completions. Cross-listed in Theatre and Music.

5178  Floor Work  U  G  1 - 2
Floor work for dance majors and graduate dance students.
PreReq: Enrollment in Dance major or permission of instructor. Repeatable to a maximum of 8 cr hrs or 4 completions. VSP Admis Cond course.

5190  Movement Practice: Special Topics  U  G  1 - 3
Special topics in movement practice for dance majors and graduate dance students.
PreReq: Enrollment in Dance major or permission of instructor. Repeatable to a maximum of 10 cr hrs or 5 completions. VSP Admis Cond course.

5191  Eurythmics  U  G  1 - 3
Eurythmics for dance majors and graduate dance students.
PreReq: Enrollment in Dance major or permission of instructor. Repeatable to a maximum of 8 cr hrs or 4 completions. VSP Admis Cond course.

5194  Graduate and Undergraduate Group Studies  U  G  1 - 3
Group studies in dance.
PreReq: Grad or Undergrad standing in Dance, or permission of instructor. Repeatable to a maximum of 10 cr hrs or 5 completions. VSP Admis Cond course.
120 Dance

5200 Concert Workshop G 1 - 3
Workshop in preparation for bringing a choreographed piece to a performance setting, includes faculty and peer feedback.
Prereq: Enrollment in Dance major. Repeatable to a maximum of 10 cr hrs or 5 completions.
VSP Admis Cond course.

5211 Dance - Film I U G 3
An introduction to creating short films of dance made specifically for the camera. Basics of camera and Final Cut Pro are taught as three film projects are created.
Prereq: Jr standing, and enrollment in Dance major; or grad standing; or permission of instructor.

5212 Dance - Film II U G 3
Continuing studies from Dance Film I in dance on camera, exploring aspects of history, composition and technology as a foundation for video production.
Prereq: 5211, or permission of instructor.

5213 Intermedia Performance U G 2 - 3
Exploration of the unique characteristics of performance that integrates movement and digital media through hands-on creative and technological projects.
Prereq: Enrollment in Dance major, and Jr standing, or permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions.
VSP Admis Cond course.

5601 Production: Practicum U G 1 - 3
Hands-on exploration of elements of dance production.
Prereq: Enrollment in Dance major, and 2601 (298), or Grad standing, or permission of instructor. Repeatable to a maximum of 16 cr hrs or 8 completions.
VSP Admis Cond course.

5602 Lighting: Practicum U G 1 - 3
Hands-on exploration of elements of dance lighting.
Prereq: Enrollment in Dance major or permission of instructor. Repeatable to a maximum of 16 cr hrs or 8 completions.
VSP Admis Cond course.

5603 Costume: Practicum U G 1 - 3
Hands-on exploration of elements of dance costuming.
Prereq: 2601 (298), and enrollment in Dance major; or Grad standing; or permission of instructor. Repeatable to a maximum of 16 cr hrs or 8 completions.
VSP Admis Cond course.

5611 Technology: Practicum U G 1 - 3
Hands-on exploration of elements of dance technology
Prereq: Enrollment in Dance major, and 2601 (298), or Grad standing, or permission of instructor. Repeatable to a maximum of 16 cr hrs or 8 completions.
VSP Admis Cond course.

5612 Digital Video Editing: Practicum U G 1 - 3
Introduction to practical skills in desktop non-linear digital video editing with particular attention to motion and action editing in dance.
Prereq: Enrollment in Dance major, and 2601 (298), or Grad standing, or permission of instructor. Repeatable to a maximum of 16 cr hrs or 8 completions.
VSP Admis Cond course.

5614 Sound Design for Dance U G 1 - 3
Course focusing on how music/sound design techniques are used in composing for dance.
Prereq: Enrollment in Dance major, and 2601 (298), or Grad standing, or permission of instructor. Not open to students with credit for 632. VSP Admis Cond course.

5615 Costume Design for Dance U G 1 - 3
Course focusing on how costuming techniques are used in designing for dance.
Prereq: 2601 (298), and enrollment in Dance major; or Grad standing; or permission of instructor. Not open to students with credit for 634.

5798 Study Tour U G 1 - 15
Off-campus study tour in dance outside the US.
Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 3 completions. This course is graded S/U. VSP Admis Cond course.

6189 Field Experience G 1 - 3
Internship, practicum or professional development activity, including teaching experience, under a faculty mentor.
Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions.
VSP Admis Cond course.

6193 Independent Study: MFA G 1 - 5
Independent projects undertaken by MFA students under supervision of faculty mentor.
Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs or 16 completions.
This course is graded S/U. VSP Admis Cond course.

6194 Graduate Group Studies G 1 - 3
Group studies in dance.
Prereq: Grad standing in Dance or permission of instructor. Repeatable to a maximum of 10 cr hrs or 5 completions.
VSP Admis Cond course.

6200 Choreography Workshop G 1 - 3
Workshop providing a platform for ongoing choreographic projects, includes faculty and peer observation and critique.
Prereq: Grad standing in Dance or permission of instructor. Repeatable to a maximum of 12 cr hrs or 4 completions.
VSP Admis Cond course.

6202 Music and Choreography G 2 - 3
Investigation of dance composition with emphasis on structure and the music/dance relationship.
Prereq: Grad standing in Dance or permission of instructor. Not open to students with credit for 846. VSP Admis Cond course.

6203 Group Forms G 2 - 3
Composition of group dances, and exploration of devices and craft unique to group choreography.
Prereq: Grad standing in Dance or permission of instructor. Not open to students with credit for 749. VSP Admis Cond course.

6204 Choreographic Process G 2 - 3
Investigation of dance composition with emphasis on the choreographic process and group interaction.
Prereq: Grad standing in Dance or permission of instructor. Not open to students with credit for 847. VSP Admis Cond course.

6290 Composition: Special Topics G 1 - 3
Special topics in dance composition.
Prereq: Grad standing in Dance or permission of instructor. Repeatable to a maximum of 12 cr hrs or 4 completions.
VSP Admis Cond course.

6301 Analysis I G 2 - 3
Foundational course in Laban Movement Analysis (LMA), including studio-based studies, practice in observation, and topical readings and viewing.
Prereq: Grad standing in Dance. Not open to students with credit for 707. VSP Admis Cond course.

6700 Repertory G 1 - 3
Studio-based experience in learning a new or existing dance work, may include informal performance.
Prereq: Grad standing in Dance or permission of instructor. Repeatable to a maximum of 12 cr hrs or 4 completions.
VSP Admis Cond course.

6701 Performance G 1 - 3
Rehearsal and performance of a dance work choreographed by resident or visiting artists.
Prereq: Grad standing in Dance or permission of instructor. Repeatable to a maximum of 16 cr hrs or 8 completions.
VSP Admis Cond course.

6702 Performance Techniques G 2 - 3
Interdisciplinary seminar exploring the creative and practical aspects of performance through exercises, readings, and discussion.
Prereq: Grad standing in Dance or permission of instructor. Repeatable to a maximum of 6 cr hrs or 2 completions.
VSP Admis Cond course.

6790 Repertory/Performance: Special Topics G 1 - 3
Special topics in repertory and performance.
Prereq: Grad standing in Dance or permission of instructor. Repeatable to a maximum of 8 cr hrs or 4 completions.
VSP Admis Cond course.

6801 Foundations in Dance Research G 3
Introductory graduate seminar presenting department and university resources for dance research, academic writing skills, and technological literacy.
Prereq: Grad standing in Dance or permission of instructor. Not open to students with credit for 801.91, 801.91. VSP Admis Cond course.

6802 Foundations in Dance Pedagogy G 3
Introductory graduate seminar including practical and theoretical approaches to studio- and lecture-based class pedagogy and topics in higher education.
Prereq: Grad standing in Dance, or permission of instructor. Not open to students with credit for 801.81, 894.

6804 Interdisciplinary Workshop G 1 - 3
Advanced problems in dance and related areas; nature of workshop based on selected topics.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 8 cr hrs or 4 completions.

7303 Directing from Score G 3
Teaching and coaching of a dance learned from a Labanotation score.
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

7402 Dance in Times of Turbulence G 4
Developments in Western theatrical dance from the late eighteenth century until the end of World War I.
Prereq: Grad standing or permission of instructor. Not open to students with credit for 757. VSP Admis Cond course.

7403 Postmodernism in Dance I G 4
Inquiry into aesthetic points of view, beliefs and assumptions inherent in dance practices and dance criticism from the 1960s through the mid-1980s.
Prereq: Grad standing or permission of instructor. Not open to students with credit for 759. VSP Admis Cond course.
7404 Postmodernism in Dance II  G  4
Inquiry into aesthetic points of view, beliefs and assumptions inherent in dance practices and
dance criticism from the mid-1980s to the present.
Prereq: Grad standing or permission of instructor. Not open to students with credit for 759,
801.31. VSP Admis Cond course.

7405 Black Continuum in American Dance  G  2 - 4
Examination of dance genres, performance venues, and cultural workers that have shaped the
Black continuum in American dance from the antebellum era to the present.
Prereq: Grad standing or permission of instructor. Not open to students with credit for 801.30.
VSP Admis Cond course.

7406 Theories of the Body  G  4
Cross-disciplinary seminar in critical theory considering the body as flesh and bone and as a
discursive entity.
Prereq: Grad standing or permission of instructor. Not open to students with credit for 860.
VSP Admis Cond course.

7408 Bodies on the Line  G  4
Interdisciplinary analysis of the body as a site of political investment and contestation in stage-
based performances and everyday life.
Prereq: Grad standing or permission of instructor. Not open to students with credit for 760.03,
880.01. VSP Admis Cond course.

7409 Ethnographies of Dance and Performance  G  4
Reading and conducting ethnographic research in areas of dance and performance, including
feminist and post-colonial approaches to Western, non-Western, and globalization forms.
Prereq: Grad standing or permission of instructor. VSP Admis Cond course.

7490 History/Theory/Literature: Special Topics  G  1 - 4
Special topics in history/theory/literature of dance.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 16 cr hrs or 4
completions. VSP Admis Cond course.

7500 Directed Teaching MFA or PhD  G  1 - 3
Experience designed to aid prospective teachers of dance in their development of essential
teaching skills in a variety of settings with a faculty mentor.
Prereq: Permission of instructor. Repeatable to a maximum of 8 cr hrs or 4 completions. VSP
Admis Cond course.

7600 MFA Project: Production  G  1 - 2
Seminar focusing on production elements relevant to MFA projects during semester of
presentation.
Prereq: Grad standing in Dance or permission of instructor. Not open to students with credit for
893.04. Repeatable to a maximum of 20 cr hrs or 20 completions.

7900 Theories and Methods  G  4
Theories and methods of research in dance studies, PhD core course.
Prereq: Grad standing in Dance or permission of instructor. Not open to students with credit for
880. VSP Admis Cond course.

7901 History/Theory/Literature Choreography  G  4
Inquiry into selected topics within the history, theory and literature of choreography, PhD core
course.
Prereq: Grad standing in Dance or permission of instructor. VSP Admis Cond course.

7902 History/Theory/Literature Analysis of Movement  G  4
Inquiry into selected topics within the history, theory and literature of the analysis of movement,
PhD core course.
Prereq: Grad standing in Dance or permission of instructor. VSP Admis Cond course.

7998 MFA Comprehensive Examination  G  1 - 2
Examination questions written in partial fulfillment of the MFA degree.
Prereq: Permission of instructor. Repeatable to a maximum of 8 cr hrs or 3 completions. This
course is graded S/U. VSP Admis Cond course.

7999 MFA Project  G  1 - 10
Activities leading to the completion of the MFA creative project, in partial fulfillment of the MFA
degree.
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions.
This course is graded S/U. VSP Admis Cond course.

8193 PhD Independent Study  G  1 - 5
Independent projects undertaken by PhD students under supervision of faculty mentor.
Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs or 16 completions.
This course is graded S/U. VSP Admis Cond course.

8200 PhD Qualifying Examination  G  1 - 2
Writing of qualifying examination question to determine capacity to proceed through the
doctoral degree in Dance Studies.
Prereq: Doctoral standing in Dance Studies.

8800 PhD Pre-Candidacy Independent Readings  G  1 - 8
Selection and reading of appropriate texts toward designing candidacy examination areas.
Prereq: Doctoral standing in Dance Studies. Repeatable to a maximum of 20 cr hrs or 10
completions. This course is graded S/U.
Dental Hygiene

3150 Periodontal Therapy U 2
Instruction in initial and supportive therapy for periodontally compromised patients in dental practice settings, including discussion of adjunctive therapies and periodontal surgeries. Prereq: 2110, 2150, and 2300.

3160 Pharmacology for Dental Hygiene U 1
Introduction to pharmacology and its application to clinical dental hygiene. Topics include pharmacokinetics, pharmacodynamics, recognition of drug classes in patient's health history and how the pharmacologic regimen must be considered before dental treatment is rendered. Prereq: 2300.

3170 Dental Materials U 1
Instruction in the biologic, chemical and physical characteristics and properties of various biomaterials encountered in the practice of dental hygiene and dentistry. Prereq: 2110.

3180 Management of Medical Emergencies U 1
Introduces students to algorithms designed for the management of common medical emergencies in the dental office. This course includes a review of the signs and symptoms often seen in seven different medical emergencies. The medical emergencies covered in this course are: airway obstruction, syncope, hypoglycemia, seizure, acute asthma attack, angina, and anaphylaxis. Prereq: 2310, 3110, and 3230.

3210 Community Oral Health U 2
Introduction to the knowledge, skills and behaviors necessary to promote oral health through organized community efforts. Prereq: Admission to DHY major.

3230 Care for Patients with Special Needs U 2
Instruction to identify patients with special needs and development of skills and techniques to effectively treat this population. Prereq: 2240 and 2300.

3320 Dental Hygiene Clinic II U 3
Ongoing clinical experience with emphasis on development of fundamental clinical skills. Prereq: A grade of C- or above in 2310, 3120, 3140, and 3150, and recommendation of faculty.

3330 Dental Hygiene Clinic III U 4
A continuation of clinical patient care with emphasis on time management. Patient care parameters are expanded. Prereq: A grade of C- or above in 3320, and recommendation of faculty.

3400 Research Application and Analysis U 2
Continuation of 2400. Application of scientific inquiry, research methodology, basic statistical concepts, and interpretation of data analyses. Presentations of community dentistry and research poster projects will be completed. Prereq: 2400. Not open to students with credit for 3410.

3410 Research Methods and Interpretation U 4
Introduction to the process of scientific inquiry, research methodology, basic statistical concepts and interpretation of data analyses. Research methodology from a dental perspective will be introduced. Prereq: Admission to DHY or BDCP major.

4193 Individual Studies in Dental Hygiene U 1 - 3
Advanced studies in any relevant area of dental hygiene. Prereq: Permission of Instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

4194 Group Studies in Dental Hygiene U 1 - 3
Group studies in selected topics in dental hygiene. Prereq: Permission of Instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

4210 Integrated Dental Hygiene Science I U 1
Integration and review of all areas of dental hygiene related to dental hygiene practice. Application of analytical skills to case analysis. Prereq: Sr standing in DentHyg. This course is graded S/U.

4220 Integrated Dental Hygiene Science II U 1
Continuation of 4210. Prereq: 4210. This course is graded S/U.

4240 Practice Management U 2
Introduction to the economic and employment issues which impact dental hygiene practices and management skills to foster current standards of dental hygiene care. Prereq: Sr standing in DHY.

4250 Contemporary Concepts in the Practice of Dental Hygiene Seminar U 1
DH 4250 is designed for students to identify and explore current issues related to opportunities and demands of the dental hygiene profession. The goal of DH 4250 is to prepare students to transition from dental hygiene school to registered dental hygienists and plan for their future careers within a potentially changing American health care system and ever evolving profession. Prereq: 2220 and Sr standing in dental hygiene.

4340 Dental Hygiene Clinic IV U 4
A final clinical experience incorporating all previously acquired knowledge, techniques, procedures, and evaluation of results of dental hygiene therapy with emphasis on time management.
Prereq: A grade of C- or above in 3330, and recommendation of faculty.

4420 Current Concepts in Dental Hygiene U 2
Instruction in the significant aspects of dental hygiene practice within the context of dentistry and health care.
Prereq: 3400 or 3410.

4430 Dental Hygiene Practicum U 1 - 4
Supervised practice outside the traditional clinic in a setting similar to one in which the dental hygiene student may practice, teach, or conduct research upon graduation.
Prereq: Sr standing in DHY or BDCP major. Repeatable to a maximum of 4 cr hrs or 4 completions. This course is graded S/U.

4530 Oral Health Behavior Management U 2
Introduction in advanced skills for dental hygienists to help patients achieve good oral health, with emphasis on clinical application and evaluation.
Prereq: Admission to BDCP major.

4620 Dental Hygiene Education I U 3
Introduction to teaching in the dental hygiene setting. This course is designed to provide the future dental hygiene educator with insight into the fundamental principles of learning and teaching. This course highlights the behaviors, attitudes, and interactions of effective and inspiring teachers.
Prereq: Admission to UDHY major.

4630 Dental Hygiene Education II U 3
Continuation of 4620. This course is designed to provide the future dental hygiene educator with an appreciation of foundations of teaching and learning, essential teaching skills, importance of communication in teaching, instructional planning, instructional strategies/activities, assessment fundamentals, methods of assessment, teaching in higher education, and personal philosophy of teaching.
Prereq: 4620.

4725 Expanded Functions for the Dental Auxiliary Pre-clinic U 4
Introduction to theory and technical procedures for the expanded functions dental auxiliary in four-handed dentistry and restoring cavity preparations with amalgam alloy and filled resins.
Prereq: A grade of C- or above in 2310.

4740 Expanded Functions for the Dental Auxiliary Clinic I U 1 - 3
Clinical application of expanded function duties permitted by law.
Prereq: A grade of C- or above in 4725.

4750 Expanded Functions for the Dental Auxiliary Clinic II U 1
Clinical application of expanded function duties permitted by law.
Prereq: A grade of C- or above in 4740.

4760 Expanded Functions for the Dental Auxiliary Seminar U 1
Instruction in current expanded functions, practice management techniques, and current law in Ohio including practical experiences in preparation for Ohio Expanded Functions Qualifying Examination.
Prereq: A grade of C- or above in 4740.

6000 Educational Policy and Management in Dental Hygiene G 3
Designed to study the concept of policy as it relates to dental hygiene educational institutions and their governance and practices while providing knowledge and skills in basic management and administration.
Prereq: Admission to Master's in Dental Hygiene, or permission of instructor.

6100 Dental Hygiene Educational Theory and Methods G 3
The study of theory, principles and research related to the faculty role in active teaching and learning, critical thinking, and development of course alignment in dental hygiene education.
Prereq: Admission to Master's in Dental Hygiene, or permission of instructor.

6200 Contemporary Issues in Dental Hygiene G 3
Examines current issues which affect the overall dental profession with a strong focus on dental hygiene issues and the delivery of dental health care. It explores current and innovative strategies to make changes in dental hygiene to improve oral and overall health care.
Prereq: Admission to Master's in Dental Hygiene, or permission of instructor.

6400 Introduction to Dental Research Designs G 3
Designed to present conception and technical problems in the development and implementation of clinical, behavioral and basic science research projects related to dentistry.
Prereq: Admission to Master's in Dental Hygiene, or permission of instructor.

6450 Statistical Analysis and its Application to Dental Hygiene G 3
Designed to provide a conceptual foundation of statistics related to basic, clinical and behavioral dental science.
Prereq: 6400, and admission to Master's in Dental Hygiene.

7100 Instructional Strategies G 3
Explores modern educational methodology and course design in the teaching of dental hygiene students including technological advances in online and traditional teaching.
Prereq: 6100, or permission of instructor.
Dental Hygiene Internship  
Supervised practical experience in the day to day operation of a dental hygiene program. Prereq: 6100, 7100, and 7200 for a teaching internship; or 6000 and 7300 for an administrative internship; and admission to the MDH program, or permission of instructor. Repeatable to a maximum of 12 cr hrs or 4 completions. This course is graded S/U.

Individual Studies in Dental Hygiene  
Provides an opportunity for students to pursue individual studies in dental hygiene topics not otherwise offered. Prereq: Admission to MDH program, and permission of instructor. Repeatable to a maximum of 12 cr hrs or 4 completions. This course is graded S/U.

Clinical/Laboratory Instruction and Administration  
Designed to study the theory and practice of laboratory, pre-clinical, and clinical dental hygiene instruction with an emphasis on psychomotor skill development, student mentoring, and evaluation. Prereq: Admission to MDH program, or permission of instructor.

Leadership and Administration in Dental Hygiene  
Designed to study leadership theories and program administration unique to dental hygiene educational programs including accreditation, human resources, faculty evaluation, budgeting, administration, and outcomes assessment. Introduces the administrative structure and duties required to become a faculty member or program director and focuses on leadership in the profession. Prereq: Admission to Master’s in Dental Hygiene, or permission of instructor.

Research: Thesis  
Provides graduate students with the opportunity to develop and conduct basic and applied Dental Hygiene research required for the completion of a master’s thesis. Prereq: Admission to MDH program, and permission of thesis advisor. Repeatable to a maximum of 18 cr hrs or 6 completions. This course is graded S/U.

Dentistry

Molecular and Cellular Biochemistry  
Basic principles of biochemistry, molecular and cellular biology with special emphasis on biochemical processes important in dentistry. Prereq: Not open to students with credit for 606 and 607.

Communication and Ethics in Dentistry  
Communication basics with an emphasis on communication with patients. Also includes an introduction to cultural competence and ethics in dentistry.

Microbiology and Immunology  
Major components of the human immune system, and the immune response to medically important pathogens including bacteria, viruses, fungi and parasites.

Clinical Evaluative Sciences I  
Evidence Based Dentistry. Repeatable to a maximum of 2 cr hrs.

Introduction to Clinical Dentistry I  
Introduction to prevention of oral disease, oral examination and modeling, patient evaluation, and use of the dental operatory. May include observation or assistance with clinical patient care, simulations, and laboratory exercises. Prereq: Not open to students with credit for 415.02, 416, and 427. This course is graded S/U.

Oral Anatomy  
Dental anatomy and anatomy of the head and neck.

Clinical Evaluative Sciences II  
Evaluative sciences as they relate to the practice of dentistry including measurement and description of data and research study design.

Introduction to Clinical Dentistry II  
Introduction to periodontal instrumentation, charting, ultrasonic scaling and recall. Topics also include: Rubber dam, coronal polishing and composite typodont exercise. This course is graded S/U.

Fixed I Lecture  
This course provides information regarding how to prepare ivorine teeth (molars and premolars) for a complete veneer crown cast gold restoration. Repeatable to a maximum of 3 cr hrs.

Fixed I Laboratory  
This course provides experience in preparing ivorine teeth (molars and premolars) for a complete veneer crown cast gold restoration.

Fixed II Lecture  
Students will learn to restore anterior teeth with crowns, applying scientific basis on principals of tooth preparations, provisional restorations, and material selections. The principals of esthetics will be introduced and applied in provisional restorations.

Fixed Restorative Dentistry II Laboratory  
Students will learn to restore anterior teeth with crowns, applying scientific basis on principals of tooth preparations, provisional restorations, and material selections. This laboratory course is taught in conjunction with 6436.01.

Fixed Restorative Dentistry III Laboratory  
Students will learn to restore anterior partial edentulism with fixed dental prosthesis. Topics include: application of scientific basis to indications and contraindication, principals of tooth preparations, provisional restorations, and material selections and esthetics. Repeatable to a maximum of 6 cr hrs.

Fixed IV Laboratory  
Clinical and theoretical considerations of tooth preparation design for fixed partial dentures and metal ceramics, the importance of diagnostic waxing, fabrication of direct provisional restorations, theoretical considerations in framework design, and the properties of materials used in the fabrication of metal-ceramic restorations. Repeatable to a maximum of 3 cr hrs.

Removable Complete Prosthodontics I  
Overview of complete removable prosthodontics for the general dentist. Includes a laboratory component.

Removable Partial Prosthodontics I  
Introduction to removable partial prosthodontics. Survey edentulous casts and design removable partial dentures; prepare mouth for insertion. Includes a laboratory component.

Advanced Principles in Cardiology  
Advanced Principles in Cardiology is a one semester, one credit elective course designed to help third year DDS program students who are interested in specialty programs (especially anesthesia and OMFS) gain a more in-depth understanding of the functions of the human heart. It will specifically focus on advanced principles related to cardiac anatomy, physiology, and pathology. Prereq: Enrollment in the third academic year of the DDS program, and permission of instructor. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

Advanced Principles in Pulmonology  
In-depth understanding of the functions of the human respiratory system. Specific focus on advanced principles related to pulmonary anatomy, physiology, and pathology. Prereq: Enrollment as a Dentistry Year 3 student. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

Histology, Development and Cell Biology of Oral Tissues  
Light microscopic and ultrastructural organization of adult and developing oral tissues including their underlying cellular and molecular basis.

Oral Surgery I  
Introduction to principles of patient evaluation and management for common dento-alveolar surgical procedures.

Oral Microbiology and Cariology  
Epidemiology of dental caries and periodontitis. Oral microbiology of the disease process and relationship to systemic disease. Topics also include: Oral infections, sterilization and asepsis, and caries assessment, diagnosis, and fluoride therapy.

Post and Core Restoration of Endodontically Treated Teeth  
Restoration of endodontically treated teeth. Repeatable to a maximum of 1.5 cr hrs.

Oclusion  
This course covers the impact of tooth form on function function. Students will learn how to model a patient’s dentition in the laboratory and appropriately relate it to the TMJ. This course will provide students with an understanding of the dynamics of mandibular movements, articulator design, occlusal schemes, anatomy of teeth.

Oclusion  
The affect of tooth form on function. Repeatable to a maximum of 6 cr hrs.

Oclusion Laboratory  
The goal of this course is to enable the student to explore the functional and aesthetic form of human dentition, and to more fully comprehend and visualize mandibular movements as critical elements in providing optimal restorative dental treatment. This is laboratory course is taken in conjunction with the didactic course 6533.01. Repeatable to a maximum of 3 cr hrs.
Introduction to the mechanism of action and side effects of pharmacologic agents.

Introduction to the clinical use of local anesthetics, including the diagnosis of anesthesia, maxillary and mandibular nerve block, and other minor nerve blocks.

Techniques of intraoral local anesthetic administration with emphasis on predicting and preventing complications. Includes discussion of related basic science principles.

Nerve, muscle, cardiovascular, respiration, endocrine and renal. Oral physiology topics including kinesiology, mastication, swallowing and pain.

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<td>Clinical Endodontics I</td>
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<td>Clinical Periodontology</td>
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<td>Clinical Oral Surgery I</td>
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<td>Clinical Oral Surgery II</td>
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Course descriptions:

- **6632** Advanced topics related to treatment planning, dental materials, articulators and impressions.
- **6633** Advanced topics related to: esthetics, casting delivery, removable partial denture attachments, classification of endodontium, treating difficult denture patients and maxilofacial prostheses.
- **6638** Introduction to implant dentistry including discussion of treatment planning dental implants.
- **6645** Oral and maxilofacial pathologic conditions. Topics include dental and developmental anomalies, mucocutaneous and salivary gland disorders, odontogenic cysts and tumors and HIV infection.
- **6648** Oral and maxilofacial pathologic conditions. Topics include inflammatory and reactive conditions, epithelial and melanocytic pathology, Mesenchymal hard and soft tissue neoplasms, hematologic disorders and oral manifestations of systemic disease.
- **6651** Overview of Pediatric Dentistry for the general dentist. Content includes treatment of infants, children, adolescents and those patients with special medical needs.
- **6654** This course is intended to provide the general practitioner with knowledge and skill to evaluate child, adolescent and adult patients’ orthodontic problems. Repeatable to a maximum of 6 cr hrs.
- **6655** Overview of human disease and the mechanisms associated with genetic, acquired, reactive and neoplastic conditions. Disease epidemiology, pathogenesis, diagnosis, treatment, prognosis and prevention are discussed.
- **6656** Introduction to orthodontic diagnosis and treatment planning for general dentists.
- **6657** Orthodontics for general dental practitioners. Repeatable to a maximum of 6 cr hrs.
- **6658** This course establishes the skills required for the clinical application of the principles of facial and dental growth and development, and orthodontic diagnosis. Students will develop the skills that they will need to address the orthodontic needs of their patients and to recognize when orthodontic treatment can add to the results of their restorative and periodontal treatment. Repeatable to a maximum of 1.5 cr hrs.
- **6659** Advanced topics in orthodontics for the general dentist including: growth and development and treatment evaluation.
- **6684** Finishing and polishing a complete denture, laboratory remount, occlusal equilibration, denture repair and reline. Includes a laboratory component.
- **6690** Introduction to interim partial dentures and border molding, dental photography, carries risk assessment, removal of large restorations and head and neck examination. Includes observation or assistance with clinical patient care. This course is graded S/U.
- **6691** Overview of clinic patient records. Exercise in local anesthesia administration, use of posterior rubber dam and dental charting. Also includes observation or assistance with clinical patient care. This course is graded S/U.
- **6693** Individual studies in any of the recognized fields of dentistry. Repeatable to a maximum of 36 cr hrs or 6 completions. This course is graded S/U.
- **6704** Overview of advanced oral surgery practice.
- **6744** Case-based study of oral pathologic conditions including documentation, development of the differential diagnosis, strategies to establish the diagnosis and patient management.
- **7012.01** Laboratory component of Dentistry 7012 in which students will learn anatomy of the human brain. Prereq: Permission of instructor. Cross-listed in NeuroSc 7200.01.
7708 Clinical Pediatric Dentistry II  
Experience treating child and adolescent patients in a clinic environment. Also includes experience in a hospital setting and exposure to complicated Pediatric Dentistry and Special Needs cases. Includes competency examinations. Prereq: Not open to students with credit for 708.03. This course is graded S/U.

7716.01 Primary Care IV  
Clinical experience in primary care dentistry including diagnosis, prognosis, treatment planning, care delivery and evaluation. May include competency examinations and special projects. This course is graded S/U.

7716.02 Primary Care IV  
Clinical experience in primary care dentistry including diagnosis, prognosis, treatment planning, care delivery and evaluation. May include competency examinations and special projects. This course is progress graded.

7718.01 Primary Care V  
Clinical experience in primary care dentistry including diagnosis, prognosis, treatment planning, care delivery and evaluation. May include competency examinations and special projects. This course is graded S/U.

7718.02 Primary Care V  
Clinical experience in primary care dentistry including diagnosis, prognosis, treatment planning, care delivery and evaluation. May include competency examinations and special projects. Prereq: Not open to students with credit for 716, 717, 718, or 719. This course is progress graded.

7719.01 Primary Care VI  
Clinical experience in primary care dentistry including diagnosis, prognosis, treatment planning, care delivery and evaluation. May include competency examinations and special projects. This course is graded S/U.

7719.02 Primary Care VI  
Clinical experience in primary care dentistry including diagnosis, prognosis, treatment planning, care delivery and evaluation. May include competency examinations and special projects. This course is progress graded.

7746 Clinical Oral Radiology Introductory  
Introducy clinical experience in Oral Radiology. Includes selection, and evaluation of radiographs in addition to techniques for obtaining appropriate images. This course is graded S/U.

7747 Clinical Oral Radiology Intermediate  
Intermediate level clinical experience in Oral Radiology. Includes selection, and evaluation of radiographs in addition to techniques for obtaining appropriate images. This course is graded S/U.

7769 Clinical Endodontics II  
Clinical experience in performing root canal treatment on uncomplicated permanent teeth. Also exposure to treatment modalities necessary in more complicated Endodontic cases.

7776 Periodontology Clinical Competencies  
Competency examinations related to Periodontology. Repeatable to a maximum of 3 cr hrs. Repeatable to a maximum of 20 cr hrs or 20 completions.

7920 Oral Biology Seminar  
Student presentations of recent research findings, both original and from the literature. Repeatable to a maximum of 40 cr hrs or 20 completions.

7921 Oral Biology Journal Club  
Weekly, one student will present a current paper from a top tier journal that reports important findings related to Oral Biology. Prior to class, all students will read the paper, write a brief summary, summarize the experimental design and statistical approach, and compose two questions for class discussion. Grading is based on presentation quality, completion of prework, and participation. Repeatable to a maximum of 20 cr hrs or 10 completions. This course is graded S/U.

7993 Individual Studies in Advanced Dentistry  
Advanced individual studies in any of the recognized fields of dentistry. Repeatable. This course is graded S/U.

8000.02 Orthodontics/Graduate Orthodontics Clinic  
Broad exposure to advanced clinical principles and practices. Repeatable.

8000.03 Periodontics  
Broad exposure to advanced clinical principles and practices. Repeatable.

8000.04 Prosthodontics/Graduate Prosthodontics Clinic  
Broad exposure to advanced clinical principles and practices. Repeatable.

8000.05 Oral Pathology I Clinical Assisting  
Broad exposure to advanced clinical principles and practices. Repeatable. This course is graded S/U.

8000.06 Endodontics  
Broad exposure to advanced clinical principles and practices. Repeatable. This course is graded S/U.

8000.07 Pediatric Dentistry I Graduate Pediatric Dentistry Clinic  
Broad exposure to advanced clinical principles and practices. Repeatable. This course is graded S/U.

8000.15 Oral Pathology I Surgical Pathology  
Broad exposure to advanced clinical principles and practices. Repeatable. This course is graded S/U.

8000.17 Pediatric Dentistry II Medical Clinical Rotations  
Broad exposure to advanced clinical principles and practices. Repeatable. This course is graded S/U.

8000.22 Orthodontics III Craniofacial Anomalies Clinic  
Broad exposure to advanced clinical principles and practices. Repeatable. This course is graded S/U.

8000.24 Prosthodontics III Maxillofacial Clinic  
Broad exposure to advanced clinical principles and practices. Repeatable. This course is graded S/U.

8000.27 Pediatric Dentistry III Anesthesio Rotation  
Broad exposure to advanced clinical principles and practices. Repeatable. This course is graded S/U.

8001.01 Anesthesia Literature Review  
The course will explore recent advances and opinions in anesthesiology and provide an understanding of key concepts of anesthesiology and approaches to clinical management. The course will consist of a monthly topic and at least two recent peer reviewed articles that will be presented to the class for discussion. One member of the class will develop and present the lecture for each class. Repeatable to a maximum of 3.5 cr hrs.

8001.02 Orthodontics  
Review of literature. Repeatable.

8001.03 Periodontics  
Review of literature. Repeatable.

8001.04 Prosthodontics I Removable Prosthodontics  
Review of literature. Repeatable.

8001.05 Oral Pathology  
Review of literature. Repeatable. This course is graded S/U.

8001.14 Prosthodontics II Fixed Prosthodontics  
Review of literature. Repeatable.

8001.24 Prosthodontics III Dental Implants  
Review of literature. Repeatable.

8002.01 Anesthesia Grand Rounds  
Discussion of clinical cases. The course is designed to teach advanced principles of hospital anesthesia to dental anesthesia residents and provide monthly morbidity and mortality case reports. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

8002.02 Orthodontics I Case Seminars  
Discussion of clinical cases. Repeatable.

8002.03 Periodontics I Faculty Presentations  
Discussion of clinical cases. Repeatable.

8002.05 Oral Pathology  
Discussion of clinical cases. Repeatable. This course is graded S/U.

8002.06 Endodontics  
Discussion of clinical cases. Repeatable.

8002.07 Pediatric Dentistry I Contemporary Issues  
Discussion of clinical cases. Repeatable. This course is graded S/U.
8002.12 Orthodontics II Case Presentations
Discussion of clinical cases. Repeatable. This course is graded S/U.

8002.13 Periodontics II Student Presentations
Discussion of clinical cases. Repeatable. This course is graded S/U.

8002.17 Pediatric Dentistry II Introductory Orthodontics
Discussion of clinical cases. Repeatable. This course is graded S/U.

8002.22 Orthodontics III Craniofacial Anomalies
Discussion of clinical cases. Repeatable. This course is graded S/U.

8002.27 Pediatric Dentistry III Advanced Orthodontics
Discussion of clinical cases. Repeatable. This course is graded S/U.

8002.32 Orthodontics IV Dental Facial Anomalies
Discussion of clinical cases. Repeatable. This course is graded S/U.

8003 Research I
Statistics and research design. Introduction to research ethics, human subject and animal research.

8004 Research II
Advanced topics related to research ethics, intellectual property, human subjects and animal research.

8006 Dental Photography
Dental Photography. Topics include: equipment, setup and lighting; portrait and intra-oral photography; photo management and presentation; copystand photography. This course is graded S/U.

8007 Legal Issues in Dentistry
Legal issues in the acquisition and management of a dental practice including issues associated with delivery of dental services to consumers, malpractice claims against practitioners and impact of government regulation on the delivery of care.

8008 Advanced Oral Embryology and Histology
Development of the craniofacial region, odontogenesis, eruption and structure and function of the orofacial tissues.

8009 Research Design I
Using different research designs as the foundation, this course reviews evidence-based dentistry and basic parametric and non-parametric methods of statistical inference commonly encountered in clinical research. The course also provides a background in ethical considerations for responsible conduct of research and protection of human subjects in biomedical research.

8010 Research Design II
This course will cover many basic principles involved in the evaluation of dental literature, in the design of a research project, and in composing and evaluating a dental research proposal, with emphasis on ethical issues, variable descriptions, statistical designs and possible conclusions, and research involving human or animal subjects.

8011 Advanced Oral and Maxillofacial Radiology
The goals of this course are to engage residents in radiographic diagnosis through active, individual, and group learning.

8150 Orofacial Pain
Overview of musculoskeletal, neuropathic and neurovascular facial pain to enable accurate differential diagnosis of non-odontogenic facial pain. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

8151 Sedation
Covers the indications, complications, pharmacology and techniques of IV sedation for dentistry.

8152 Physical Diagnosis
Reviews the skills and knowledge needed to perform a history and physical examination appropriate for hospital admission. This course is graded S/U.

8153 Anesthesia Seminar
Comprehensive review of general anesthesia and sedation as well as related subjects to anesthesiaology and oral and maxillofacial surgery residents in small group discussion format. Repeatable to a maximum of 10 cr hrs or 10 completions.

8154 Integrated Anesthesia Studies
This course is designed to help dental anesthesia residents gain a deeper understanding of the practice of anesthesia. Residents will discuss applied principles and techniques that will be encountered during residency training and in private practice. Repeatable to a maximum of 5 cr hrs. This course is graded S/U.

8155 Emergency Simulation Lab
This course will teach, test, and refine clinical skills related to anesthesia emergencies. Training will utilize high-fidelity simulation mannequins and planned emergency scenarios. The lab sessions will take place in the OSUMC simulation lab and in the College of Dentistry. The course will incorporate video monitoring of the training and an in-depth debriefing sessions after each lesson. Repeatable to a maximum of 5 cr hrs. This course is graded S/U.

8156 Anesthesiology Science Core
The purpose of this course is to help dental anesthesiology residents review the principles of general physiology. This will help residents in their treatment of patients and as they prepare to take part I of the ADBA national board examination. Repeatable to a maximum of 5 cr hrs.

8201 Advanced Orthodontics Orientation
Orientation to methods used in conjunction with clinical care with an emphasis on diagnosis and treatment planning.

8202 Contemporary Orthodontics
Introduction to concepts related to diagnosis, prioritization of problems and treatment planning orthodontic cases.

8203 Orthodontic Appliance Design
Design, application and fabrication of orthodontic appliances frequently used in the clinical setting. The primary clinical function of these appliances includes: anchorage, tooth movement, skeletal change, habit management and retention.

8204 Cephalometrics
Cephalometric techniques and interpretation in relation to orthodontic treatment and growth.

8205 Typodont Technique I
Wire Bending techniques use in the treatment of orthodontic problems.

8206 Typodont Technique II
Twee edgewise technique.

8207 Orthodontic Diagnosis and Treatment I
Orthodontic diagnosis and treatment planning focusing on problem oriented diagnostic approaches and evidence-based treatment. Seminar format.

8208 Orthodontic Diagnosis and Treatment II
Orthodontic diagnosis and treatment planning focusing on problem oriented diagnostic approaches and evidence-based treatment. Seminar format.

8209 Biomechanics I
Biomechanics as related to Orthodontic treatment. Topics may include: biological basis of tooth movement, concepts of engineering stress and strain, polar moments of inertia, biomechanics or orthodontic tooth movement and skeletal anchorage.

8210 Biomechanics II
Biomechanics as related to Orthodontic treatment. Topics may include: biological basis of tooth movement, concepts of engineering stress and strain, polar moments of inertia, biomechanics or orthodontic tooth movement and skeletal anchorage.

8211 Orthodontic Materials

8213 Dentofacial Orthopedics
Diagnosis and management of patients with dento-facial deformities.

8214 Growth and Development
Principles of growth and development as they apply to orthodontics.

8215 Orthodontic Practice Management
Overview of practice management topics including financial, legal and clinical administration issues. Focus is on establishment and management of an individual or small group orthodontic practice.

8216 Craniofacial Anomalies
Diagnosis, treatment and management of the patient with cleft lip and palate and other craniofacial anomalies from a multi-disciplinary approach.

8300 Introduction to Periodontology
Introduction to Advanced Periodontics. This course is graded S/U.

8302 Practice Management Seminar
This course is designed to expose dental specialty students to practice management scenarios as a catalyst for critical thinking to enhance decision making processes for their practices. This course is graded S/U.

8303 Anatomy and Histology of the Periodontium
Periodontal anatomy and histology, including peri-implant and surgical anatomy.
128 Dentistry

8304 Periodontal Concepts I  G  2
Periodontal disease assessment, classification, epidemiology, etiology & pathogenesis.

8305 Periodontal Concepts II  G  2
Periodontal diseases and conditions, and risk assessment.

8306 Periodontal Concepts III  G  ½
Periodontal disease risk assessment.

8307 Periodontal Concepts IV  G  2
Periodontal disease therapy and patient management.

8308 Periodontal Concepts V  G  2
Periodontal disease therapy and patient management.

8310 Introduction to Implants  G  1½
Biological and clinical considerations for dental implant therapy.

8410 Introduction to Removable Prosthodontics  G  1
Diagnosis and treatment planning for edentulous patients. This course is graded S/U.

8412 Occlusal Schemes for Complete Prostheses  G  2
Occlusal scheme treatment options for edentulous patients. Includes laboratory component.

8413 Removable Prosthodontics Design and Fabrication  G  1
Occlusal and laboratory procedures associated with designing removable prosthodontics for edentulous patients. Includes laboratory component.

8421 Fixed Prosthodontics and Diagnostic Procedures  G  1
Diagnostic Procedures and treatment options for fixed oral rehabilitation including mandibular movement studies. Includes laboratory component.

8422 Occlusal Schemes and Morphology For Fixed Prosthetics  G  2
Dentate occlusal schemes, static tooth contacts, excursive tooth contacts. Includes laboratory component.

8423 Fixed Prosthodontics Fabrication Techniques for Alloy Restorations  G  1
Introduction to standards for fixed prosthodontic restorations. Includes laboratory component.

8424 Fixed Prosthodontics Fabrication Techniques for Metal-Ceramic Restorations  G  1
Material science principles of porcelain metal bond and procedures for porcelain application. Topics also include shade selection and correction. Includes laboratory component.

8437 Implant Interdisciplinary Lectures  G  2
Overview of the way in which periodontists, prosthodontists, oral surgeons and orthodontists work together to provide care for dental implant patients. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

8460 Maxillofacial Prosthodontics Introduction  G  1
Introduction to maxillofacial prosthodontics including types of defects, prostheses and their principles of design and issues related to oncologic therapy.

8466 Maxillofacial Prosthodontics Literature Review  G  1
Review of literature related to maxillofacial prosthodontics including critical assessment of study validity and evidence based treatment decisions. Repeatable to a maximum of 10 cr hrs.

8471 Dental Materials and Polymers  G  1
Overview of evidence based treatment decisions related to the use of dental alloys and polymers. Repeatable to a maximum of 10 cr hrs.

8472 Dental Materials: Ceramics and Polymers  G  1
This course presents basic scientific and engineering information on polymeric dental materials and ceramic dental materials. The focus will be on understanding the basic physical, mechanical and biological properties of these materials. Each course session will start with a lecture and conclude with presentation and discussion of current literature. Repeatable to a maximum of 3 cr hrs.

8474 Pharmacology and TMD for Dental Specialists  G  2
Overview of Pharmacology for students in Advanced Dental Specialty Education Programs with an emphasis on drug interactions. Impact of Temporomandibular Disorders on dental treatment from the perspective of structure and function. This course is progress graded (S/U).

8600 Advanced Endodontics  G  1 - 5
Advanced endodontic topics. May also include literature review and national examination review. Repeatable to a maximum of 50 cr hrs or 50 completions.

8601 Oral Pathology I  G  ½
Review and discussion of oral management and prognosis of selected developmental, inflammatory, immunologically-mediated and infectious diseases. Repeatable to a maximum of 5 cr hrs.

8602 Oral Pathology II  G  2
Review and detailed discussion of oral manifestations, etiology, pathogenesis, management and prognosis of selected neoplasms, bone disorders and additional conditions of immunologic, salivary and odontogenic origin. Repeatable to a maximum of 20 cr hrs.

8603 Oral Pathology for Periodontists  G  1
Review and discussion of oral and systemic conditions that arise in or affect the jaws and particularly the alveolar or periodontal hard and soft tissues. Repeatable to a maximum of 10 cr hrs.

8635 Diagnostic Histopathology  G  ½ - 2
Daily review of oral biopsy laboratory service materials, including microscopic differential diagnosis, case management and final diagnosis. Repeatable to a maximum of 20 cr hrs or 20 completions. This course is graded S/U.

8650 Neoplasms  G  ½ - 2
Specialist level review and discussion of neoplastic disease. Repeatable to a maximum of 20 cr hrs.

8703 Children with Disabilities and Chronic Illnesses  G  1½
Management of the oral health of patients with special health care needs. Repeatable to a maximum of 15 cr hrs.

8704 Pediatric Dentistry Behavior Issues  G  1
Basic principles and theories of child development and the age-appropriate behavior responses in the dental setting. Repeatable to a maximum of 10 cr hrs.

8705 Pediatric Dentistry Restorative Treatment  G  1
Restorative and prosthetic techniques and materials for the primary, mixed and permanent dentitions. Repeatable to a maximum of 10 cr hrs.

8706 Pediatric Dentistry Pulp and Trauma Treatment  G  ½ - 1
Evaluation, diagnosis, and management of the pulpal, periodontal and associated soft tissues following traumatic injury. Repeatable to a maximum of 10 cr hrs.

8707 Pediatric Dentistry Sedation  G  ½ - 2
The principles and objectives of conscious sedation, deep sedation and general anesthesia as behavior management techniques, including indications and contraindications for their use. Repeatable to a maximum of 20 cr hrs or 20 completions.

8708 Pediatric Dentistry Cariology  G  ½ - ½
The scientific basis for the prevention and treatment of dental caries and periodontal diseases. Repeatable to a maximum of 15 cr hrs.

8709 Pediatric Dentistry Dental Public Health and Advocacy  G  ½ - 2
Introduction of the concepts and techniques of disease prevention and health promotion in dentistry and health. In-depth advocacy training with hands-on exercises. Repeatable to a maximum of 20 cr hrs.

8710 Graduate Pediatric Oral Pathology  G  D  1
Oral Pathology for Pediatric Dentists. Repeatable to a maximum of 5 cr hrs.

8711 Management of a Contemporary Private Practice  G  ½ - 1½
Dent 8711 includes lecture sessions, seminars, and visits to dental practices in the Central Ohio area. Lectures and seminars will focus on contemporary private practice. Areas of focus will include ethical reasoning, informed consent issues, liability mitigation, collaboration with dental specialties and medical specialties, purchasing of a practice, dental staff management, and value-based care. Repeatable to a maximum of 1.5 cr hrs or 2 completions.

8840 Current Issues in Oral Biology  G  ½ - 2
Didactic overview of current areas of health research. Repeatable to a maximum of 40 cr hrs or 20 completions. This course is graded S/U.

8993 Individual Studies in Advanced Dentistry  G  ½ - 12
Advanced individual studies in any of the recognized fields of dentistry. Repeatable.

8999 Research in Dentistry  G  ½ - 12
Research for thesis purposes only. Repeatable. This course is graded S/U.
Design Fundamentals I  U  3
Introduction to form, organizational structures and problem solving in the context of basic 2D design.
Concur: 2310.

Design Fundamentals III  U  3
Application of acquired skills and knowledge of visual language and spatial constructs to generate design concepts in a given context.

Visual Principles and Techniques I  U  3
Skill building in using drawing to observe, see, record and communicate characteristics of subjects, objects, information, environments, experiences and interactions.
Concur: 2110.

Visual Principles and Techniques III  U  3
Skills and techniques mix media that assist in interpreting, translating and generating visual narratives that reveal relationships among subjects, objects, information, environments, experience and interactions.

Introduction to Design Practice  U  3
Introduction to theory, rationale, practice, and societal impact of design; design process, critical issues, relationship to the environment. Design Minor and Entrepreneurship and Innovation Minor students may register without prepracs or corequisites.
Concur: 2110, 2120, 2310, and 2320.

Design History  U  3
A history of design as affected by technology, science, and cultural world view.
Prereq: 2110, 2120, 2310, 2320, and 2700, or minor in Design. Concur: 2130, 2140, 2330, and 2340, or minor in Design.

Introduction to Industrial Design I  U  3
Introduction to divergent thinking strategies including design research, observation, abstraction, evaluation and communication in the context of Industrial Design.
Prereq: Enrollment in Design major, or permission of instructor. Concur: 3200, 3301, and 3400. Not open to students with credit for 262.04.

Introduction to Industrial Design II  U  3
The study of the relationships of form, function and material within the context of Interior Design.
Prereq: Enrollment in Design major, or permission of instructor. Concur: 3200, 3302, and 3400. Not open to students with credit for 262.06.

Introduction to Visual Communication Design I  U  3
Design and application of graphic systems in the production of visual communications within frameworks of theories of communication and signs.
Prereq: Enrollment in Design major, or permission of instructor. Concur: 3200, 3400, and 3503. Not open to students with credit for 262.02.

Introduction to Game Design  U  3
Introduction to Game Design introduces students to the principles of game design and provides opportunities for them to be put into practice using analog materials and methods. Students explore what motivates play, risk-taking and reward systems, and the visual design of games for serious applications and leisure. Create, test, and play games developed in the course.

Exploring Design Thinking  U  3
An overview of concepts, processes and modes of identifying problems and proposing effective solutions from a design-oriented perspective.
Prereq: Not open to students with credit for 230.

Introduction to Industrial Design II  U  3
Application of divergent thinking strategies including design research, manufacturing, evaluation and digital communication in the context of Industrial Design.
Prereq: 3101, and enrollment in Design major, or permission of instructor. Concur: 3450 and 3550. Not open to students with credit for 460.04.

Introduction to Interior Design II  U  3
The study of the relationship between the user and spatial form, function and material within the context of Interior Design.
Prereq: 3102, and enrollment in Design major, or permission of instructor. Concur: 3450 and 3552. Not open to students with credit for 460.08.

Introduction to Visual Communication Design II  U  3
Design and application of typographic systems in the production of visual communications within frameworks of theories of communication.
Prereq: 3103, and enrollment in Design major, or permission of instructor. Concur: 3450 and 3550. Not open to students with credit for 460.02.

Design Research I  U  3
Introduction to techniques and methods of evaluative research.
Prereq: Enrollment in Design major, or permission of instructor. Concur: 3101, 3301, and 3400; or 3102, 3302, and 3400; or 3103, 3400, and 3503. Not open to students with credit for 555.

Visualization Strategies for Industrial Design I  U  3
Skill development in using freehand sketching for rapid concept generation, form development and communication in the context of Industrial Design.
Prereq: Enrollment in Design major, or permission of instructor. Concur: 3101, 3200, and 3400. Not open to students with credit for 501.

Visualization as Thinking  U  3
An overview of concepts, processes and modes of communicating with visual media to effectively generate design proposals.

Design Media I for Industrial Design  U  3
Introductory-level digital, three-dimensional modeling and visualization strategies for Industrial Design.
Prereq: Enrollment in Design major, or permission of instructor. Concur: 3101, 3200, and 3301; or 3102, 3200, and 3302; or 3103, 3200, and 3503. Not open to students with credit for 3400, 3400.02, or 3400.03.

Design Media I for Interior Design  U  3
Introductory-level digital, three-dimensional modeling and visualization strategies for Interior Design.
Prereq: Enrollment in Design major, or permission of instructor. Concur: 3101, 3200, and 3301; or 3102, 3200, and 3302; or 3103, 3200, and 3503. Not open to students with credit for 3400, 3400.01, or 3400.03.

Design Media I for Visual Communication Design  U  3
Introductory-level digital, user-interface and user-experience strategies for Visual Communication Design.
Prereq: Enrollment in Design major, or permission of instructor. Concur: 3101, 3200, and 3301; or 3102, 3200, and 3302; or 3103, 3200, and 3503. Not open to students with credit for 3400, 3400.01, or 3400.02.

Design Media II for Industrial Design  U  3
Intermediate-level digital, three-dimensional modeling and visualization strategies for Industrial Design.
Prereq: 3400.01, and enrollment in Design major, or permission of instructor. Concur: 3151 and 3550.01; or 3152 and 3552; or 3153 and 3550.01. Not open to students with credit for 3450, 3450.02, or 3450.03.

Design Media II for Interior Design  U  3
Intermediate-level digital, three-dimensional modeling and visualization strategies for Interior Design.
Prereq: 3400.02, and enrollment in Design major, or permission of instructor. Concur: 3151 and 3550.02; or 3152 and 3552; or 3153 and 3550.02. Not open to students with credit for 3450, 3450.01, or 3450.03.

Design Media II for Visual Communication Design  U  3
Prereq: 3400.03, and enrollment in Design major, or permission of instructor. Concur: 3151 and 3550.03; or 3152 and 3552; or 3153 and 3550.03. Not open to students with credit for 3450, 3450.01, or 3450.02.

Typographic Design  U  3
Introduction to basic two- and three-dimensional practices in visual communication design; emphasis on typographic design and systematic method and research techniques.
Prereq: Enrollment in Design major, or permission of instructor. Concur: 3103, 3200, and 3400. Not open to students with credit for 258.

Presentation as Thinking  U  3
An overview of concepts, processes and modes of presenting information to create effective printed and digital communications.

Materials, Process, and Production for Industrial Design  U  3
An overview of current and emerging materials and manufacturing processes commonly applied in production for Industrial Design.
Prereq: Enrollment in Design major, or permission of instructor. Concur: 3151 and 3450.01; or 3153 and 3450.01. Not open to students with credit for 3550 (254), 3550.02, or 3550.03.

Materials, Process, and Production for Interior Design  U  3
An overview of current and emerging materials and manufacturing processes commonly applied in production for Interior Design.
Prereq: Enrollment in Design major, or permission of instructor. Concur: 3151 and 3450.02; or 3153 and 3450.02. Not open to students with credit for 3550 (254), 3550.01, or 3550.03.

Materials, Process, and Production for Visual Communication Design  U  3
An overview of current and emerging materials and manufacturing processes commonly applied in production for Visual Communication Design.
Prereq: Enrollment in Design major, or permission of instructor. Concur: 3151 and 3450.03; or 3153 and 3450.03. Not open to students with credit for 3550 (254), 3550.01, or 3550.02.

Interior Design Technology I  U  3
Principles of contract documentation, laws, ethics, codes, standards, guidelines and sustainable practices within the context of Interior Design.
Prereq: Enrollment in Design major, or permission of instructor. Concur: 3152 and 3450. Not open to students with credit for 525.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
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<tbody>
<tr>
<td>4101</td>
<td>Intermediate Industrial Design I</td>
<td>U 3</td>
<td>Introduction to problem and opportunity identification in the context of product design. Experience with evaluative research methods and product design development process at the intermediate level. Prereq: 3151, and enrollment in Design major; or permission of instructor. Concur: 4200 and 4400. Not open to students with credit for 461.04.</td>
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<tr>
<td>4102</td>
<td>Intermediate Interior Design I</td>
<td>U 3</td>
<td>Principles of space organization with FF&amp;E (furniture, fixtures and equipment); the study of human-interior product interface relationships. Prereq: 3152, and enrollment in Design major; or permission of instructor. Concur: 4200, 4302, and 4502. Not open to students with credit for 461.08.</td>
</tr>
<tr>
<td>4103</td>
<td>Intermediate Visual Communication Design I</td>
<td>U 3</td>
<td>Design and application of information systems in the production of visual communications within frameworks of theories of communication. Prereq: 3153, and enrollment in Design major; or permission of instructor. Concur: 4200 and 4400. Not open to students with credit for 461.02.</td>
</tr>
<tr>
<td>4104</td>
<td>Intermediate Game Design I</td>
<td>U 3</td>
<td>Intermediate Game Design I introduces students to concepts for designing and prototyping digital games for entertainment, learning and social good. Students create, test, and play screen-based games developed in the course. Prereq: 3104.</td>
</tr>
<tr>
<td>4151</td>
<td>Intermediate Industrial Design II</td>
<td>U 3</td>
<td>Introduction to problem and opportunity identification in the context of experience design. Experience with generative research methods and design development process at the intermediate level. Prereq: 4101, and enrollment in Design major; or permission of instructor. Concur: 4650 and 4750. Not open to students with credit for 462.04.</td>
</tr>
<tr>
<td>4152</td>
<td>Intermediate Interior Design II</td>
<td>U 3</td>
<td>Principles of order, spatial sequence and connectivity; the study of medium size space organization and interior and exterior design correlations. Prereq: 4102, and enrollment in Design major; or permission of instructor. Concur: 4650 and 4750. Not open to students with credit for 462.08.</td>
</tr>
<tr>
<td>4153</td>
<td>Intermediate Visual Communication Design II</td>
<td>U 3</td>
<td>Design and application of graphic form explorations that emphasize seeing, interpreting, manipulating, composing, and creating visual communication signs and messages. Prereq: 4103, and enrollment in Design major; or permission of instructor. Concur: 4650 and 4750. Not open to students with credit for 462.02.</td>
</tr>
<tr>
<td>4154</td>
<td>Intermediate Game Design II</td>
<td>U 3</td>
<td>Intermediate Game Design II introduces students to concepts for designing and producing fun and serious games and apps that include networked multi-player formats and mobile devices. Students create, test, and play mobile games developed in the course. Prereq: 4104.</td>
</tr>
<tr>
<td>4200</td>
<td>Design Research II</td>
<td>U 3</td>
<td>Introduction to tools techniques and methods of multidisciplinary research. Prereq: 3200, and enrollment in Design major; or permission of instructor. Concur: 4101 and 4400; or 4102, 4105, and 4502; or 4103 and 4400. Not open to students with credit for 554.</td>
</tr>
<tr>
<td>4400.01</td>
<td>Design Media III for Industrial Design</td>
<td>U 3</td>
<td>Time-based media and storytelling strategies for Industrial Design. Prereq: 3450.01, and enrollment in Design major; or permission of instructor. Concur: 4101 and 4200; or 4103 and 4200. Not open to students with credit for 4400, 4400.02, or 4400.03.</td>
</tr>
<tr>
<td>4400.02</td>
<td>Design Media III for Interior Design</td>
<td>U 3</td>
<td>Time-based media and storytelling strategies for Interior Design. Prereq: 3450.02, and enrollment in Design major; or permission of instructor. Concur: 4101 and 4200; or 4103 and 4200. Not open to students with credit for 4400, 4400.01, or 4400.03.</td>
</tr>
<tr>
<td>4400.03</td>
<td>Design Media III for Visual Communication Design</td>
<td>U 3</td>
<td>Time-based media and storytelling strategies for Visual Communication Design. Prereq: 3450.03, and enrollment in Design major; or permission of instructor. Concur: 4101 and 4200; or 4103 and 4200. Not open to students with credit for 4400, 4400.01, or 4400.02.</td>
</tr>
<tr>
<td>4405</td>
<td>Design Media for Non-Majors</td>
<td>U 3</td>
<td>The application of electronic media technologies to design content. Prereq: 3105, 3305, or 3505. Not open to students with credit for 320.</td>
</tr>
<tr>
<td>4502</td>
<td>Interior Design Technology II</td>
<td>U 3</td>
<td>An overview of current and emerging materials, construction methods and manufacturing processes in Interior Design. Prereq: 3552, and enrollment in Design major; or permission of instructor. Concur: 4102, 4200, and 4302. Not open to students with credit for 525.</td>
</tr>
<tr>
<td>4505</td>
<td>3D Visualization</td>
<td>U 3</td>
<td>Concepts of 3D modeling, rendering and animation for visualizing design forms. Prereq: 3305. Not open to students with credit for 571.</td>
</tr>
<tr>
<td>4650</td>
<td>Collaborative Design</td>
<td>U 3</td>
<td>Interdisciplinary knowledge and problems examined and discussed in the context of social responsibility (global and local). Prereq: Enrollment in Design major, or permission of instructor. Concur: 4151 and 4750; or 4152 and 4750; or 4153 and 4750. Not open to students with credit for 760.</td>
</tr>
<tr>
<td>4750</td>
<td>Professional Practices</td>
<td>U 3</td>
<td>Investigation of the administrative and legal aspects of the design profession contrasting the private firm with corporate and free-lance practices. Prereq: Enrollment in Design major, or permission of instructor. Concur: 4151 and 4650; or 4152 and 4650; or 4153 and 4650. Not open to students with credit for 656.</td>
</tr>
<tr>
<td>4797</td>
<td>Study at a Foreign Institution</td>
<td>U 6</td>
<td>A study abroad experience at a foreign institution approved by the Department of Design. Prereq: Enrollment in Design major, or permission of instructor. Not open to students with credit for 697.</td>
</tr>
<tr>
<td>499B</td>
<td>Undergraduate Scholarship: Research and Creative Activity in Design</td>
<td>U 1 - 4</td>
<td>Undergraduate research and creative activities in varying topics. Prereq: Enrollment in Design major, or permission of instructor. Repeatable to a maximum of 4 cr hrs or 2 completions.</td>
</tr>
<tr>
<td>499BH</td>
<td>Undergraduate Scholarship: Honors Research and Creative Activity in Design</td>
<td>U 1 - 4</td>
<td>Undergraduate Honors research and creative activities in varying topics. Prereq: Honors standing, and enrollment in Design major; or permission of instructor. Repeatable to a maximum of 4 cr hrs or 2 completions.</td>
</tr>
<tr>
<td>4999</td>
<td>Undergraduate Scholarship: Thesis Research and Creative Activity in Design</td>
<td>U 1 - 4</td>
<td>Undergraduate thesis research and creative activities in varying topics. Prereq: Enrollment in Design major, or permission of instructor. Repeatable to a maximum of 4 cr hrs or 2 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>4999H</td>
<td>Undergraduate Scholarship: Honors Thesis Research and Creative Activity in Design</td>
<td>U 1 - 4</td>
<td>Undergraduate Honors thesis research and creative activities in varying topics. Prereq: Honors standing, and enrollment in Design major, or permission of instructor. Repeatable to a maximum of 4 cr hrs or 2 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>5101</td>
<td>Advanced Industrial Design I</td>
<td>U G 3</td>
<td>Application of problem and opportunity identification in the context of a specific client organization needs. Prereq: 4101, or Grad standing, or enrollment in Design major, or permission of instructor. Concur: 5200 and 5301. Not open to students with credit for 660.04.</td>
</tr>
<tr>
<td>5102</td>
<td>Advanced Interior Design I</td>
<td>U G 3</td>
<td>Principles of organizational strategy and interior identity development addressing the physical, social, and psychological context of work, leisure, and learning environments. Prereq: 4102, or Grad standing, or enrollment in Design major, or permission of instructor. Concur: 5200 and 5502. Not open to students with credit for 460.08.</td>
</tr>
<tr>
<td>5103</td>
<td>Advanced Visual Communication Design I</td>
<td>U G 3</td>
<td>Application of planning, analyzing, and designing in two- or three-dimensional visual communication systems; emphasis on application of design research, strategic thinking, creative concepts, and graphic implementation. Prereq: 4103, or Grad standing, or enrollment in Design major, or permission of instructor. Concur: 5200 and 5800. Not open to students with credit for 660.02.</td>
</tr>
<tr>
<td>5151</td>
<td>Advanced Industrial Design II</td>
<td>U G 3</td>
<td>A competency with tools, technologies, skills and materials in the exploration, creation, and production of products, artifacts, environments, systems, communication solutions and services. Prereq: 5101, or Grad standing, or enrollment in Design major, or permission of instructor. Concur: 5800. Not open to students with credit for 661.04.</td>
</tr>
<tr>
<td>5152</td>
<td>Advanced Interior Design II</td>
<td>U G 3</td>
<td>Student develops project that applies principles of organizational strategy and interior identity development addressing the physical, social, and psychological context of work, leisure, and learning environments. Prereq: 5102, or Grad standing or enrollment in Design major, or permission of instructor. Concur: 5552. Not open to students with credit for 661.08.</td>
</tr>
<tr>
<td>5153</td>
<td>Advanced Visual Communication Design II</td>
<td>U G 3</td>
<td>Apply design research, problem definitions, concept development, and implementation approaches in creating comprehensive projects that are relevant to proposed subject, design objectives, and targeted audiences. Prereq: 5103, or Grad standing, or enrollment in Design major, or permission of instructor. Concur: 5453. Not open to students with credit for 661.02.</td>
</tr>
<tr>
<td>5191</td>
<td>Internship</td>
<td>U G 1½ - 9</td>
<td>Field application of design in a capacity requiring a close working relationship within a professional environment. Prereq: Grad standing, or enrollment in Design major; or permission of instructor. Repeatable to a maximum of 27 cr hrs or 3 completions.</td>
</tr>
</tbody>
</table>
5193 Individual Studies U G 3 - 9
Advanced study for students in specialized programs.
Prereq: Enrollment in Design major, or permission of instructor. Not open to students with credit for 5194. Repeatable to a maximum of 27 cr hrs or 3 completions.

5194 Group Studies U G 3 - 9
Group studies for students in specialized programs.
Prereq: Grad standing, or enrollment in Design major, or permission of instructor. Not open to students with credit for 694. Repeatable to a maximum of 27 cr hrs or 3 completions.

5200.01 Design Research II for Industrial Design U G 3
Addresses design opportunities, including the skills of problem identification, formulation, qualitative and quantitative research, analysis, synthesis, and project proposals for Industrial Design.
Prereq: 4200, and Design major; or Grad standing; or permission of instructor. Concur: 5010 and 5301; or 5102 and 5502; or 5103 and 5800.01. Not open to students with credit for 5200, 5200.02, 5200.03, 662.02, 662.04, or 662.08.

5200.02 Design Research II for Interior Design U G 3
Addresses design opportunities, including the skills of problem identification, formulation, qualitative and quantitative research, analysis, synthesis, and project proposals for Interior Design.
Prereq: 4200, and Design major; or Grad standing; or permission of instructor. Concur: 5010 and 5301; or 5102 and 5502; or 5103 and 5800.01. Not open to students with credit for 5200, 5200.01, 5200.03, 662.02, 662.04, or 662.08.

5200.03 Design Research II for Visual Communication Design U G 3
Addresses design opportunities, including the skills of problem identification, formulation, qualitative and quantitative research, analysis, synthesis, and project proposals for Visual Communication Design.
Prereq: 4200, and Design major; or Grad standing; or permission of instructor. Concur: 5010 and 5301; or 5102 and 5502; or 5103 and 5800.01. Not open to students with credit for 5200, 5200.01, 5200.02, 5200.03, 662.02, 662.04, or 662.08.

5301 Visualization Strategies for Industrial Design II U G 3
Design and application of information systems in the production of visual communications within frameworks of Design Research and Industrial Design.
Prereq: 3301, or Grad standing, or enrollment in Design major, or permission of instructor. Concur: 5102 and 5200. Not open to students with credit for 552.

5453 Design Media IV for Visual Communication Design U G 3
Advanced-level digital, user-interface and user-experience strategies for Visual Communication Design.
Prereq: 4400, or Grad standing, or enrollment in Design major, or permission of instructor. Concur: 5153.

5502 Interior Design Technology III U G 3
Principles of environmental control within the context of Interior Design.
Prereq: 5101, or Grad standing, or enrollment in Design major, or permission of instructor. Concur: 5800. Not open to students with credit for 524.

5505 Information Design U G 3
Design principles related to visualizing quantitative information, processes and systems.
Prereq: Not open to students with credit for 340.

5552 Interior Technology IV U G 3
Principles of material specifications, liability, contracts and bidding documentation within the context of Interior Design.
Prereq: 5502, or Grad standing, or enrollment in Design major, or permission of instructor. Concur: 5152. Not open to students with credit for 523.

5600S Design Matters U G 3
Students in this interdisciplinary design/build studio have the opportunity to work on site in a collaborative design environment with a local non-profit organization.
Prereq: Enrollment in Design major, or permission of instructor. Not open to students with credit for 553S.

5650 Advanced Collaborative Design U G 3
Interdisciplinary knowledge and problems examined and discussed in the context of social responsibility (global and local).
Prereq: Enrollment in Design major, or permission of instructor. Concur: 5301; or 5552 and 4760; or 5443.

5750 Advanced Design History: Interiors, Contents, Communication, and Culture U G 3
Advanced study of the history of the designed environment, product, and communication systems.

5798 Study Tour U G 3 - 9
Specific content, location, term(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Grad standing, Design majors only, or permission of instructor. Not open to students with credit for 698.01 or 698.02. Repeatable to a maximum of 9 cr hrs or 2 completions.

5800.01 Design Seminar for Industrial Design U G 3
Investigation of issues and inquiry into topics of relevance to design; group discussions and analysis of events, processes, manifestations and procedures in Industrial Design.
Prereq: Grad standing, or enrollment in Design major; or permission of instructor. Concur: 5151, or 5103 and 5200.01. Not open to students with credit for 5800 (780), 5800.02, or 5800.03.

5800.02 Design Seminar for Interior Design U G 3
Investigation of issues and inquiry into topics of relevance to design; group discussions and analysis of events, processes, manifestations and procedures in Interior Design.
Prereq: Grad standing, or enrollment in Design major; or permission of instructor. Concur: 5151, or 5103 and 5200.02. Not open to students with credit for 5800 (780), 5800.01, or 5800.03.

5800.03 Design Seminar for Visual Communication Design U G 3
Investigation of issues and inquiry into topics of relevance to design; group discussions and analysis of events, processes, manifestations and procedures in Visual Communication Design.
Prereq: Grad standing, or enrollment in Design major; or permission of instructor. Concur: 5151, or 5103 and 5200.03. Not open to students with credit for 5800 (780), 5800.01, or 5800.02.

6100 Methods and Tools for Conducting Design Research G 3
Hands-on learning experiences in using and analyzing design research methods, tools and techniques, user-centered design research (applied ethnography, contextual inquiry, evaluative research, usability) and generative design research.
Prereq: Grad standing in Design, or permission of instructor. Not open to students with credit for 786. Repeatable to a maximum of 6 cr hrs.

6200 Foundation for Graduate Design Studies G 3
Expectations, orientation, and available resources in the department and university. Historical and contextual groundwork of the discipline of design through the study of a broad range of contemporary and emerging research approaches.
Prereq: Design grad students only, or permission of instructor. Not open to students with credit for 786. Repeatable to a maximum of 6 cr hrs.

6300 Exploration in Graduate Design Studies G 3
Exploration and discovery in future-oriented domains of design practice and research. Students will practice the tools for exploration including reading, writing, making, planning, and reflection in order to establish their own research path.
Prereq: Design grad students only, or permission of instructor. Not open to students with credit for 786. Repeatable to a maximum of 6 cr hrs.

6400 Graduate Design Studio G 3
Hands-on learning experiences in the studio or field. Collaborative teams work to explore, identify and/or solve problems. Topics vary depending on the opportunity for sponsored projects, emerging trends in practice and expertise of instructor.
Prereq: Grad standing in Design, or permission of instructor. Not open to students with credit for 786. Repeatable to a maximum of 18 cr hrs.

6500 Graduate Design Seminar G 3
Reading, thinking, discussing, reflecting, and writing are used to explore topics of relevance. Topics vary depending on emerging trends in design practice and in the world as well as the expertise and research interest of the instructor.
Prereq: Grad standing in Design, or permission of instructor. Not open to students with credit for 786. Repeatable to a maximum of 18 cr hrs.

7193 Individual Studies G ½ - 6
Individual studies.
Prereq: Grad standing in Design, or permission of instructor. Not open to students with credit for 894. Repeatable to a maximum of 6 cr hrs.

7194 Group Studies G 3
Group studies for students in specialized programs.
Prereq: Design grad students only, or permission of instructor. Not open to students with credit for 894. Repeatable to a maximum of 6 cr hrs.

7998 Thesis Project Development G ½ - 6
Development of project outcomes as part of Thesis research.
Prereq: Grad standing in Design, or permission of instructor. Not open to students with credit for 950. Repeatable to a maximum of 18 cr hrs or 6 completions.

7999 Thesis Writing Development G ½ - 6
Development of writing outcomes as part of Thesis research.
Prereq: Grad standing in Design, or permission of instructor. Not open to students with credit for 958. Repeatable to a maximum of 18 cr hrs or 6 completions.

Disability Studies

4998 Undergraduate Research U 1 - 4
Undergraduate research in variable topics related to Disability Studies. Student-initiated projects.
Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded SU.
Undergraduate Honors Research | U | 1 - 4
Undergraduate honors research in variable topics related to Disability Studies. Student-initiated projects.
Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

Undergraduate Research: Thesis | U | 1 - 4
A program of reading, research, writing, and/or creative work arranged for each student, with individual conferences, progress reports, and thesis.
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 4 completions. This course is graded S/U.

Honors Thesis Research | U | 1 - 4
A program of reading, research, writing, and/or creative work arranged for each student, with individual conferences, progress reports, and honors thesis.
Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 12 cr hrs or 4 completions. This course is graded S/U.

Honors Studies Internship | U G | 1 - 3
Offers undergraduate and graduate students the opportunity to work with disability-related organizations on or off campus.
Prereq: English 2277 or Sphring 4510, and permission of instructor who will supervise the internship.
Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

Individual Studies | U G | 1 - 3
Students may register for individual directed study under this number for work not typically offered in courses.
Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

Group Studies | U G | 1 - 3
Students may register for group-directed study under this number for work not normally offered in courses.
Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions.

Introduction to Graduate Study in Disability Studies | G | 3
Introduction to Disability Studies as an interdisciplinary academic field of study; outlines major scholarly perspectives, methodologies, and professional issues in the study of disability.
Prereq: Not open to students with credit for ArtsSci 6700 (700).

Diversity and Identity Studies Workshop | U G | 1 - 3
Students study topics about diversity (race, class, gender, disability, sexuality, etc) in a seminar-like setting, often focused on the work of visiting scholars.
Prereq: Jr or Sr standing, Grad standing, or permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

Planet Earth: How It Works | U | 4
The materials of the Earth’s crust, the processes that produce and modify them, the development of the Earth and its life forms through time, and responsible stewardship of the earth’s resources. Not intended for ASC B.S. students.
Prereq: Not open to students with credit for 1105. This course is available for EM credit. GE nat sci phys course.

Geology of the National Parks | U | 3
Geologic processes, materials, and history revealed in geologic settings of the National Parks. Not intended for ASC BS students.
Prereq: Not open to students with credit for 1102. This course is available for EM credit. GE nat sci phys course.

Field-Based Introduction to Oceanography | U | 2
Origin, development, and structure of ocean basins and their contents; contemporary oceanic processes of geologic significance. Offered full-time for 1 week at Stone Lab.
Prereq: Permission of instructor. Not open to students with credit for EarthSci 107, 206, GeoSci 107, or 206.

Gemstones | U | 3
General introduction to gemstones, including the origin of gems, identification techniques, and the history of important gems. Precious metals are also discussed. Not intended for ASC BS students.
GE nat sci phys course.

History of Life on Earth-Global Change in the Biosphere | U | 3
3.5 billion years of biosphere global change; introduction to major evolutionary and extinction events; processes responsible for change; biosphere, atmosphere, and lithosphere interrelationships.
Prereq: Not open to students with credit for EarthSci 110 or GeoSci 110. This course is available for EM credit. GE nat sci phys course. NS Adms Cond course.

Honors History of Life on Earth-Global Change in the Biosphere | U | 3
3.5 billion years of biosphere global change; introduction to major evolutionary and extinction events; processes responsible for change; and biosphere, atmosphere, and lithosphere interrelationships.
Prereq: Honors standing, or permission of instructor. Not open to students with credit for EarthSci 110, 110H, GeoSci 110, or 119H. GE nat sci phys course. NS Adms Cond course.

The Dynamic Earth | U | 3
This course introduces students to earth sciences. Topics include earth processes and human impacts; the structure and composition of the earth, plate tectonics, rock & water cycles, energy & mineral resources, and climate change.
Before Autumn 2021: GE Physical Science with Lab.
Autumn 2021 and after: GE Physical Science without Lab. Add EarthSci 1200 for lab credit.
Prereq: Math 1075 or above, or ACT Mathematics Subscore of 22 or higher, or Math Placement Level R or better. Not open to students with credit for 1100. This course is available for EM credit. GE nat sci phys course.

Honors The Dynamic Earth | U | 4
Minerals, rocks, and their origin; land forms and how they are produced; structural features of the Earth’s crust.
Prereq: Honors standing, and Math 1075 (104) or above, ACT Mathematics Subscore of 22 or higher, or Math Placement Level R or better; or permission of instructor. Not open to students with credit for EarthSci 1121 (121), 121H, GeoSci 121, or 121H. GE nat sci phys course. NS Adms Cond course.

Natural Hazards | U | 3
Occurrence and causes of earthquakes, volcanoes, and related hazards, and impact on climate, society, and history.
Prereq: Not open to students with credit for EarthSci 151 or GeoSci 151. GE nat sci phys course.

Introduction to Earth Science Laboratory | U | 1
Laboratory application of basic earth sciences principles to the identification and categorization of rocks and minerals, use and construction of maps to solve geological problems, and analysis of Earth’s physical processes. Earth Science 1200 can be taken to fully satisfy the physical science GE requirement with lab when paired with ES 1105, 1108, 1121, 1151, 2203, 2204, 2205, or 2206(S).
Prereq or concur: 1105, 1108, 1121, 1151, 2201, 2204, 2205, or 2206(S).
Not open to students with credit for 1100 or 2122. Not open to students with credit for EarthSci 1121 prior to Au 21. GE nat sci phys course.

Climate Change: Mechanisms, Impacts, and Mitigation | U | 4
Examination of the basic science of climate change, of the ability to make accurate predictions of future climate, and of the implications for global sustainability by combining perspectives from the physical sciences, the biological sciences, and historical study. Team-taught with faculty members in EEOB and History.
Prereq: Not open to students with credit for History 1911 or EEOB 1911. GE historical study and nat sci bio and nat sci phys course. Cross-listed in EEOB and History.

Preparation for Thesis and Careers in the Earth Sciences | U | 1
In this course, students will be 1) exposed to the wide diversity of research in Earth Sciences and potential careers in the Earth Sciences and 2) prepared for the senior thesis, which is a requirement for Earth Sciences BS majors.

Climate and Life Over Billions of Years on Earth | U | 4
Origin and evolution of Earth, including its physical, chemical and biological components; principles of geologic inference and their application to interpreting Earth.
Prereq: Not open to students with credit for 1122. GE nat sci phys course.

Honors Climate and Life Over Billions of Years on Earth | U | 4
Origin and evolution of Earth, including its physical, chemical, and biological components; principles of geologic inference and their application to interpreting Earth.
Prereq: Honors standing, or permission of instructor. Not open to students with credit for 1122 or 1122H. GE nat sci phys course.

Energy and Environment | U | 3
Introduces and examines the fundamentals of energy sources, energy use, energy efficiency, and resulting environmental implications of the various energy supplies.
Prereq: Not open to students with credit for EarthSci 155 or ENR 2155 (155). GE nat sci phys course. Cross-listed in ENR.

Group Studies | U | 1 - 4
Group studies in various fields of the earth sciences.
Prereq: Permission of instructor. Not open to students with 10 cr hrs of EarthSci 294 or GeoSci 294. Repeatable to a maximum of 10 or hrs or 10 completions.

Environmental Geoscience | U | 3
Concepts and challenges of geological hazards and resources, environmental pollution, and health; regional and long-range planning; and global change and sustainability.
Prereq: Not open to students with credit for EarthSci 203 or GeoSci 203. GE nat sci phys course. NS Adms Cond course.

Exploring Water Issues | U | 3
Water on Earth, human impacts, and scientific and technological issues related to water resource development and conservation.
GE nat sci phys course.
2205 The Planets U 3
Survey of the solar system's planets and moons with focus on surface environments, dynamics, and the ability to host life. GE nat sci phy course.

2206 Principles of Oceanography U 3
Introduction to the four basic disciplines of oceanography: geological, chemical, physical, and biological. Reqeuis: Open to students with credit for EarthSci 206 or GeoSci 206. GE nat sci phy course.

2206S Principles of Oceanography (Service-Learning) U 3
Introduction to the four basic disciplines of oceanography: geological, chemical, physical, and biological. Reqeuis: Open to students with credit for 2206. GE nat sci phy course.

2210 Energy, Mineral Resources, and Society U 3
Geoecology, energy distribution, and use of mineral resources critical to society; topics include mineral and fossil fuels, metallic ores, and industrial minerals. Reqeuis: Not open to students with credit for EarthSci 210 or GeoSci 210. GE nat sci phy course. NS Admins Cond course.

2245 Introductory Data Analysis for Earth and Environmental Sciences U 4
Data analysis using cooperative learning environment; topics include data visualization, error analysis, error propagation, probability distributions, hypothesis testing, ANOVA, linear regression, and spatial statistics. Prereq: Math 1151 or above, or concour: Math 1141, or permission of instructor. GE data anly course.

2998 Undergraduate Research in Earth Sciences U 1 - 10
Undergraduate research or creative activities in variable topics. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

2998H Honors Undergrad Research in Earth Sciences U 1 - 10
Honors undergraduate research or creative activities in variable topics. Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 15 credit hours or 15 completions. This course is graded S/U.

3193 Individual Studies U 1 - 3
Special problems in any branch of the earth sciences for which the student has the proper qualifications. Prereq: Permission of instructor. Not open to students with 6 cr hrs of EarthSci 3193 (EarthSci 293) or GeoSci 293. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

3411 Water Security for the 21st Century U 3
Examine the major issues that are contributing to the decline in quantity and quality of global freshwater resources and the resultant environmental and societal impacts. Prereq: EarthSci 2245 (EarthSci 245) or other GE or GE data anly course only, andSoph standing and above. Not open to students with credit for EarthSci 411 or GeoSci 411.

4194 Group Studies U 1 - 4
Group study of special topics in various fields of the earth sciences. Prereq: Permission of instructor. Not open to students with 10 cr hrs for EarthSci 4194 (EarthSci 294) or GeoSci 294. Repeatable to a maximum of 10 cr hrs or 10 completions.

4194H Honors Group Studies U 1 - 4
Group study of special topics in various fields of the earth sciences. Prereq: Honors standing, and permission of instructor. Not open to students with 10 cr hrs for EarthSci 4194 (EarthSci 294) or GeoSci 294. Repeatable to a maximum of 10 cr hrs or 10 completions.

4421 Earth Materials U 3
Internal and external symmetry of minerals; relationship of physical properties to crystal structure; introduction to modem and traditional identification methods; sight identification of about 30 minerals. Prereq or concur: Chem 1210. Not open to students with credit for EarthSci 421, GeoSci 221, or GeoSci 421.

4423 Introductory Petrology U 3
Origin, occurrence, association, and mineral composition of the common rocks; laboratory includes work by megascopic and microscopic methods. Prereq: 1100, 1121, or 1200; and prereq or concur: 4421.

4450 Water, Ice, and Energy in the Earth System U 3
Earth's energy budget and the transfer of water between reservoirs. Processes that regulate water transfer, common measurement approaches, and the importance of water in geological processes, global change, and as a resource. Prereq: 1100, 1105, 1108, 1121, 1151, 2203, 2204, 2205, GeoG 3901, or 5900; and Chem 1210 or Physica 1250; or permission of instructor.

4501 Paleontology U 4
Fundamentals of paleontology and processes responsible for the fossil record. Application of paleontology to geology, evolutionary studies, palaeontolology, paleoenvironmental reconstruction. Prereq: 1122 or 2122, and 3 cr hrs in Biological Sciences.

4502 Stratigraphy and Sedimentation U 4
Principles of, and procedures in, stratigraphy and sedimentation, illustrated by field and laboratory studies of sedimentary rocks. Prereq: 1100, 1121, or 1200; and 122 or 2122.

4530 Structural Geology U 4
An introduction to the principles of rock deformation, the classification and physical origin of rock structures, and coastal tectonic processes. Prereq: 1100 or 1121 or 1200, and Physics 1250.

4560 Applied Geophysics U 3
Methods and techniques of pure and applied geophysics; geological interpretation of geophysical data. Prereq: 1100, 1105, 1108, 1121, 1151, 2203, or 2205; and Math 1141 or 1151 or above; and Physics 1250 or above.

4798 Environmental Sustainability in Costa Rica (Study Tour) U 3
Traditional lectures and a study tour explore the complex relationship between the use and conservation of natural resources and economic development in Costa Rica, especially the role of protected areas in ensuring the country's environmental sustainability. Within the Earth Sciences B.S. degree, this course can only be used in the Earth System Science subprogram to meet the requirements for credits taken outside Earth Sciences. This course cannot be used to meet any other requirements within the Earth Sciences B.S. Prereq: One college-level geology, ecology, biology, or environmental sciences course, and one college-level Spanish course (or excellent achievement in at least three years in high school Spanish); and permission of instructor.

4998 Undergraduate Research in Earth Sciences U 1 - 10
Undergraduate research or creative activities in variable topics. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions for the combination of EarthSc 4998 (EarthSci 699) and GeoSci 699. This course is graded S/U.

4998H Honors Research U 1 - 10
Honors undergraduate research or creative activities in variable topics. Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

4999.01 Undergraduate Research for Thesis in Earth Sciences U 1
Undergraduate research or creative activities in variable topics leading to completion of a B.S. thesis. To be taken during semester when thesis is turned in. Prereq: Sr standing, or permission of instructor. Not open to students with credit for 570.

4999.01H Honors Undergraduate Research for Thesis in Earth Sciences U 1
A program of individual study arranged for students enrolled in the Honors Program with individual conferences and reports; requires presentation and oral defense of an honors thesis. Prereq: Honors standing, and permission of instructor.

4999.02 Undergraduate Research for Thesis in Earth Sciences U 1 - 3
Undergraduate research or creative activities in variable topics leading to completion of a B.S. thesis. Prereq: Sr standing, or permission of instructor. Not open to students with credit for EarthSci 570. Repeatable to a maximum of 10 cr hrs or 5 completions. This course is graded S/U.

4999.02H Honors Undergraduate Research for Thesis in Earth Sciences U 1 - 3
A program of individual study arranged for students enrolled in the Honors Program with individual conferences and reports; requires presentation and oral defense of an honors thesis. Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 10 cr hrs or 5 completions. This course is graded S/U.

5160 Geomicrobiology U 3
The role of microorganisms in shaping our environment through mineralogical and geochemical processes at both local and global scales, in the present day and over geologic time periods. Prereq: Sr or Grad student in School of Earth Sciences, Department of Microbiology, Department of Civil, Environmental, and Geodetic Engineering, or School of Environment and Natural Resources. Not open to students with credit for Microbiol 5160. Cross-listed in Microbiol.

5189.01 Field Geology I U 3
Concentrated training in the basic essentials of field observation and mapping; the work is done in central Utah, with headquarters in Ephraim. Requires full time of student. Prereq: 1100, 1121, or 1200; and 4530 or 6530; and permission of instructor.

5189.02 Field Geology II U 3
Concentrated training in the basic essentials of field observation and mapping; the work is done in central Utah, with headquarters in Ephraim. Continuation of 5189.01. Requires full time of student. Prereq or concur: 4421, 4423, and 5189.01.

5189.05 Field Geology for Educators: Lake Erie U 2
Application of geological principles and interpretation of Earth features in selected areas, with related research reports and teaching units. 7 credit hrs.

5189.09 Field Geology for Educators: Costa Rica U 3
Exploration of the complex relationship between the use and conservation of natural resources and economic development in Costa Rica, especially the role of protected areas in ensuring the country's environmental sustainability. Requires full time of student. Prereq: Sr or Grad student in School of Earth Sciences, Department of Microbiology, Department of Civil, Environmental, and Geodetic Engineering, or School of Environment and Natural Resources. Not open to students with credit for Microbiol 5189.09. Cross-listed in Microbiol.

Earth Science 133
134 Earth Science

5193.06 Field Geology for Educators: Unspecified U G 1 - 4
Application of geological principles and interpretation of Earth features in selected areas, with related research reports and teaching units. Field trip and cl. Intended primarily for in-service and pre-service teachers and education majors.
Prereq: EarthSc 1100 (EarthSci100), GeolSci 100 or equiv; and permission of instructor. Not open to students with credit for EarthSci 583.04 or GeolSci 583.04. May not be used to satisfy BS, MS, or PhD degree requirements in EarthSc. Repeatable to a maximum of 6 cr hrs or 3 completions.

5191 Internship in the Earth Sciences U G 1 - 5
Combines experience in earth science policy or practice in a governmental agency, private industry, or nonprofit organization with analysis of that experience.
Prereq: Jr standing or above; and permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

5191.01 Internship in the Earth Sciences, Natural History Museum U G 3
Formal, independent study and practical training in a natural history museum. Students become acquainted with the research, teaching, and outreach activities of a museum, and enhance their knowledge of resources, research methodologies, curatorial procedures, exhibit development, institutional culture, and work environment.
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

5193.02 Individual Studies in Engineering Geology U G 1 - 3
Special problems in any branch of engineering geology for which the student has the proper qualifications.
Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions with 5193 (693) and GeolSci 693. This course is graded S/U.

5193.03 Individual Studies in Earth and Planetary Sciences U G 1 - 3
Special problems in any branch of the earth and planetary sciences for which the student has the proper qualifications.
Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions with 5193 (693) and GeolSci 693. This course is graded S/U.

5193.04 Individual Studies in Field Geology U G 1 - 3
Special problems in any branch of field geology for which the student has the proper qualifications.
Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions with 5193 (693) and GeolSci 693. This course is graded S/U.

5193.05 Individual Studies in Geochemistry U G 1 - 3
Special problems in any branch of geochemistry for which the student has the proper qualifications.
Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions with 5193 (693) and GeolSci 693. This course is graded S/U.

5193.06 Individual Studies in Geomorphology U G 1 - 3
Special problems in any branch of geomorphology for which the student has the proper qualifications.
Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions with 5193 (693) and GeolSci 693. This course is graded S/U.

5193.07 Individual Studies in Geophysics U G 1 - 3
Special problems in any branch of geophysics for which the student has the proper qualifications.
Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions with 5193 (693) and GeolSci 693. This course is graded S/U.

5193.08 Individual Studies in Glaciology U G 1 - 3
Special problems in any branch of glaciology for which the student has the proper qualifications.
Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions for the combination of EarthSc 5193 (EarthSci 693) and GeolSci 693. This course is graded S/U.

5193.09 Individual Studies in History of the Earth Sciences U G 1 - 3
Special problems in any branch of the history of the earth sciences for which the student has the proper qualifications.
Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions for the combination of EarthSc 5193 (EarthSci 693) and GeolSci 693. This course is graded S/U.

5193.10 Individual Studies in Hydrogeology U G 1 - 3
Special problems in any branch of hydrogeology for which the student has the proper qualifications.
Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions for the combination of EarthSc 5193 (EarthSci 693) and GeolSci 693. This course is graded S/U.

5193.11 Individual Studies in Marine Geology, Limnology, and Oceanography U G 1 - 3
Special problems in any branch of marine geology, limnology, or oceanography for which the student has the proper qualifications.
Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions for the combination of EarthSc 5193 (EarthSci 693) and GeolSci 693. This course is graded S/U.

5193.12 Individual Studies in Paleobiology U G 1 - 3
Special problems in any branch of paleobiology for which the student has the proper qualifications.
Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions with 5193 (693) and GeolSci 693. This course is graded S/U.

5193.13 Individual Studies in Petrology and Petrography U G 1 - 3
Special problems in any branch of petrology and petrography for which the student has the proper qualifications.
Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions with 5193 (693) and GeolSci 693. This course is graded S/U.

5193.14 Individual Studies in Remote Sensing and Geographic Information Systems U G 1 - 3
Special problems in any branch of remote sensing and GIS for which the student has the proper qualifications.
Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions with 5193 (693) and GeolSci 693. This course is graded S/U.

5193.15 Individual Studies in Sedimentation U G 1 - 3
Special problems in any branch of sedimentology for which the student has the proper qualifications.
Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions with 5193 (693) and GeolSci 693. This course is graded S/U.

5193.16 Individual Studies in Stratigraphy U G 1 - 3
Special problems in any branch of stratigraphy for which the student has the proper qualifications.
Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions with 5193 (693) and GeolSci 693. This course is graded S/U.

5193.17 Individual Studies in Structural Geology U G 1 - 3
Special problems in any branch of structural geology for which the student has the proper qualifications.
Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions with 5193 (693) and GeolSci 693. This course is graded S/U.

5193.18 Individual Studies in Earth Science Education U G 1 - 3
Special problems in any branch of earth science education for which the student has the proper qualifications.
Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions with 5193 (693) and GeolSci 693. This course is graded S/U.

5193.19 Individual Studies Unspecified U G 1 - 3
Special problems in any branch of the earth sciences for which the student has the proper qualifications.
Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions with 5193 (693) and GeolSci 693. This course is graded S/U.

5193.20 Individual Studies in Global Change and Sustainability U G 1 - 3
Special problems in any topic in global change and sustainability for which the student has the proper qualifications.
Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions with 5193 (693) and GeolSci 693. This course is graded S/U.

5193.21 Individual Studies in Neotectonics U G 1 - 3
Special problems in any branch of neotectonics for which the student has the proper qualifications.
Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions with 5193 (693) and GeolSci 693. This course is graded S/U.

5193.22 Individual Studies in Mineralogy U G 1 - 3
Special problems in any branch of mineralogy for which the student has the proper qualifications.
Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions with 5193 (693) and GeolSci 693. This course is graded S/U.

5193.23 Individual Studies in Mineral Physics U G 1 - 3
Special problems in any branch of mineral physics for which the student has the proper qualifications.
Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions with 5193 (693) and GeolSci 693. This course is graded S/U.

5194 Group Studies U G 1 - 4
Group study of special topics in various fields of the earth sciences.
Prereq: Permission of instructor. Repeatable to a maximum of 15 completions for the combination of 5194 (694) and GeolSci 694.

5203 Geo-environment and Human Health U G 3
Examine geo-environmental processes that are contributing to human health degradation and the resultant societal impacts.
Prereq: EarthSc 2245 (EarthSci 245), or GE data any course, or equiv; and Soph standing or above; or permission of instructor.
5205    Planetary Science          U        G        3
A multidisciplinary approach to planetary science, integrating modern methods with the Earth and Astrophysical Sciences. Team-taught with faculty in Astronomy. Prereq: Math 1152 and a GE Data Analysis course, or permission of instructor. Not open to students with credit for Astron 5205. Cross-listed in Astron.

5206    Advanced Oceanography      U        G        3
Advanced study of geological, chemical, physical, and biological oceanography; their interactions; and their interactions with relevant current issues such as global change modeling, fisheries management, and energy exploration. Prereq: Jr standing or above, and enrollment in any STEM major; or Grad standing; or permission of instructor.

5268    Soils and Climate Change    U        G        3
Soil processes, abrupt climate change, trace gases and their properties, global C cycle, gaseous emissions, C-neutral fuels, carbon sequestration, Kyoto Treaty, trading of C credits. Prereq: Not open to students with credit for ENR 5268. Cross-listed in ENR.

5310    Remote Sensing in the Earth Sciences          U        G        3
The overall learning of geodetic (active) and passive remote sensing technologies and in-depth data analytics of their processing to apply to research in Earth sciences and engineering. This course is focused on students learning the theory and data processing methods to enable the use of contemporary satellite or airborne platform-equipped observations for science and engineering applications. Prereq: 1100, 1155, 1192, 1193, 1203, or 2205; and Math 1141 or 1151 or above; and Physics 1250 or above; or Grad standing; or permission of instructor.

5501    Natural History Museum Data Curation          U        G        3
An introduction to modern curatorial practice in a museum, with a particular emphasis on natural history collection management. Use of public data repository including data acquisition and curation. Process physical specimens and other research materials, and make data available and searchable using electronic means. Prereq: Permission of Instructor.

5550    Geomorphology                  U        G        4
Investigation of the mechanics and chemistry of landscape development; interpretation of materials, processes, types, and evolution of landforms produced under diverse climates. Prereq: 1100 or 1121 or 1203, and 1122 or 2122; or permission of instructor.

5580    Standards-Based Earth Science for Educators          U        G        1 - 5
Examination of selected essential earth science topics through appropriate field, laboratory, and classroom activities. Prereq: 10 hrs in physical or biological sciences with 3 cr hrs of introductory geological sciences recommended; or permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions. May not be used to satisfy BA, BS, MS, or PhD degree requirements in EarthSc.

5602.02 Carbonate Depositional Systems II          U        G        2
The field study of carbonates in a modern setting such as the Bahamas or southern Florida. 7-day field trip preceding or following the semester. Prereq: 5602.01 (602.01), or GeolSci 602.01; and permission of instructor. Not open to students with credit for 602.02 or GeolSci 602.02.

5618    Advanced Historical Geology          U        G        2
Principles of historical-geological analysis and interpretation of Earth's physical, chemical, and biological history. Prereq: EarthSc 4502 or 6502 (EarthSci 502), or GeolSci 502 or equivalent. Repeatable to a maximum of 12 cr hrs with 5618 (618) and GeoSci 618.

5621    Introduction to Geochemistry          U        G        3
Introduction to the chemistry of the solid Earth and hydrosphere describing the processes controlling the distribution of elements. Prereq: Chem 1220 or above; Sr standing in EarthSc (EarthSci) or related field; or permission of instructor. Not open to students with credit for 621 or GeoSci 621.

5622    Stable Isotope Biogeochemistry          U        G        3
Focus on theoretical and applied aspects of stable isotope biogeochemistry in the natural environment with emphasis on carbon, oxygen and nitrogen. Prereq: Sr or Grad standing in any science program; or permission of instructor. Not open to students with credit for EarthSci 622 or GeoSci 622.

5627    Global Biogeochemical Cycles          U        G        3
Examination of processes influencing the cycling of major elements in the environment: anthropogenic alteration of these cycles (e.g. nutrient addition, acid rain, greenhouse gases). Prereq: EarthSci 5621 (EarthSci 621) or GeoSci 621, or permission of instructor. Not open to students with credit for EarthSci 627 or GeoSci 627.

5628    Environmental Isotope Geochemistry          U        G        3
Use of natural and anthropogenic radioactivity and of natural variations in the isotopic compositions of selected elements to study geochemical processes on the Earth's surface. Prereq: EarthSci 5621 (EarthSci 621) or GeoSci 621; or permission of instructor. Not open to students with credit for EarthSci 628 or GeoSci 628.

5629    Principles of Petrology          U        G        3
Application of physics, chemistry, and mathematics to the interpretation of igneous and metamorphic rocks. Prereq: Sr or Grad standing in EarthSc (EarthSci) or related field; or permission of instructor. Not open to students with credit for EarthSci 629 or GeoSci 629.

5641    Geostatistics          U        G        3
Applications of statistical methods to geoscience data, including linear error propagation, least-squares estimation, confidence interval estimation, analysis of variance. Role of computer graphics in data analysis. Prereq: Stat 5301 (528) or equiv. and Math 1152 (153) or above; or permission of instructor. Not open to students with credit for EarthSci 641, GeoSci 641, GeoSciMi 5652 (GeoSciMi 650 or 651), or 7763 (762).

5644    Tectonic Evolution of Continents          U        G        3
Survey of lithotectonic assemblages and structural associations in Archean, Proterozoic, and Phanerozoic orogenic terranes in relation to tectonic models for crustal evolution. Prereq: EarthSc 4423, 6423 (EarthSci 423), or GeoSci 4423, and EarthSci 4502, 6502 (EarthSci 502), or GeoSci 502; or EarthSci 4530, 6530 (EarthSci 530), or GeoSci 530; or permission of instructor. Not open to students with credit for EarthSci 644 or GeoSci 644.

5645    Advanced Structural Geology          U        G        4
Mechanisms of deformation; dynamic and kinematic analysis of rock structures; field and laboratory methods of structural analysis. Prereq: EarthSci 4530 or 5630 (EarthSci 530), or GeoSci 530 or equivalent. Not open to students with credit for EarthSci 645 or GeoSci 645.

5646    Geodynamics          U        G        3
Application of mathematical and physical methods to the solution of geologic problems in heat flow, plate tectonics, interior dynamics, mountain building, ground water, river mechanics. Prereq: EarthSc 4530 or 5630 (EarthSci 530), or GeoSci 530 or equivalent; Math 1152 (153) or above; and Physics 1250 (131) or above; or permission of instructor. Not open to students with credit for EarthSci 646 or GeoSci 646.

5650    Glaciology          U        G        4
The fundamental processes controlling ice flow, glacier mass balance and the interaction of glaciers and ice sheets with the solid earth, ocean and atmosphere. Observational and computational methods are also addressed. Prereq: EarthSci 4450 (EarthSci 450) or permission of instructor. Not open to students with credit for EarthSci 650 or GeoSci 650.

5651    Hydrogeology          U        G        4
Geologic and hydrologic factors controlling the occurrence, movement, storage, and chemical quality of surface water and ground water; exploration, evaluation, development and management of water resources. Prereq: 1100, 1105, 1106, 1121, 1151, 2203, or 2205; and Math 1152 or above.

5655    Land Surface Hydrology          U        G        3
Physical processes of land surface hydrology in the context of the global hydrologic cycle. Consideration of the processes and mechanisms responsible for water and energy fluxes, with examples from various river basins. Prereq: Math 1152 or above, and Physics 1250 or above.

5661    Petroleum Geology          U        G        4
The formation, accumulation, and trapping of oil and natural gas. Geologic source beds and traps; hydrocarbon flow; hydraulic properties of reservoirs and confining units; hydrocarbon chemistry; thin-section analysis of reservoir rocks. Prereq: 4502 or 6502; or permission of instructor.

5663    Global Change and Sustainability in the Earth System          U        G        4
Analysis of Earth systems, global environmental change and options for sustainability. Prereq: Sr or Grad standing, or permission of instructor. Not open to students with credit for EarthSci 663 or GeoSci 663.

5675    Scanning Electron Microscopy          U        G        2
Basic theoretical concepts and practical applications of scanning electron microscopy (SEM). Prereq: Chem 1210 or 1220, or equivalent; or permission of instructor.

5680    Deep Earth Geophysics          U        G        3
Methods and techniques for study of Earth's crust and interior, involving potential fields, seismology, and heat flow. Prereq: Math 1152 (153) or above; and Physics 1251 (133) or above. Not open to students with credit for EarthSci 680 or GeoSci 680.

5687    Borehole Geophysics          U        G        3
Principles and applications of borehole geophysical practices in the energy industry and in scientific drilling. Prereq: 1100, 1105, 1106, 1121, 1151, 2203, or 2205; and Math 1141 or 1151 or above; and Physics 1250 or above.

5718    Aquatic Geochemistry          U        G        3
Examination of the processes that control chemical equilibria in natural waters: acid/base reactions, metal complexation/speciation and oxidation-reduction processes. Intended for students in EarthSci, CivilEn, and the Grad EnvSci program. Prereq: Chem 1220 or above; and Math 1151 or above; or equivalents. Not open to students with credit for EnvEng 5718. Cross-listed in EnvEng.

Earth Science 135
### Environmental Organic Geochemistry

**Course Code:** ENR 5719  
**Credit Hours:** 3  
**Description:** Fate and distribution of organic pollutants in the environment including aqueous solubility, vapor pressure, environmental partition coefficients, and transformation reactions intended for students in EarthSci, CivilEng, and the Grad EnvSci program.  
**Prerequisites:** ENR 5718, and Chem 4200; or permission of instructor. Not open to students with credit for ENR 5719. Cross-listed in EnvEng.

### Quantitative Reservoir Modeling

**Course Code:** ENR 5751  
**Credit Hours:** 4  
**Description:** Principles of analytical and numerical techniques in modeling single- and multiphase flow in gas, oil, and water (aquifer) reservoirs. Development of Matlab code for two- and three-dimensional flow in porous media.  
**Prerequisites:** 2245 and Math 1152, or permission of instructor.

### Field Reflection Seismology

**Course Code:** ENR 5780  
**Credit Hours:** 4  
**Description:** Basics of reflection seismic data processing and interpretation, using petroleum industry standard seismic processing software, hardware, and data.  
**Prerequisites:** 1100, 1105, 1109, 1121, 1151, 2203, or 2205; and Math 1141, or 1151 or above; and Physics 1250 or above.

### Gravity Exploration

**Course Code:** ENR 5781  
**Credit Hours:** 3  
**Description:** Analytical treatment of concepts and methods of gravimetry; introductory theory of gravitational potential; geological interpretation of gravity data; gravity surveying.  
**Prerequisites:** Math 1152 (153) or above, or Grad standing; or permission of instructor. Not open to students with credit for EarthSci 781 or GeoSci 781.

### Antarctica Study Abroad Seminar

**Course Code:** ENR 5790.10  
**Credit Hours:** 1  
**Description:** Pre-departure preparation for Antarctica study abroad. Provides general introduction to the country so that learning opportunities in-country will be maximized. Cannot be used to satisfy M.S. or Ph.D. requirements in Earth Sciences. Within the Earth Sciences B.S. degree, this course can only be used in the Earth System Science subprogram to meet the requirements for credits taken outside Earth Sciences. This course cannot be used to meet any other requirements within the Earth Sciences B.S.  
**Prerequisites:** Acceptance into the Antarctica Study Abroad program. Not open to students with credit for ENR 5790.10. Cross-listed in ENR.

### Study at a Foreign Institution: Antarctica

**Course Code:** ENR 5797.10  
**Credit Hours:** 3  
**Description:** Two weeks of field studies in Antarctica and Ushuaia, Argentina. This course is a collaborative effort between Ohio State, American Universities International Programs, University of Canterbury, New Zealand, and Gateway Antarctica: Centre for Antarctic Studies and Research. Cannot be used to satisfy M.S. or Ph.D. requirements in Earth Sciences. Within the Earth Sciences B.S. degree, this course can only be used in the Earth System Science subprogram to meet the requirements for credits taken outside Earth Sciences. This course cannot be used to meet any other requirements within the Earth Sciences B.S.  
**Concurrent:** ENR 5790.10. Not open to students with credit for ENR 5797.10. Cross-listed in ENR.

### Stratigraphy and Sedimentation

**Course Code:** ENR 6502  
**Credit Hours:** 4  
**Description:** Principles of, and procedures in, stratigraphy and sedimentation, illustrated by field and laboratory studies of sedimentary rocks.  
**Prerequisites:** EarthSci 1121 (EarthSci 1121 or GeoSci 1121) and 1122 (EarthSci 122 or GeoSci 122); not open to students with credit for EarthSci 4502 (EarthSci 502 or GeoSci 502).

### Structural Geology

**Course Code:** ENR 6530  
**Credit Hours:** 4  
**Description:** An introduction to the principles of rock deformation, the classification and physical origin of rock structures, and crustal tectonic processes.  
**Prerequisites:** EarthSci 1121 (EarthSci 1121 or GeoSci 1121), and Physics 1250 (131) or above. Not open to students with credit for 4530 (EarthSci 530 or GeoSci 530).

### Applied Geophysics

**Course Code:** ENR 6560  
**Credit Hours:** 3  
**Description:** Methods and techniques of pure and applied geophysics; geological interpretation of geophysical data.  
**Prerequisites:** EarthSci 1121 (EarthSci 121 or GeoSci 121), Math 1151 (151) or above, and Physics 1250 (131) or above. Not open to students with credit for 4560 (EarthSci 560 or GeoSci 560), or GeoSci 280.

### Paleoclimatology

**Course Code:** ENR 6750  
**Credit Hours:** 4  
**Description:** Examination of climate records in ice, lake, and marine cores, tree rings, corals and historical records for a global perspective of Quaternary climate change.  
**Prerequisites:** Grad standing or permission of instructor. Not open to students with credit for EarthSci 750 or GeoSci 750.

### Research in the Earth Sciences

**Course Code:** ENR 7998  
**Credit Hours:** 1 - 12  
**Type:** Graduate-level research.  
**Prerequisites:** Grad standing in EarthSci or GeoSci. Repeatable. This course is graded S/U.

### Research for Thesis in the Earth Sciences

**Course Code:** ENR 7999  
**Credit Hours:** 1 - 12  
**Type:** Graduate-level research for thesis purposes only.  
**Prerequisites:** Grad standing in EarthSci or GeoSci. Repeatable. This course is graded S/U.

### Seminar in Stratigraphy and Basin Analysis

**Course Code:** ENR 8800  
**Credit Hours:** 1 - 2  
**Description:** Consideration of current and classical problems and procedures in biostratigraphic and lithostratigraphic analysis and synthesis.  
**Prerequisites:** Permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions.

### Seminar in Sedimentology

**Course Code:** ENR 8801  
**Credit Hours:** 1 - 2  
**Description:** Consideration of sedimentation and the structures, petrography, depositional environments, and paleontologic interpretation of sedimentary rocks.  
**Prerequisites:** Permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions.

### Seminar in Geochemistry

**Course Code:** ENR 8821  
**Credit Hours:** 1 - 2  
**Description:** Selected topics in applications of chemistry to earth science problems; geochronology, geochemistry, geochemical cycles, and cosmochemistry.  
**Prerequisites:** Permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions.

### Seminar in MINERALOGY, MINERAL PHYSICS, AND PETROLOGY

**Course Code:** ENR 8850  
**Credit Hours:** 1 - 3  
**Description:** Selected topics in optical mineralogy and igneous, sedimentary, and metamorphic petrology.  
**Prerequisites:** Permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions.

### Seminar in GLACIOLOGY AND GEOMORPHOLOGY

**Course Code:** ENR 8855  
**Credit Hours:** 1 - 3  
**Description:** Selected topics in glaciology, glacial history, and geomorphology.  
**Prerequisites:** Permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions.

### Seminar in Hydrogeology and Oceanography

**Course Code:** ENR 8856  
**Credit Hours:** 1 - 2  
**Description:** Topics in hydrogeology and oceanography, such as ground-water hydrology and hydrodynamics, basin management, water resources, paleohydrology, reef and atoll development, or paleo-oceanography.  
**Prerequisites:** Permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions.

### Proposal Writing and Scientific Communication in Earth Science

**Course Code:** ENR 8870  
**Credit Hours:** 2  
**Description:** Development of scientific communication skills including writing of publications and proposals, oral and poster presentations, and research ethics.  
**Prerequisites:** Grad standing in Earth Sciences or GeodSci. Selection of topics. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

### Research in the Earth Sciences

**Course Code:** ENR 8998  
**Credit Hours:** 3  
**Description:** An introduction to the contemporary and traditional cultures of China, Korea, and Japan taught through readings, films, and discussions.  
**Prerequisites:** Not open to students with credit for 323, CompStd 3673 (323), or RelStds 3673 (323). Cross-listed in RelStds 3673.

### The Buddhist Tradition

**Course Code:** ENR 3223  
**Credit Hours:** 3  
**Description:** History and structure of Buddhism from founding to present in South, Southeast, and East Asia. Emphasis on rituals, beliefs, and local and regional variations. RelStds 3270 recommended.  
**Prerequisites:** Not open to students with credit for 323. CompStd 3673 (323), or RelStds 3673 (323). Cross-listed in RelStds 3673.

### Introducing East Asia through Martial Arts Cinema

**Course Code:** ENR 3446  
**Credit Hours:** 3  
**Description:** Examines martial arts films of East Asia, focusing on their social & cultural functions. Draws heroes amidst losing battles for liberty in authoritarian societies.  
**Prerequisites:** Not open to students with credit for 346. GE VPA course.

### Asian American Film

**Course Code:** ENR 3446  
**Credit Hours:** 3  
**Description:** Introduction to Asian American cinema from the 1960s to the present, including documentaries, feature films, and experimental films.  
**Prerequisites:** Not open to students with credit for 346. GE VPA course.

### Individual Studies

**Course Code:** ENR 4193  
**Credit Hours:** 1 - 3  
**Description:** Directed study to meet individual research needs of students in East Asian studies. Not a substitute for regular language courses.  
**Prerequisites:** Permission of instructor. Repeatable to a maximum of 6 cr hrs or 2 completions.

### Group Studies

**Course Code:** ENR 4194  
**Credit Hours:** 1 - 3  
**Description:** Group investigation of issues in East Asian studies. Varying topics.  
**Prerequisites:** Permission of instructor. Repeatable to a maximum of 6 cr hrs or 2 completions.
4200 Topics in East Asian Culture U 3
In-depth exploration of a theme, issue, or question in East Asian culture broadly conceived.
Topics vary.
Prereq: 1221; or Chinese 2231; or Japanese 2231; or Korean 2231; or Chinese 2451; January 2451; or Korean 2451; or Japanese 2452; or permission of instructor.
Repeatable to a maximum of 6 cr hrs.

5310 Strategies for Performance-Oriented Language Learning: Practicum U G 3
An overview of language-learning strategies and practice in applying them to learning of East Asian languages.
Prereq: Chinese 1102.01, 1102.02, or 4 cr credits of 1102.51; or Japanese 1102.01, 1102.02, or 4 cr credits of 1102.51; or Korean 1102.01, 1102.02, or 4 credits of 1102.51; or permission of instructor. Repeatable to a maximum of 9 cr hrs.

5383 Scripts of East Asia U G 3
A critical survey of writing systems that use Chinese characters, popular and scholarly myths about them, and their impact on the history of ideas.
Prereq: Soph standing in Chinese, Japanese, or Korean, or permission of instructor. Not open to students with credit for 683.

5475 Women Writers, Culture and Society in East Asia U G 3
Close examination of representative works of major women writers from China, Japan, and Korea in the cultural and ideological context of each country. No knowledge of East Asian languages is required. All reading materials are in English.
Prereq: Chinese 2231, 2232, Japanese 2231, or Korean 2231, or at least one literature course at the college level, or permission of instructor. Not open to students with credit for 675.

5797 Study at a Foreign Institution U G 3 - 9
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Prereq: Admission to specific study abroad program that accepts this course. Repeatable to a maximum of 24 cr hrs or 8 completions.

6193 Individual Studies G 1 - 3
Individual investigation of East Asian cultures, languages, and literatures.
Prereq: Permission of department chairperson. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded SU.

6194 Group Studies G 1 - 3
Group investigation of issues in East Asian studies. Varying topics.
Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions.

7700 Learning East Asian Languages in Cross-Cultural Contexts: College Level G 1 - 3
Principles and practices of designing instruction and assessing performances in an East Asian language as a foreign language at post-secondary level American academic institutions.
Concurrent registration in 7703 and 7704 recommended.
Su Sem. Prereq: High-level competence in target East Asian language, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 2 completions. FL Admis Cond course.

7701 Pedagogical Syntax for East Asian Languages G 3
Training in the presentation of grammar in East Asian language classes; special attention given to problems of translating linguistic studies into teachable units.
Au, Sp Sems. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs.

7702 Materials Preparation for East Asian Languages G 3
Preparation of materials for teaching Chinese, Japanese, and Korean. Emphasis on the special problems faced by English-speaking students in learning these languages.
Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs. FL Admis Cond course.

7703 Presentation of East Asian Languages and Cultures G 1 - 2
Preparation and presentation of curriculum and syllabus for East Asian language program and adaptation of learning materials. Concurrent registration in 7701 and 7704 recommended.
Su Sem. Prereq: High-level competency in the target East Asian language, and permission of instructor. Repeatable to a maximum of 4 cr hrs or 2 completions. FL Admis Cond course.

7704 Teaching Practicum in East Asian Languages G 1 - 5
Training as a classroom teacher through practice teaching to students and the observation of classes taught by trainers and master teachers.
Prereq: High-level competence in an East Asian language, and permission of instructor. Repeatable to a maximum of 10 cr hrs or 3 completions. FL Admis Cond course.

7705 Seminar in the Learning of East Asian Languages and Cultures G 3
Critical analysis of insights and theories from various disciplines relevant to the pedagogy of East Asian languages and cultures.
Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs. FL Admis Cond course.

7897 Introduction to Graduate-level East Asian Studies G 1
The origins, development and current state of East Asian Area Studies in the U.S., including its relationship to other intellectual disciplines.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 797, History 7405 (797), or HistArt 8801 (797). This course is graded SU. Cross-listed in History 7405 and HistArt 8801.

8701 Teaching East Asian Languages at the College Level G 3
Techniques of teaching college-level East Asian languages; effective use of teaching, testing, and laboratory materials; observation of a variety of language classes.
Au Sem. Prereq: Permission of instructor. Not open to students with credit for 801.

8780 Research Presentations in East Asian Languages and Literatures G 1 - 3
Research presentations and discussions of specific problems in East Asian languages and literatures.
Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions.

East European Languages and Literatures

5627 Reading Course in a Balkan or East European Language U G 3
Fundamentals of grammar and vocabulary needed for reading a non-Slavic language of Eastern or East Central Europe or the Balkans (e.g., Albanian, Romanian, Estonian, Hungarian, Latvian, or Lithuanian).
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 6 cr hrs.

5787 Study at a Foreign Institution U G 1 - 9
Opportunity to study at an educational institution in East Central, Southeastern, or Eastern Europe and receive OSU credit. Students pay OSU fees, any fees in excess of tuition, travel & subsistence costs.
Prereq: Permission of dept chairperson. Repeatable to a maximum of 36 cr hrs or 9 completions. This course is progress graded.

Economics

1100.01 Current Economic Events in Historical Perspective U 3
Introduction to economic analysis; historical background for interpreting current economic events. Discuss current issues in a historical context, including topics like taxes and unemployment. A one-course introduction to economics.
Prereq: Not open to students with credit for 110.01. GE soc sci human, nat, and econ resources course.

1100.02 Freakonomics U 3
Discuss current social problems and issues within an economics framework, including topics such as job discrimination and integration. A one-course introduction to economics.
Prereq: Not open to students with credit for 110.02. GE soc sci human, nat, and econ resources course.

2001.01 Principles of Microeconomics U 3
Introduction to economic theory: supply and demand for goods, services, and factor inputs; market structure; international trade, the distribution of income. First required course for students planning to take 4000-level courses in Econ.
Prereq: Not open to students with credit for 2001.02, 2001.03H, 200, 200H, or AED 2001 (200). This course is available for EM credit. GE soc sci human, nat, and econ resources course. SS Admis Cond course.

2001.03H Principles of Microeconomics U 3
An advanced introduction to economic theory: supply and demand for goods, services, and factor inputs; market structure; international trade, the distribution of income. First required course for students planning to take 4000-level courses in econ.
Prereq: Honors standing, or permission of instructor. Not open to students with credit for 2001.01, 2001.02 (200), or 200H, and AED 2001 (200) or 200H (200H). GE soc sci human, nat, and econ resources course.

2001.02 Principles of Macroeconomics U 3
Introduction to the theory of national income determination: economic fluctuations; money; government policy; international economics.
Prereq: Not open to students with credit for 2002.02, 2002.03H, 201, or 201H. This course is available for EM credit. GE soc sci orgs and polities course.

2002.03H Principles of Macroeconomics U 3
An advanced introduction to the theory of national income determination: economic fluctuations; money; government policy; international economics.
Prereq: Honors standing, or permission of instructor. Not open to students with credit for 2002.01, 2002.02 (201, 201H). GE soc sci orgs and polities course.

2194 Group Studies U 1 - 5
Current problems not covered in other courses. Credit for Econ 294 counts against hour cap.
Prereq: 2001.01, 2001.02, 2001.03H (200 or 200H), or equiv. Repeatable to a maximum of 7 cr hrs or 2 completions.

2367.02 Current Economic Issues in the United States U 3
Study of problems currently facing the U.S. economy.
Prereq: 2001.01, 2001.02 (200), or 2001.03H (200H), and 2002.01, 2002.02 (201), or 2002.03H (201H), or equiv, and English 1110 (110). Not open to students with credit for 367.02. GE writing and comm: level 2 and soc sci orgs and polities course.
138
3001

Economics
Economy, Polity, and Community

U

3

Examines how different ways of thinking about human nature shape our understanding of
philosophy, politics and economics.
Prereq: Econ 2001.XX or 2002.01 or 2002.03H; and Philos 2400 or PolitSc 2400 or 2400H;
and Econ 5001 or Philos 2500 or 5540 or PolitSc 4553 or 4553H; and Philos 3300; and Econ
3400 or IntStds 3400 or PolitSc 3780 or 3780H; and PolitSc 4280 or 4380. Not open to
students with credit for Philos 3001 or PolitSc 3001. Cross-listed in Philos and PolitSc.
3002

Tradition, Progress, and Utopia

U

3

Examines how different ways of thinking about social and political change shape our
understanding of philosophy, and economics.
Prereq: Econ 2001.XX or 2002.01 or 2002.03H; and Philos 2400 or PolitSc 2400 or 2400H;
and Econ 5001 or Philos 2500 or 5540 or PolitSc 4553 or 4553H; and Philos 3300; and Econ
3400 or IntStds 3400 or PolitSc 3780 or 3780H; and PolitSc 4280 or 4380. Not open to
students with credit for Philos 3002 or PolitSc 3002. Cross-listed in Philos and PolitSc.
3048

Ethics and Social Responsibility in Economic Life

U

3

Examines the role of ethical norms and social constraints in determining economic outcomes.
Prereq: At least one of these courses, 1100.01 (110.01), 1100.02 (110.02), 1100.03 (110.03),
2001.01, 2001.02 (200), 2001.03H (200H), 2002.01 2002.02 (201), or 2002.03H (201H), is
recommended. Not open to students with credit for 348. GE soc sci indivs and groups course.
3400

The Analysis and Display of Data

U

3

Introduction to the analysis of data. Topics include sampling, data collection, probability,
inference, random variables, display of data, correlation, and analysis of variance. This course
does not count toward a course elective for Econ majors.
Prereq: Not open to students with credit for 4400 (444), 5410 (641), 5420 (642), 443, IntStds
3400 (443), Stat 1430 (133), 1450 (145), 2450 (245) or AEDEcon 2005 (205). GE data anly
course. Cross-listed in IntStds.
3820

The Economics of Gender in Labor Markets

U

3

Application of economic analysis to the evolution and economic condition of women and men in
the labor force; occupational distribution and segregation; wage gap; the glass ceiling.
Prereq: 2001.01, 2001.02 (200), or 2001.03H (200H), or equiv. Not open to students with credit
for 482. GE diversity soc div in the US course.
3900.01S The Other Side of the Border: Immigration Economics

U

3

This is a service-learning opportunity with Esperanza International in Tijuana, Mexico. The
course will introduce micro and macroeconomic issues related to immigration. This case study
will focus on the opportunity costs for immigrants, the effects of the flow of money, and the loss
of labor and human capital on economic growth. Students will work with the immigrant
community.
4001.01

Intermediate Microeconomic Theory

U

3

Theory of consumer behavior; theory of the firm; costs and production; factor price
determination; general equilibrium.
open to students with credit for 4001.02 or 4001.03.
4001.02

Intermediate Microeconomic Theory

U

3

Theory of consumer behavior; theory of the firm; costs and production; factor price
determination; general equilibrium. Designates a calculus-based version.
Prereq: 2001.01, 2001.02 (200), or 2001.03H (200H), and 2002.01, 2002.02 (201), or
2002.03H (201H), and Math 1131 (132), 1151 (151), 1152 (152 and 153), 1161 (161 and 162),
2182H (263H), or 4181H (190H) or equiv; or permission of instructor. Not open to students with
credit for 4001.01 (501.01 and 501.02) or 4001.03H.
4001.03

Intermediate Microeconomic Theory

U

3

Theory of consumer behavior; theory of the firm; costs and production; factor price
determination; general equilibrium. Designates an advanced calculus-based version.
Prereq: 2001.01, 2001.02 (200), or 2001.03H (200H), and 2002.01, 2002.02 (201), or
2002.03H (201H), and Math 1131 (132), 1151 (151), 1152 (152 and 153), 1161 (162 and 161),
2182H (263H), or 4181H (H190), or equiv, or permission of instructor. Not open to students
with credit for 4001.01 (501.01) or 4001.02 (501.02).
4002.01

Intermediate Macroeconomic Theory

U

3

Analysis of the determinants of national output; income and employment levels; theory of
economic growth and progressive equilibrium in an economy.
Prereq: 2001.01, 2001.02 (200), or 2001.03H (200H), and 2002.01, 2002.02 (201 or 201H), or
2002.03H, or equiv. Not open to students with credit for 4002.02 (502.01 or 502.02) or
4002.03.
4002.02

Intermediate Macroeconomic Theory

U

3

Analysis of the determinants of national output; income and employment levels; theory of
economic growth and progressive equilibrium in an economy. Designates a calculus-based
version.
Prereq: 2001.01, 2001.02 (200), or 2001.03H (200H), and 2002.01, 2002.02 (201), or
2002.03H (201H), and Math 1131 (132) or 1151 (151), 1152 (152 and 153), 1161 (161 and
162), 2182H (263H), or 4181H (190H), or equiv; or permission of instructor. Not open to
students with credit for 4002.01 (502.01 or 502.02) or 4002.03.

4002.03

Intermediate Macroeconomic Theory

U

3

Analysis of the determinants of national output; income and employment levels; theory of
economic growth and progressive equilibrium in an economy. Designates an advanced
calculus-based version.
Prereq: 2001.01, 2001.02 (200), or 2001.03H (200H), and 2002.01, 2002.02 (201), or
2002.03H (201H), and Math 1152 (152 and 153), 1161 (161 and 162), 2182H (263H), or
4181H (190H), or equiv; or permission of instructor. Not open to students with credit for
4002.01 (502.01) or 4002.02 (502.02).
4050

Experimental Economics

U

3

Introduction to economics as an experimental social science. Students participate in and study
results of economic experiments dealing with markets, individual decision making, and a broad
array of game theoretic economic models.
Prereq: 2001.01, 2001.02, or 2001.03H or equiv.
4050H

Experimental Economics

U

3

Introduction to economics as an experimental social science. Students participate in and study
results of economic experiments dealing with markets, individual decision making, and a broad
array of game theoretic economic models.
Prereq: 4001.01 or 4001.02 or 4001.03, and Stat 1450 or 2450. Not open to students with
credit for 4050.
4130

World Economic Development in Historical Perspective

U

3

A survey of economic development from the middle ages through the 20th century,
emphasizing Europe, Asia and Africa.
Prereq: 2001.01, 2001.02 (200), or 2001.03H (200H), or 2002.01, 2002.02 (201) or 2002.03H
(201H), or equiv. Not open to students with credit for 5130 (614), or 515. GE historical study
and diversity global studies course.
4140

Economic History of the Americas

U

3

A survey of economic development in the Americas emphasizing the United States from
colonial times to the 20th century.
Prereq: 2001.01, 2001.02 (200), or 2001.03H (200H), or 2002.01, 2002.02 (201), or 2002.03H
(201H), or equiv. Not open to students with credit for 5140 (613) or 516. GE historical study
and diversity global studies course.
4191

Internship

U

1-6

Allows students to apply knowledge from their economics courses and learn from hands on
experience in approved positions. Applies toward an Econ 4000-level elective; 3 credit hours
maximum toward major.
Prereq: 2001.01, 2001.02 (200), or 2001.03H (200H), and 2002.01, 2002.02 (201), or
2002.03H (201H), or equiv; and Jr or Sr standing; and enrollment in Econ major; and
permission of department. Not open to students with maximum qtr cr hrs in 589. Repeatable to
a maximum of 6 cr hrs or 2 completions. This course is graded S/U.
4194

Group Studies

U

1 - 10

Intermediate current problems not covered in other courses.
Prereq: 2001.01, 2001.02 (200), or 2001.03H (200H), and 2002.01, 2002.02 (201), or
2002.03H (201H). Credit taken as 594 counts toward hour cap. Repeatable to a maximum of
10 cr hrs or 3 completions.
4200

Money and Banking

U

3

Organization, operation, and economic significance of our monetary and banking system;
special reference to current conditions and problems. Students intending to take 5200 are
encouraged to take it instead.
Prereq: 2001.01, 2001.02 (200), or 2001.03H (200H), and 2002.01, 2002.02 (201), or
2002.03H (201H), or equiv. Not open to students with credit 4200H (520H), 5200, or 520.
4300

Government Finance in the American Economy

U

3

Analysis of fiscal institutions and decision-making in the public sector of the American
economy; budget planning and execution; taxation, debt, and fiscal policy.
Prereq: 2001.01, 2001.02 (200), or 2001.03H (200H), or equiv. Not open to students with credit
for 530.
4310

Local Public Finance

U

3

Financing public services by state/local governments. The fiscal relationship between
state/local governments and the federal government. Apply techniques of economic analysis to
policy issues.
Prereq: 4300 (530), or PubAfrs 7120 (730), or equiv. Not open to students with credit for 531,
or PubAfrs 4310 (531). Cross-listed in PubAfrs.
4320

Public Expenditure and Cost-Benefit Analysis

U

3

Economics of public choice, public goods, non-market allocations, collective decision-making,
and net-benefit maximization for policy majors; case studies and empirical analysis of public
choice problems for policy analysts. Does not count towards units in the economics major.
Prereq: 2001.01, 2001.02 (200), or 2001.03H (200H), or equiv, and enrollment in JGSPA
major. Not open to students with credit for 4300, 4310, or 532.
4400

Elementary Econometrics

U

3

Basic linear regression analysis with applications; hypothesis testing and model specification.
Prereq: 3400, IntStds 3400, Stat 1430 (133), 1450 (145), 2450 (245), or AEDEcon 2005 (205),
or equiv. Not open to students with credit for 5410 (641), 5420 (642), or 444.


4537 Middle Eastern Economic Development U 3
Introduction to current economic issues facing the Middle East; similarities and differences in Middle Eastern countries' growth, inflation, unemployment, fiscal and monetary policy, imports, exports, foreign debt, and exchange rate policy. Prereq: 2001.01, 2001.02 (200), 2001.03H (200H), or ADEEcon 2001 (200), and 2002.01, 2002.02 (201), or 2002.03H (201H), or equiv. Not open to students with credit for 537. ADEEcon 4537 (537), 437, IntStds 4537 (537), or 437. Cross-listed in ADEEcon and IntStds.

4553 Economics of Population U 3
Using economic principles to analyze population growth, fertility, mortality, mating, dating, marriage, teen pregnancy, divorce, and migration. Prereq: 2001.01, 2001.02 (200), 2001.03H (200H), or 2002.01, 2002.02 (201), or 2002.03H (201H). Not open to students with credit for 553.

4560 Cooperation and Conflict in the Global Economy U 3
The economic, social, and political bases for and responses to increasing global economic integration. Prereq: 2001.01, 2001.02 (200), or 2001.03H (200H), and 2002.01, 2002.02 (201), or 2002.03H (201H). Prereq: Jr standing and above. Not open to students with credit for 597.01. GE cross-disciplinary seminar course.

4700 Government and Business U 3
Economic and legal aspects of government regulation of business in the United States; philosophies and concepts of public control; contemporary problems. Students planning on taking 5700 are encouraged to take it instead. Prereq: 2001.01, 2001.02 (200), or 2001.03H (200H), or equiv. Not open to students with credit for 5700 (570), or 570.

4700H Government and Business U 3

497.01 Issues of the Underground Economy U 3

4970 Game Theory in Economics U 3
Introduction to basic data analysis methods used by economists to explain economic determination, employment, unemployment; labor legislation. Students planning on taking 5850 are encouraged to take it instead. Prereq: 2001.01, 2001.02 (200), or 2001.03H (200H), or equiv. Not open to students with credit for 4998H (4998) or max credit in 783H. Repeatable to a maximum of 10 or hrs or 10 completions. This course is graded S/U.

4999H Honors Research in Economics U 1 - 6
Directed research for an economics major; collection and analysis of data and information for a research project. Prereq: Honors standing; and 4001.01 (501.01), 4001.02 (501.02), or 4001.03, and 4002.01 (502.01), 4002.02 (502.02), or 4002.03, or equiv; and permission of instructor. Not open to students with greater than 9 cr hrs in 4998 or max credit in 699. Repeatable to a maximum of 10 or hrs or 2 completions. This course is graded S/U.

5001 Game Theory in Economics U 3
Analysis of behavior in strategic situations - when a person or firm's best action depends on what others do. Prereq: 4001.01 (501.01), 4001.02 (501.02), or 4001.03, and Math 1131 (132), 1151 (151 and 152), 1152 (153), 1181 (161 and 162), or 2182H (283H), or equiv. Not open to students with credit for 601.

5130 Economic History of Western Europe U 4
Survey of economic development of Europe from pre-industrialization to current globalization. Emphasis on critical analysis of long-run factors in economic growth. Prereq: 4400 (444), 5410 (641), or Stat 2450 (245), and Econ 4001.01 (501.01), 4001.02 (502.02), or 4001.03, and 4002.01 (502.01), 4002.02 (502.02), or 4002.03, or equiv; and Grad standing. Not open to students with credit for 614.

5140 Economic History of the United States U 4
General survey from discovery of America to present; European economic background; westward movement and its effects; development of economic institutions in the United States. Prereq: 4400 (444), 5410 (641), 4001.01 (501.01), 4001.02 (502.02), or 4001.03, and 4002.01 (502.01), 4002.02 (502.02), or 4002.03, or equiv; or Stat 2450 (245), or equiv; or Grad standing. Not open to students with credit for 614.

5193 Individual Studies U 1 - 10
Advanced readings in economics and related fields. Prereq: Jr standing or higher; and an average of B or better in all econ courses; and a CPHR of 3.00 or above. Repeatable to a maximum of 10 or hrs or 10 completions. This course is graded S/U.

5250 National and International Money Markets U 3
Organization, functions, and control of money markets and their submarkets; flow of funds in these markets and investment policies of market participants. Prereq: 4400 (444), or 5410 (641), and 4001.01 (501.01), 4001.02 (502.02), or 4001.03, and 4002.01 (502.01), 4002.02 (502.02), or 4002.03, or Stat 2450 (245), or equiv. Not open to students with credit for 625.

5261 Financial Economics I U 3
Examination of the evolution of and economic issues facing financial markets, financial institutions, and financial market participants. Does not count as course credit towards the completion of a business major. Prereq: 4001.01, 4001.02, or 4001.03, and 4002.01, or 4002.02, or 4002.03, or Math 1151, 1152, 1161, or 2182H, or equiv; or Grad standing.

5262 Financial Economics II U 3
Examination of academic literature and econometric analysis of topics involving financial markets, financial institutions, and financial market participants. Does not count as course credit towards the completion of a business major. Prereq: 4001.01, 4001.02, or 4001.03, and 4002.01, or 4002.02, or 4002.03, and 5261, and Math 1151, 1152, 1161, or 2182H, or equiv.; or Grad standing.

5410 Econometrics I U 3
The general linear regression model; multiple correlation, path analysis, analysis of variance and tests of significance; specification errors. Prereq: 4001.01 (501.01), 4001.02 (501.02), or 4001.03, and Stat 2450 (245), 4201, 4202 (420L, 421), or 4370 (447, 448), or equiv. Not open to students with credit for 641, 444, or 4400.
140  Economics

5420  Econometrics II  U  G  3
Discrete choice models, panel data, endogeneity, instrumental variables, and systems of equations; stationary and nonstationary time series; applications in various fields of economics. Continuation of 5410.
Prereq: 5410 (641) and 4002.01, 4002.02 (502.01), or 4002.03 (502.02), or PubAffs 7571, or equiv. Not open to students with credit for 642.

5660  Financial Aspects of International Trade  U  G  3
International payments and receipts; foreign exchange markets; balance-of-payments adjustment under different monetary systems; macroeconomic policy; international monetary reforms; foreign investments; multinational corporations.
Prereq: 4400 (444), 5410 (641), or Stat 2450 (245), and 4002.01 (501.01), 4002.02 (502.02), or 4002.03, or equiv. Not open to students with credit for 666.

5700  Industrial Organization  U  G  3
Nature, role, and regulation of competition; market structure and social performance; antitrust laws; current economic, legal, and policy problems in the antitrust area.
Prereq: 4400 (444), 5410 (641), or Stat 2450 (245), and 4001.01 (501.01), 4001.02 (501.02), or 4001.03, or equiv. Not open to students with credit for 670.

5720  Comparative Institutional Analysis of Firms and Markets  U  G  3
Applications of economic analysis to industrial organizations including the firm’s internal incentive structure, labor markets, and financial institutions, of major market economies such as U.S., and Japan from comparative perspectives.
Prereq: 4001.01 (501.01), 4001.02 (501.02), or 4001.03, or equiv, or Grad standing. Not open to students with credit for 672.

5850  Labor Economics  U  G  3
Advanced study of the labor market including labor demand and supply, wage determination, and unemployment.
Prereq: 4400 (444), 5410 (641), or Stat 2450 (245); and 4001.01 (501.01), 4001.02 (501.02), or 4001.03, or equiv. Not open to students with credit for 685.

5860  Health Economics  U  G  3
An introductory course to the field of health economics. Students will to apply concepts from introductory and intermediate microeconomics to problems that are faced in health and medical care. The focus is on individual demand for medical care; health insurance; markets for, and institutional features of, health care providers; measuring and pricing quality, and healthcare reform.
Prereq: 4001.01, 4001.02, or 4001.03. Prereq or concurr: Stat 1540 or 2450.

5870  Neuroeconomics and Decision Neuroscience  U  G  3
The focus of this course will be on the psychology and neuroscience underlying economic behavior. Discussion will cover various domains of economic decision making and what Neuroeconomics has taught us about them.
Prereq: ADEcon 2005, Stat 1540, 2450, Psych 2220, or Econ 3400; and Math 1148 or higher; and Econ 4001.01, 4001.02, 4001.03, or ADEcon 4001, Psych 3313, 3513, or 4508. Not open to students with credit for Psych 5870. Cross-listed in Psych.

6193  Individual Studies  G  1 - 4
Supervised and individually designed studies for pre-qualifier graduate students in economics or graduate students in non-economics graduate programs.
Prereq: Permission of instructor. Not open to students with credit for 893. Repeatable to a maximum of 20 cr hrs or 5 completions. This course is graded S/U. Letter Grade option available only with approval of economics director of graduate studies.

6700  Survey of Mathematical Methods in Economics  G  3
Core analytical methods and techniques routinely used in the first-year graduate courses in economic theory; topics include basic real analysis, convexity, constrained optimization, envelope theorems and their economics applications.
Prereq: 4001.01, 4001.02, 4001.03, or 501A and graduate mathematics courses in vector calculus and elementary linear algebra. Not open to students with credit for 704, or 705.

6701  Survey of Statistical Methods in Economics  G  3
Probability and statistical methods frequently used in economic analysis; topics include random variables, moment generating functions, limit theorems, expectations, multiple correlations, tests of significance and their economic applications.
Prereq: Math 1152 (153), or equiv, or permission of instructor and economics director of graduate studies. Not open to students with credit for Stat 5201 (520), or 6801 (620), or 640, or 720.

6711  Survey of Microeconomics  G  4
Methodology and scope of the neo-classical microeconomics paradigm; topics include the theory of competitive firms and consumers, general equilibrium, Pareto optimum, welfare theorems, non-competitive markets, uncertainty and asymmetric information.
Prereq: 4001.01 or 501A, or equiv, and permission of economics director of graduate studies. Not open to students with credit for 8711 (834), 8712 (855), 704, or 705.

6721  Survey of Macroeconomics  G  4
Survey of macroeconomics fluctuations, business cycles and economic growth, including Keynesian, monetarist and real business cycle models; topics also include money and banking, unemployment, inflation and endogenous economic growth.
Prereq: 4002.01 (502.01) or equiv with permission of instructor and economics director of graduate studies. Not open to students with credit for 8721 (836), or 8722 (807) or 705, or 707.

6731  Survey of Econometric Methods I  G  3
Survey of methods as applied in econometric analysis, with applications to programming in R. Topics include data management and visualization, linear regression, causal inference, fixed-effects, instrumental variables, and linear models.
Prereq: 4400 or 5410 or Stat 2450, and Math 2568 or equiv.; or permission of instructor. Not open to students with credit for 8731, 8732, or 8733.

6732  Survey of Econometric Methods II  G  3
Survey of econometric methods in time series and panel data with an emphasis on empirical examples in micro and macro economics; topics include GMM, time series models, VAR, cointegration, fixed and random effects, and nonlinear models.
Prereq: 6731 (702), or equiv with permission of instructor and economics director of grad studies. Not open to students with credit for 8731 (740), or 8732 (741), or 8733 (742), or 703.

6745  Contemporary Political Economy  G  3
Survey of contemporary theories on the interactions between economic policies, domestic institutions and the international economy, and their consequences for political economy.
Prereq: Grad standing or permission of instructor. Not open to students with 6 cr hrs for 6745 and PoliSci 10, or 10 cr hrs for 735 and PoliSci 735. Repeatable to a maximum of 6 cr hrs. Cross-listed in PolitiC 7280.

7191  Internship in Professional Economics I  G  0 - 1
Practicum for economics graduate students who have completed the core curriculum in microeconomics, macroeconomics and econometrics to apply economic analysis on tasks and problems in an empirical economy or economic organizations.
Prereq: Satisfactory completion of the first-year Ph. D. courses or equivalent with permission of Economics Director of Graduate Studies. Not open to students with credit for 901. Repeatable to a maximum of 5 cr hrs or 5 completions. This course is graded S/U.

7193  Individual Studies  G  1 - 4
Supervised and individually designed readings in economics for postqualifier students in economics or graduate students in noneconomic graduate programs.
Prereq: Open to students who completed the first-year graduate PhD core curriculum and with permission of instructor. Not open to students with credit for 903. Repeatable to a maximum of 2 cr hrs or 5 completions. This course is graded S/U. Letter Grade option available only with approval of economics director of graduate studies.

7194  Group Studies  G  1 - 4
Lecture course of select topics designed to complement existing graduate courses in economics.
Prereq: Grad standing in economics or related disciplines; permission of instructor and economics director of graduate studies. Not open to students with credit for 894. Repeatable to a maximum of 44 cr hrs or 11 completions. S/U option only available with approval of economics director of graduate studies.

7700  Mathematics for Economics I  G  3
Mathematical concepts and techniques used in advanced economic research; real analysis; metric spaces; topology; measure and integration; convexity; separation theorems; contraction mapping; fixed point theorems; applications.
Prereq: Permission of instructor and economics director of grad studies; primarily for PhD students in economics and related disciplines. Not open to students with credit for 700.

7789  Survey Research Practicum  G  3
Hands-on applications for students interested in the planning, implementation, and analysis of a scientific sample survey.

8191  Internship in Professional Economics II  G  0 - 1
Practicum for advanced economics graduate students who have completed Ph.D. course requirements to apply economic analysis on tasks and problems in an empirical economy or economic organizations.
Prereq: Satisfactory completion of the Ph. D. core and field courses or equivalent with permission of Economics Director of Grad Studies. Not open to students with credit for 901. Repeatable to a maximum of 5 cr hrs or 5 completions. This course is graded S/U.

8193  Individual Studies  G  1 - 4
Supervised and individually specialized studies for PhD students who have finished regular course work in their economics PhD program. Letter grade option available only with approval of economics director of graduate studies.
Prereq: Permission of instructor. Repeatable to a maximum of 44 cr hrs. This course is graded S/U.

8194  Group Studies  G  1 - 4
Advanced new course material in economics offered to complement existing PhD courses.
Prereq: Grad standing in Econ or related field, and permission of instructor and Grad studies director for Econ. Not open to students with credit for 894. Repeatable to a maximum of 44 cr hrs or 11 completions.
8711 Microeconomic Theory IA  G  3  
Rigorous survey of the neoclassical paradigm dealing with individual economic agents, firms and markets; covers core concepts and methods such as equilibrium, optimality, duality, comparative statics and envelope theorems. Prereq; Grad standing in Econ. or related discipline with permission of Economics Director of Grad Studies.

8712 Microeconomic Theory IB  G  3  
Continuation and extension of Microeconomic Theory IA to study competitive general equilibrium, optimality and welfare theorems; includes analysis of individual agents' behavior under uncertainty and markets subject to asymmetric information. Prereq; 8711, or equiv, and permission of Economics Director of Grad Studies.

8713 Microeconomic Theory IIA  G  3  
Rigorous introduction to game theoretic methods and concepts and their applications to study strategic interactions in economic organizations, including imperfectly competitive markets and economies with public goods and externalities. Prereq; 8711 or 8712, or equiv, and permission of economics director of grad studies.

8714 Microeconomic Theory IIB  G  3  
A theoretical treatment of information economics and mechanism design; topics include implementation, dominant strategy mechanism, Bayesian mechanism design, adverse selection, moral hazard, social choice and auctions. Prereq; 8713, or equiv, and permission of Economics Director of Graduate Studies.

8721 Macroeconomic Theory IA  G  3  
A rigorous introduction to modern macroeconomic analysis and models of economic growth with emphasis on dynamic competitive equilibrium analysis; topics include dynamic programming applied to stochastic environments. Prereq; Grad standing, and permission of Economics Director of Grad Studies.

8722 Macroeconomic Theory IB  G  3  
Continuation of 8721 with recent developments in macro and monetary economics; topics include business cycles, endogenous growth, equilibrium unemployment and risk sharing in incomplete markets. Prereq; 8721 or equiv, and permission of Economics Director of Grad Studies.

8723 Macroeconomic Theory IIA  G  3  
Continuation of Macroeconomic Theory IA-IB with emphasis on dynamic general equilibrium models with shocks and frictions and their empirical assessment. Prereq; 8722, or equiv, and permission of Economics Director of Grad Studies.

8724 Macroeconomic Theory IIB  G  3  
Micro foundations of aggregate demand from the perspective of dynamic optimization; topics also include permanent income, lifetime portfolio choice, Q-theory of investment, consumption CAPM, term structure and long term risk. Prereq; 8723, or 806 and 807, or equiv, and permission of Economics Director of Grad Studies. Not open to students with credit for 809.

8731 Econometrics I  G  4  
Probability; random variables; sampling distributions; limit theorems; point and interval estimation; statistical hypothesis testing; multiple regression analysis in the linear model including finite-sample and asymptotic statistical properties. Prereq; 6700, 6701, or Stat 5201; or equiv with permission of economics director of grad studies.

8732 Econometrics II  G  4  
Generalized least squares; specification tests; generalized method of moments; endogenous regressors and simultaneous equation systems; panel data; nonlinear estimation; discrete and limited dependent variable models; and basic time-series analysis. Prereq; 8731, or equiv with permission of Economics Director of Graduate Studies.

8733 Econometrics III  G  3  
Continuation of Econometrics 8731 and 8732 with an emphasis on applications of econometric theory and methods, including the use of advanced econometric software to various fields of economics. Prereq; Econ 8731 and 8732, or equiv with permission of instructor. Not open to students with credit for 640, 740, 741, and 742.

8781.01 First Year Research Principles and Techniques in Core Microeconomics  G  1 - 3  
Group independent study of research principles and techniques for first-year PhD students in economics with focus on microeconomics. Prereq; 8714 (808), and permission of economics director of graduate studies. Repeatable to a maximum of 9 or hrs or 3 completions. This course is graded S/U.

8781.02 First Year Research Principles and Techniques in Core Macroeconomics  G  1 - 3  
Group independent study of research principles and techniques for first year PhD students in economics with focus on macroeconomics. Prereq; 8724 (809), and permission of economics director of graduate studies. Repeatable to a maximum of 9 or hrs or 3 completions. This course is graded S/U.

8781.03 First Year Research Principles and Techniques in Core Econometrics  G  1 - 3  
Group independent study of research principles and techniques for first year PhD students in econometrics with focus on econometrics. Prereq; 8732 (742), and permission of economics director of graduate studies. Repeatable to a maximum of 9 or hrs or 3 completions. This course is graded S/U.

8781.05 First Year Research Principles and Techniques in Core Economics  G  1 - 3  
Group independent study of research principles and techniques for first year PhD students in economics. Prereq; Grad standing in Economics, and permission of economics director of graduate studies. Repeatable to a maximum of 9 or hrs or 3 completions. This course is graded S/U.

8782.01 Second Year Research Principles and Techniques in Microeconomic Theory  G  1 - 3  
Group independent study-cum-workshop to facilitate integrative reviews of concepts and techniques in major themes of economic theory, to prepare for field exams/papers, and to develop research perspectives. Prereq; 8816 (815), 8817 (817), or 8818 (818), and permission of economics director of graduate studies. Repeatable to a maximum of 9 or hrs or 3 completions. This course is graded S/U.

8782.02 Second Year Research Principles and Techniques in Macroeconomics  G  1 - 3  
Group independent study designed to integrate and reinforce field knowledge and methods in macro-monetary economics and to develop research topics. Prereq; 8821 (810), 8822 (811), or 8823 (820), and permission of economics director of graduate studies. Repeatable to a maximum of 9 or hrs or 3 completions. This course is graded S/U.

8782.03 Second Year Research Principles and Techniques in Microeconomics  G  1 - 3  
Group independent study designed to integrate and reinforce field knowledge and methods in microeconomics and to develop research topics. Prereq; 8830 (840), 8831 (841), or 8832 (842), and permission of economics director of graduate studies. Repeatable to a maximum of 9 or hrs or 3 completions. This course is graded S/U.

8782.04 Second Year Research Principles and Techniques in Public and Urban Economics  G  1 - 3  
Group independent study designed to integrate and reinforce field knowledge and methods in public and urban economics and to develop research topics. Prereq; 7970 (790), 8841 (830), or 8842 (832), and permission of economics director of graduate studies. Repeatable to a maximum of 9 or hrs or 3 completions. This course is graded S/U.

8782.05 Second Year Research Principles and Techniques in Labor Economics  G  1 - 3  
Group independent study designed to integrate and reinforce field knowledge and methods in labor economics and to develop research topics. Prereq; 8851 (883), 8852 (884), or 8853 (881), and permission of economics director of graduate studies. Repeatable to a maximum of 9 or hrs or 3 completions. This course is graded S/U.

8782.06 Second Year Research Principles and Techniques in International Economics  G  1 - 3  
Group independent study designed to integrate and reinforce field knowledge and methods in international economics and to develop research topics. Prereq; 8861 (861), 8862 (862), or 8863 (863), and permission of economics director of graduate studies. Repeatable to a maximum of 9 or hrs or 3 completions. This course is graded S/U.

8782.07 Second Year Research Principles and Techniques in Industrial Organization  G  1 - 3  
Group independent study designed to integrate and reinforce field knowledge and methods in industrial organization and to develop research topics. Prereq; 8871 (871), 8872 (872), or 8873 (970), and permission of economics director of graduate studies. Repeatable to a maximum of 9 or hrs or 3 completions. This course is graded S/U.

8782.08 Second Year Research Principles and Techniques in Economic History  G  1 - 3  
Group independent study designed to integrate and reinforce field knowledge and methods in economic history and to develop research topics. Prereq; 5130 (614), 5140 (613), or 5150 (615), and permission of instructor and economics director of graduate studies. Repeatable to a maximum of 9 or hrs or 3 completions. This course is graded S/U.

8782.09 Second Year Research Principles and Techniques in Experimental Economics  G  1 - 3  
Group independent study designed to integrate and reinforce field knowledge and methods in experimental and behavioral economics and to develop research topics. Prereq; 8873 (970) or 8875, and permission of economics director of graduate studies. Repeatable to a maximum of 9 or hrs or 3 completions. This course is graded S/U.
142 Economics

8782.10 Second Year Research Principles and Techniques in
Growth and Development Economics
Group independent study designed to integrate and reinforce field knowledge and methods in growth and development economics and to develop research topics. Prereq: 8863 (863), and a field course approved by economics director of graduate studies, and permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

8782.20 Second Year Research Principles and Techniques in
Economics
Group independent study designed to integrate and reinforce knowledge and methods acquired in advanced field courses, and to develop research topics. Prereq: Major field courses approved by economics director of graduate studies, and permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

8783.01 Advanced Research Principles and Techniques in
Economic Theory
Group independent study to prepare students for original research and innovation in the field of advanced economic theory. Open to students who have completed field courses approved by economics director of graduate studies. Prereq: Permission of instructor and economics director of graduate studies. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.

8783.02 Advanced Research Principles and Techniques in
Macroeconomics
Group independent study to prepare students for original research and innovation in the field of macroeconomics. Open to students who have completed field courses approved by economics director of graduate studies. Prereq: Permission of instructor and economics director of graduate studies. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.

8783.03 Advanced Research Principles and Techniques in
Econometrics
Group independent study to prepare students for original research and innovation in the field of econometrics. Open to students who have completed field courses approved by economics director of graduate studies. Prereq: Permission of instructor and economics director of graduate studies. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.

8783.04 Advanced Research Principles and Techniques in
Public and Urban Economics
Group independent study to prepare students for original research and innovation in the field of public and urban economics. Open to students who have completed field courses approved by economics director of graduate studies. Prereq: Permission of instructor and economics director of graduate studies. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.

8783.05 Advanced Research Principles and Techniques in
Labor Economics
Group independent study to prepare students for original research and innovation in the field of labor economics. Open to students who have completed field courses approved by economics director of graduate studies. Prereq: Permission of instructor and economics director of graduate studies. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.

8783.06 Advanced Research Principles and Techniques in
International Economics
Group independent study to prepare students for original research and innovation in the field of international economics. Open to students who have completed field courses approved by economics director of graduate studies. Prereq: Permission of instructor and economics director of graduate studies. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.

8783.07 Advanced Research Principles and Techniques in
Industrial Organization
Group independent study to prepare students for original research and innovation in the field of industrial organization. Open to students who have completed field courses approved by economics director of graduate studies. Prereq: Permission of instructor and economics director of graduate studies. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.

8783.08 Advanced Research Principles and Techniques in
Economic History
Group independent study to prepare students for original research and innovation in the field of economic history. Open to students who have completed field courses approved by economics director of graduate studies. Prereq: Permission of instructor and economics director of graduate studies. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.

8783.09 Advanced Research Principles and Techniques in
Experimental Economics
Group independent study to prepare students for original research and innovation in the field of experimental and behavioral economics. Open to students who have completed field courses approved by economics director of graduate studies. Prereq: Permission of instructor and economics director of graduate studies. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.

8783.10 Advanced Research Principles and Techniques in
Growth and Development Economics
Group independent study to prepare students for original research and innovation in the field of growth and development economics. Open to students who have completed field courses approved by economics director of graduate studies. Prereq: Permission of instructor and economics director of graduate studies. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.

8816 Advanced Economic Theory I
A topic-driven course in advanced microeconomic theory, game theory and decision theory, and their theoretical applications with emphasis on important recent results. Prereq: 8714 (808), or equiv with permission of instructor. Not open to students with credit for 815.

8817 Advanced Economic Theory II
Thorough treatment of major developments in game theory and a survey of major applied game theory topics such as mechanism design, bargaining, and oligopoly. Prereq: 8714 (808), or equiv with permission of instructor. Not open to students with credit for 817.

8818 Advanced Economic Theory III
Theoretical approaches to economics of information; how information affects individual behavior and market equilibrium; moral hazard; adverse selection; incomplete contracts; rational expectations; and principal-agency models. Prereq: 8714 (808), or equiv with permission of instructor. Not open to students with credit for 818.

8819 Economics of Uncertainty
Classical and modern approaches to decision-making and economic behavior under uncertainty; classical expected utility; subjective probability; behavioral theory of economic choice under uncertainty. S/U option available only with permission of Grad studies director for Econ. Prereq: 8714 (808) or equiv, or permission of instructor. Not open to students with credit for 819.

8821 Advanced Macroeconomics I
Recent contributions to macro-monetary economics in theoretical, empirical and policy areas; topics include computational methods, econometric techniques, dynamic modeling and empirical assessment. Prereq: 8724 (809), or permission of instructor. Not open to students with credit for 810.

8822 Advanced Macroeconomics II
Studies roles of preferences, technology, endowments, and market structures to determine the behavior of aggregate variables. Topics include: dynamic stochastic general equilibrium, rational expectations, business cycles, and propagation mechanisms. Prereq: 8732 (742), or 8724 (809), or permission of instructor. Not open to students with credit for 811.

8823 Advanced Macroeconomics III
Studies the macroeconomic implications of discrete decisions by heterogeneous agents and assesses quantitative DSGE models. Topics include: lumpy adjustments, non-convex adjustment costs, and the interactions of real and financial frictions. Prereq: 8724, or 809, or permission of instructor. Not open to students with credit for 820.

8825 Advanced Macroeconomic Methods
Develops numerical methods for dynamic stochastic general equilibrium models with heterogeneity and non-convexities. Applications include: models of households with uninsurable risk and borrowing constraints, and firms with adjustment costs. Prereq: Not open to students with credit for 816.

8830 Advanced Econometrics I
Fundamental elements of time series methods and recently developed techniques for the analysis of economic time series. Prereq: 8732 (742), or equiv with permission of instructor. Not open to students with credit for 840.

8831 Advanced Econometrics II
Selected advanced topics in econometrics - such as nonparametric and semiparametric estimation, numerical optimization, simulation methods - including Markov chain Monte Carlo methods and duration models used in economics. Prereq: 8732 (742) or equiv with permission of instructor. Not open to students with credit for 841.

8832 Advanced Econometrics III
Theory and applications of advanced econometric methods with emphasis on parameter estimation and testing in nonlinear models. Topics include: large sample theory, extremum estimators, likelihood approach, and the GMM framework. Prereq: 8732 (742) or equiv with permission of instructor. Not open to students with credit for 842.
8833 Micro Econometrics G 3
Recent advances in micro econometrics, covering both theoretical and applied areas, with emphasis varying with instructor's research interest such as spatial econometrics and social interaction models. Prereq: Econ 8732 (742), Econ 8831 (841), and Econ 8832 (842), or equiv, or permission of instructor. Not open to students with credit for 843. Repeatable to a maximum of 12 cr hrs.

8851 Labor Economics I G 3
Theoretical and empirical methods used to understand life-cycles and interpersonal variations in earnings. Topics include: human capital, job-market signaling, matching, schooling, and mobility. Prereq: 8712 (804, 805), and 8731 (741), or equiv with permission of instructor. Not open to students with credit for 883.

8852 Labor Economics II G 3
Theories and empirical analysis of the demand for labor and changes in the wage structure over time; the determinants of youth outcomes and behaviors including the effect of family and peer groups. Prereq: 8712 (804, 805), and 8731 (741), or equiv with permission of instructor; 8851 (883) recommended. Not open to students with credit for 884.

8853 Labor Economics III G 3
An examination of models and methods used to study household labor supply behavior. Topics include: retirement, the determinants of child outcomes, and demographic behavior. 8852 (884) is recommended. Prereq: 8851 (883). Not open to students with credit for 861.

8856 Health Economics G 3
This course covers major research topics in health care and individual economics decisions related to health, structure of health care and insurance markets, and government policies. The course also provides a survey of data resources available to researchers in health economics, and the methodology of measurement and valuation of healthcare market performance and quality of healthcare providers. Prereq: 8712 and 8731, or permission of instructor.

8861 International Economics I G 3
Theory and empirics of the determinants of trade, analysis of comparative advantage, trade patterns, gains from trade, commercial policies on resource allocations, income distribution and growth. Prereq: 8712 (804, 805). Not open to students with credit for 861.

8862 International Economics II G 3
Theory and empirics of international macroeconomics. Topics include: open-economy business cycles, determinants of exchange rates, international capital flows and resource allocations, financial constraints, and computational and estimation methods. Prereq: 8712 (804, 805), 8722 (806, 807), and 8861 (861) recommended. Not open to students with credit for 862.

8863 International Economics III G 3
Evolution of world economy from theoretical and empirical perspectives; trade; growth and development; international capital markets; financial crises and sovereign default; international business cycle transmissions. Prereq: 8712 (804, 805), and 8722 (806, 807); and 8862 (862) recommended. Not open to students with credit for 863.

8871 Industrial Organization I G 3
A survey of theoretical concepts used to analyze industry structure, firm conduct, market performance and related issues of public policy; topics include recent developments in the theory of the firm as well as models of competition and rivalry. Prereq: 8713 (805, 806). Not open to students with credit for 871.

8872 Industrial Organization II G 3
A survey of empirical methods used to analyze industry structure, firm conduct, market performance and related issues of public policy. Prereq: 8871 (871), and 8732 (742), or permission of instructor. Not open to students with credit for 872.

8873 Industrial Organization III: Economic Analysis of Auctions G 3
A survey of auction theory, experiments, and empirics; topics include private and common value auctions, multi-unit demand auctions, sequential and simultaneous auctions, and related research material. Prereq: 8714 (808), or equiv, and permission of instructor.

8874 Computational Econometric Methods in Applied Microeconomics G 3
This course covers computational methods used in applied microeconomic research, with particular focus on applications to the estimation and analysis of structural discrete choice models used in the study of empirical industrial organization. Prereq: 8711 and 8731.

8875 Experimental & Behavioral Economics G 3
A survey of concepts and methods in experimental and behavioral economics for advanced graduate students; topics include impacts of heuristics and biases on "rational" behavior; other-regarding preferences, bargaining, public goods and market design. 8873 (970) recommended. Prereq: 8714 (808), 804, or 805, or equiv, or permission of instructor.

8876 Industrial Organization IV: Empirical Research Methods G 3
Recently developed techniques for estimating market power and costs with incomplete data, with applications to antitrust economics. The goal is to give you an understanding of state of the art empirical tools, with the purpose of preparing students for research. Prereq: 8714, and permission of instructor.

8891.01 Economic Theory Seminar G 1 - 3
Latest developments in advanced research in general economic theory, game theory and related fields. Prereq: 8714 (808), and permission of instructor. Repeatable to a maximum of 36 cr hrs or 12 completions. This course is graded S/U.

8891.03 Colloquium in Economic Theory G 1 - 3
A supervised workshop in which advanced graduate students report their latest research in progress on the themes chosen by the colloquium instructor in advanced theory and related fields. Open to students who have completed PhD field courses approved by economics director of graduate studies. Prereq: Permission of instructor and economics director of graduate studies. Repeatable to a maximum of 16 cr hrs or 8 completions.

8892.01 Macroeconomics Seminar G 1 - 3
Latest developments in advanced research in macro-monetary economics and related fields. Prereq: 8724 (809), and permission of instructor. Repeatable to a maximum of 36 cr hrs or 12 completions. This course is graded S/U.

8892.02 Workshop in Macroeconomics G 1 - 2
Forum to report and discuss the latest research results by graduate students, faculty members and outside speakers in macro-monetary economics and related fields. Prereq: Econ 8724 (809), and permission of instructor. Repeatable to a maximum of 24 cr hrs or 12 completions. This course is graded S/U.

8892.03 Colloquium in Macroeconomics G 1 - 3
A supervised workshop in which advanced graduate students report their latest research in progress on the themes chosen by the colloquium instructor in macroeconomics and related fields. Open to students who have completed PhD field courses. Repeatable to a maximum of 16 cr hrs or 8 completions.

8893.01 Econometrics Seminar G 1 - 3
Latest developments in advanced research in econometrics and related fields. Prereq: 8732 (741 and 742), and permission of instructor. Repeatable to a maximum of 36 cr hrs or 12 completions.

8893.03 Colloquium in Econometrics G 1 - 3
A supervised workshop in which advanced graduate students report their latest research in progress on the themes chosen by the colloquium instructor in econometrics. Prereq: Successful completion of micro and macro qualifiers, successful completion of two Ph.D. field requirements (econometrics recommended), and permission of instructor and economics director of graduate studies. Repeatable to a maximum of 16 cr hrs or 8 completions.

8894.01 Applied Microeconomics Seminar G 1 - 3
Latest developments in advanced research in applied microeconomics fields. Prereq: 8714 (808), and permission of instructor. Repeatable to a maximum of 36 cr hrs or 12 completions.

8894.02 Workshop in Applied Microeconomics G 1 - 2
Forum to report and discuss the latest research results by graduate students, faculty members and outside speakers in applied microeconomics fields. Prereq: 8714 (808), and permission of instructor. Repeatable to a maximum of 24 cr hrs or 12 completions. This course is graded S/U.

8894.03 Colloquium in Applied Microeconomics G 1 - 3
A supervised workshop in which advanced graduate students report their latest research in progress on the themes chosen by the colloquium instructor in applied microeconomics and related fields. Prereq: Completion of Ph.D. field courses approved by economics director of graduate studies, and permission of instructor and economics director of graduate studies. Repeatable to a maximum of 16 cr hrs or 8 completions.

8999 Dissertation Research G 1 - 3
Dissertation research in economics. Prereq: Doctoral candidate in Economics. Repeatable to a maximum of 60 cr hrs or 20 completions. This course is graded S/U.

1100 Introduction to Education & Human Ecology U 1
Degree Planning
Introduction to Education and Human Ecology degree programs, survey of university and college policies and procedures, and focus on degree planning. Prereq: Not open to students with credit for HumanEc 150 or EduPAES 100.
144 Education and Human Ecology

110H Introduction to Education & Human Ecology and Degree Planning
Introduction to Education and Human Ecology degree programs, survey of university and college policies and procedures, focus on degree planning, establishment of Honors requirements, and development of Honors contracts.
Prereq: Honors standing. Not open to students with credit for HumanEc 100 or EduPAES 100.
2194 Group Studies U 1 - 5
Study of special or interdisciplinary topics at an introductory level. Repeatable to a maximum of 15 or hrs or 15 completions.
2788H Education and Human Ecology Undergraduate Honors Seminar
Seminar for sophomores and juniors in the Education and Human Ecology undergraduate honors program. Students will explore research topics, and learn about the process of completing a scholarly research project.
Prereq: Honors standing, and Soph or Jr standing, and enrollment in EHE major or pre-major.
2990 Professional Career Development U 1
Job Search strategies for students including: Self-assessment, goal setting, job research, communication and correspondence, resumes, interviewing, portfolios and life after college. This course will not count for credit in any EHE major. Elective credit only.
Prereq: Soph standing, and pre-majors and/or majors in College of Education and Human Ecology. Not open to students with credit for ConSci 2990, HDFS 3600, or EduPAES 2270.04. This course is graded S/U.
3000 Foundations for Peer Leaders in First Year Experience U 1
This foundational course introduces necessary skills/knowledge to work effectively as a Peer Leader in First Year Experience. Content covers first-year transition issues, student development theory, OSU policies and resources, relationship-building, and paraprofessional skills. Emphasis is on content relevant to experiences of New First Year Students across the university.
Prereq: Only open to students who have been selected to participate in the FYE Peer Leader program, and permission of instructor. Repeatable to a maximum of 2 cr hrs.
3100 Paraprofessional Skill Development for EHE Peer Mentors U 1
This course provides a framework for undergraduate students to work effectively with their peers. The development of communication, public speaking, decision-making, and referral skills is stressed. Current issues in higher education are also explored. This course is limited to participants in the EHE Peer Mentor program.
Prereq: Permission of instructor or department. Repeatable to a maximum of 3 or hrs.
3191 Internships in Education and Human Ecology U 1 - 3
Fourteen week practical experience or equivalent in an approved organization related to student's major interest. This general internship option is for experiences that do not fit program specific EHE internships. This course will not count for credit in any EHE major. Elective credit only.
Prereq: CPRH 2.0 or above, and pre-major and/or major in Education and Human Ecology, and permission of instructor. Not open to students with credit for ConSci 3191 and 4191, or HDFS 2189, 3189.01, 3189.02, 3189.03, 3189.04, 3189.05, 3189.06, 3189.07, Humntr 4189, EduPAES 2189.21, 4189.05, 4489.05, 4191.20, 4191.21, 4191.40, 5191.23, or 6191. Repeatable to a maximum of 3 or hrs. This course is graded S/U.
4194 Group Studies U 1 - 3
Group studies on special issues in education. Repeatable to a maximum of 12 cr hrs or 4 completions.
4998 Undergraduate Research in Education & Human Ecology U 0 - 15
Undergraduate research or creative activities in variable topics.
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs or 5 completions. This course is graded S/U.
4998H Honors Undergraduate Thesis Research U 0 - 15
Undergraduate research or creative activities in variable topics.
Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 20 cr hrs or 4 completions. This course is graded S/U.
5193 Individual Studies U G 1 - 3
Individual study in the fields of education or human ecology.
Prereq: Permission of instructor. This course is graded S/U.
5779 Study at a Foreign Institution U G 1 - 18
An opportunity for students to study at a foreign institution and receive OSU credit for work completed there. Students will pay OSU fees and any fees in excess of OSU tuition, as well as all travel and subsistence costs.
Prereq: Permission of department chairperson. Repeatable to a maximum of 54 cr hrs or 3 completions.
5892 Workshop U G 1 - 5
Intensive study of a problem common to the participants for the purpose of developing sound principles and practices. Repeatable to a maximum of 20 cr hrs or 4 completions.

8000 Responsible Conduct of Research (RCR) G 1
Overview of the concepts and policies required for the Responsible Conduct of Research (RCR), with particular attention to federally funded research requirements. This course fulfills the NIH training requirement for research ethics. This is a condensed four-week course. Typically taught in session 1 of summer term.
Prereq: Grad standing in the College of Education and Human Ecology, or permission of instructor. Repeatable to a maximum of 3 or hrs. This course is graded S/U.

Education: Teaching and Learning

1010 Intensive English: Integrated Skills U 0
Integrated Skills for students in the Intensive English Program.
Prereq: Admission to American Language Program, and permission of Director. Repeatable to a maximum of 10 completions.
1120 Intercultural Communication for Undergrad Business & Pre-business Majors U 2
This performance-based course focuses on the speaking skills that facilitate success in the Fisher College of Business, OSU, and ultimately in the global business community. Aimed at helping first-year international undergraduate students, the course features activities, discussions, and readings related to cross-cultural conventions of spoken English and business English.
Prereq: First-year international student in the Fisher College of Business, and students who scored 24 or below on the oral proficiency section of the TOEFL.
1901 Advanced English as a Second Language U 3
Reviews advanced English patterns with emphasis on their use in writing essays. Intended for undergraduates.
Prereq: Placement test score of 1901.
1902 Academic Writing in English as a Second Language U 3
Attention given to various practices involving reading and source-based writing. Rhetorical and linguistic issues addressed. Synthesis and argumentative writing in response to literary and nonliterary texts. Intended for undergraduates.
Prereq: A grade of D or above in 1901, or Placement Test.
1902.04 Academic Writing in English as a Second Language U 4
Attention given to various practices involving reading and source-based writing. Rhetorical and linguistic issues addressed. Synthesis and argumentative writing in response to literary and nonliterary texts. Intended for undergraduates.
Prereq: Placement test.
2100 Dramatic and Arts-Based Teaching and Learning U 3
Students will become comfortable with, and knowledgeable about arts integration: dramatic and arts-based approaches to teaching and learning in diverse settings (schools, art museums, theatres, community centers).
2189 Field Experience U 1 - 2
Professional service with children or youth in a school or community agency.
Prereq: Permission of instructor. Repeatable to a maximum of 15 or hrs or 15 completions.
2357 Education, Society and Writing U 3
Designed to help students reflect critically, both orally and in writing, on the social, political, and cultural contexts that influence education in today's society.
Prereq: A GE level 1 writing course. Not open to students with credit for 607. GE writing and comm course: level 2.
2368 Introduction to Children's Literature U 3
This is a survey course in which students study the historical and contemporary elements of literature intended for children, including picturebooks; traditional tales; novels of realism, and fantasy; nonfiction; poetry; and multicultural books.
Prereq: English 1110, or equiv. Not open to students with credit for 467. GE lit course.
2744 Technologies Used in STEM Education U 3
The role and scope of educational technology for standards based STEM instruction. Exploration of areas in which mathematics, science education, and technology education can effectively use educational technology in a pedagogically sound manner. Technology has two roles in STEM education; to teach and learn with, and as a tool for doing STEM.
2820 Creativity and the Arts in Early Childhood Development and Education U 3
This course introduces students to basic definitions, theories, and practical examples of using creativity, imagination, and the arts as means for educating young children within and outside of traditional early childhood educational settings.
3160 Application of Development in Learning Contexts U 3
Designed for students to apply theories and research of child growth and development in multiple learning contexts.
Prereq: Not open to students with credit for 460. GE soc sci indv and groups course.
3189.01 Field Experience: Early Childhood Education U 1 - 2
This field experience is designed as a practice-based companion to the EC Pedagogy class.
Prereq: Admission to Early Childhood Education Major. Repeatable to a maximum of 4 or hrs or 4 completions.
Education: Teaching and Learning

3189.02 Field Experience: Middle Childhood Education U 1 - 2
The experience is designed to provide: lesson planning, teaching, and classroom management; student learning, interests, and perspectives; (3) the requirements of being a professional educator; and effectively bringing together the work done in a university classroom with work done in grade 4-9 classrooms.
Prereq: Admission to Middle Childhood Education Major. Repeatable to a maximum of 4 cr hrs or 4 completions.

3189.03 Field Experience: English Language Education U 1 - 2
The field experience is designed to provide: (1) lesson planning, teaching, and classroom management; (2) student learning, interests, and perspectives; (3) the requirements of being a professional educator; and (4) effectively bringing together the work done in a university classroom with work done in 7-12 integrated language arts classrooms.
Prereq: Admission to English Language Arts Education Major. Repeatable to a maximum of 4 cr hrs or 4 completions.

3189.05 Field Experience: Early Childhood Visual Impairment U 1 - 2
The experience is designed to provide: how teachers think & learn; how teachers engage students with visual impairments & others in the classroom in learning; how to work with children with VI in groups, including effective guidance & discipline strategies; how to connect the classroom to families & community; how you can effectively bring the work done in pedagogy to work with VI students.
Prereq: Admission to Early Childhood Education Major and Visual Impairments licensure program. Repeatable to a maximum of 4 cr hrs or 4 completions.

3189.06 Field Experience: World Language Education U 1 - 2
Directed field experience emphasizing appropriate teaching strategies for world language education with different school age children and settings.
Prereq: Admission to World Language Education Major. Repeatable to a maximum of 4 cr hrs or 4 completions.

3189.08 Field Experience: TESOL U 1 - 2
Directed field experience emphasizing appropriate teaching strategies for TESOL with different school age children and settings.
Prereq: Admission to TESOL major. Repeatable to a maximum of 4 cr hrs or 4 completions.

3189.09 Field Experience: Child and Youth Studies U 1 - 2
Field experience designed to provide undergraduate students in the Child & Youth Studies program an opportunity to work with a cooperating professional within an educational or community organization focusing on teaching & learning.
Prereq: Admission to Child and Youth Studies Major. Repeatable to a maximum of 4 cr hrs or 4 completions.

3193 Individual Studies U 1 - 3
Individual study projects.
Prereq: Permission of Instructor. Repeatable to a maximum of 20 cr hrs or 20 completions. This course is graded S/U.

3194 Group Studies U 1 - 3
Group studies on special problems in education.
Prereq: Permission of Instructor. Repeatable to a maximum of 12 cr hrs or 12 completions.

3356 Literature for Adolescents U 3
Literature for individual, group, and whole-class reading in junior and senior high schools; interest factors and literary value as criteria for selection; bibliographic aids.
Prereq: English 1110 or equivalent. Not open to students with credit for 565 or 3356E. GE lit course.

3356E Literature for Adolescents U 3
Literature for individual, group, and whole-class reading in junior and senior high schools; interest factors and literary value as criteria for selection; bibliographic aids.
Prereq: English 1110 or equivalent. Not open to students with credit for 3356 (565). GE lit course.

4005 Urban Teaching and Learning U 3
This course introduces students to issues related to teaching and learning in urban school contexts.
Prereq: Not open to students with credit for 559. GE soc sci div and groups and diversity soc div in the US course.

4015 Sexualities and Education U 3
Examination of sexual orientation as an arena of diversity in K-12 and higher education as well as society.
Prereq: Not open to students with credit for EduPL 415.

4174 Family Participation in Early Childhood School Programs: General Student Body U 3
The purposes and importance of family involvement in early childhood school programs, types of programs, resources, methods, and curricula.

4189.01 Advanced Field Experience: Early Childhood Education U 1 - 4
The field experience is designed to provide: classroom practices in lesson planning, teaching, and guidance and discipline; student learning, interests, and perspectives; the official and unofficial requirements of being a professional educator; and how you can effectively bring together the work done in a university classroom with your work in classrooms with students age 3 to grade 3.
Prereq: Admission to Early Childhood Education Major. Repeatable to a maximum of 12 cr hrs or 3 completions.

4189.02 Advanced Field Experience: Middle Childhood Education U 1 - 4
The field experience is designed to provide: best practices in lesson planning, teaching, and classroom management; student learning, interests, and perspectives; the official and unofficial requirements of being a professional educator; and how you can effectively bring together the work done in a university classroom with grade 4-9 classrooms.
Prereq: Admission to Middle Childhood Education Major. Repeatable to a maximum of 12 cr hrs or 3 completions.

4189.03 Advanced Field Experience: English Language Arts Education U 1 - 4
The advanced field experience is designed to provide: lesson planning, pedagogy, and classroom management; student learning, interests, and perspectives; the requirements of being a professional educator; and effectively bringing together the work done in a university classroom with work done in 7-12 integrated language arts classrooms.
Prereq: Admission to English Language Arts Education Major. Repeatable to a maximum of 12 cr hrs or 3 completions.

4189.05 Advanced Field Experience: Early Childhood/Visual Impairment U 1 - 4
The field experience is designed to provide: best practices in lesson planning, teaching, & classroom management; (2) student learning, interests, & perspectives; official & unofficial requirements of being a professional educator; & how you can effectively bring together the work done in a university classroom with your work in classrooms or educational settings with students in ECVI.
Prereq: Admission to Early Childhood Education Major and Visual Impairments licensure program. Repeatable to a maximum of 12 or hrs or 3 completions.

4189.06 Advanced Field Experience: World Language Education U 1 - 4
Directed field experience emphasizing appropriate teaching strategies for World Language K-12 students.
Prereq: Admission to World Language Education Major. Repeatable to a maximum of 12 cr hrs or 3 completions.

4189.07 Advanced Field Experience: STEM Education U 1 - 4
The purpose of this field experience is to support & enhance the development of educational leaders who engage in & implement research-based practices to support & advance STEM 7-12 educational progress. Our program prepares interns for initial licensure & engage experienced educators who aspire to advance their practice.
Prereq: Admission to STEM Education Major. Repeatable to a maximum of 12 or hrs or 3 completions.

4189.08 Advanced Field Experience: TESOL U 1 - 4
Directed field experience emphasizing appropriate teaching strategies for TESOL grades K-12.
Prereq: Admission to TESOL Major. Repeatable to a maximum of 12 or hrs or 3 completions.

4191 Internship U 1 - 15
Internship in an educational or community setting.
Prereq: Permission of Instructor. Repeatable to a maximum of 15 cr hrs or 15 completions.

4303 Linguistic Diversity in Education U 3
Prepares students to work effectively with linguistically diverse populations in educational contexts and includes an introduction to linguistic diversity and how it shapes teaching and learning.

499B Undergraduate Research in Teaching and Learning U 1 - 4
Undergraduate Research is completed by junior and/or senior students as an independent study under the supervision of a faculty member. The student will conceptualize a research study, identify theories and methods appropriate to the research, and assume responsibility for data collection, data management, and other activities pertaining to the research project including scholarly writing.
Prereq: A cumulative GPA of 3.0 or above. Repeatable to a maximum of 12 or hrs or 4 completions. This course is graded S/U.

499BH Undergraduate Research in Teaching and Learning U 1 - 4
Undergraduate Research is completed by junior and/or senior honors students as an independent study under the supervision of a faculty member. The student will conceptualize a research study, identify theories and methods appropriate to the research, and assume responsibility for data collection, data management, and other activities pertaining to the research project including scholarly writing.
Prereq: Honors standing, and an overall GPA of 3.40 or above. Repeatable to a maximum of 12 or hrs or 3 completions.

5005 Equity and Diversity in Education U G 3
Focuses on issues of diversity, equity, teacher beliefs, and multicultural education. Emphasis is placed on the roles of identity and lived experience and its influences on approaches to teaching and learning in educational settings.
Prereq: Not open to students with credit for 815.
146 Education: Teaching and Learning

5030 Spoken English for Academic Contexts U G 2
This course is designed for international undergraduates and graduates who would like to improve their oral English proficiency and confidence speaking for academic purposes, as well as their familiarity with the languages and cultures of the U.S. and OSU. The course is based on the principle that speaking improves only with ample opportunities to speak. Repeatable to a maximum of 4 cr hrs.

5040 Advanced Spoken English for Intl Graduate Students I U G 4
Designed to improve the spoken English fluency, pronunciation, grammar, and listening comprehension of non-native English speaking graduate students. Public speaking skills and an awareness of American culture.
Pre-req; Placement test, and permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

5050 Classroom English for International Graduate Teaching Associates U G 3
Designed to improve the classroom communication skills of non-native English speaking TAs. With a focus on teaching, linguistic and discourse competence are developed for success in the cultural context of the American university.
Pre-req; Placement test, and permission of instructor. This course is graded S/U.

5055 Teaching Workshop for International Graduate Teaching Associates U G 2
Addresses the particular issues of non-native English speaking graduate students as TAs. Involves discussion of teaching issues, classroom observations, and extensive teaching practice and feedback in both class and tutorials.
Pre-req; Permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

5060 Special Topics: Spoken English for International Graduate Students U G 1
Focuses on areas of language acquisition challenges for students needing extra work in a specific aspect of language development to progress through completion and certification in a timely manner.
Pre-req; Placement test required or permission of English as a Second Language department.
Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

5101 Teaching and Learning with Drama: Introduction U G 3
Introduction to the use of drama and social imagination in education.
Pre-req.; Jr or Sr standing with some field experience, or experienced teacher. Not open to students with credit for E33. Repeatable to a maximum of 6 cr hrs.

5102 Teaching and Learning of Literacy in Grades Pre-K - 3 U G 3
Examination of children's oral and written language development and related theoretical understandings instrumental for teaching language arts including evaluation processes and instructional materials.
Pre-req; Enrollment in Education major or Master of Education.

5108 Teaching and Learning of Mathematics in Grades Pre-K - K - 3 U G 3
Prepares preservice teachers with knowledge, skills of, and ability to use standards, learning theories, pedagogies, assessment, and technology for the teaching and learning of Pre-K - 3 early childhood mathematics in a diverse classroom.
Pre-req; Admission to Early Childhood teaching licensure program, or permission of instructor.

5120 Arts-Based Integrated Learning U G 3
Focuses on using arts-based, inquiry-based, and project-based learning as interdisciplinary, integrated approaches to curriculum and building multiple literacies and supporting multiple learners simultaneously.
Pre-req; Not open to students with credit for 872.

5123 Early Childhood Pedagogy U G 3
Pedagogy I explores sociocultural perspectives on teaching and learning in early childhood and elementary education, the role of teacher as researcher/inquirer, and the ways in which sociocultural pedagogies interface with standard-based education.
Pre-req.; Admission to major or M.Ed. Not open to students with credit for 723.

5125 Redefining Roles: Investigating Reggio-inspired Practice U G 3
Students are introduced to foundational principles of the Reggio Emilia approach for children from infancy-elementary years. Using these tenets, students will develop a theory of how Reggio principles interface with teaching and learning within an American context, emphasizing the reexamination of teacher roles and the learner through an inquiry-based approach.

5129 Teaching and Learning of Science in Grades Pre-K - 3 U G 3
Exploration of contemporary alternatives in early childhood science education and the development of knowledge and skills for teaching and learning in grades Pre-K - 3, with a focus on preschool and kindergarten.
Pre-req; Enrollment in Education major or Master of Education. Not open to students with credit for 723.

5137 Teaching and Learning of Social Studies Grades Pre-K - 3 U G 3
Designed to provide opportunities to examine interesting and effective social studies content knowledge, cultural understandings, and pedagogies for the early childhood learner within global contexts.
Pre-req; Not open to students with credit for 737.

5174 Family Participation in Early Childhood School U G 3
Programs
The purposes and importance of family involvement in early childhood school programs, types of programs, resources, methods, and curricula.
Pre-req; Education pre-major or admission to licensure program.

5189.01 Planned Field Experience: Early Childhood U G 1 - 15
Planned field experience under supervision in a PK-5th grade classroom.
Pre-req; Permission of instructor. Repeatable to a maximum of 30 cr hrs or 4 completions.

5189.02 Field Experience: Middle Childhood U G 1 - 15
Planned field experience under supervision in a 4th-6th grade classroom.
Pre-req; Enrollment in Master of Education program, and permission of instructor. Repeatable to a maximum of 30 cr hrs or 4 completions.

5189.03 Field Experience: Integrated Language Arts & Social Studies U G 1 - 15
Planned field experience under supervision in an ILA or ISS 7th-12th grade classroom.
Pre-req; Enrollment in Master of Education program, and permission of instructor. Repeatable to a maximum of 30 cr hrs or 4 completions.

5189.04 Field Experience: Social Studies U G 1 - 15
Planned field experience under supervision in an Integrated Social Studies 7th-12th grade classroom.
Pre-req; Admission to Integrated Social Studies MEd program. Repeatable to a maximum of 30 cr hrs or 4 completions.

5189.05 Planned Field Experience: Visual Impairment U G 1 - 15
Planned field experience for Visual Impairment license.
Pre-req; Enrollment in Master of Education VI or TVI program, and permission of instructor.
Repeatable to a maximum of 30 cr hrs or 4 completions.

5189.06 Field Experience: TESOL or World Language U G 1 - 15
Planned field experience under supervision in TESOL or World Language Classroom.
Pre-req; Enrollment in Master of Education program, and permission of instructor. Repeatable to a maximum of 30 cr hrs or 4 completions.

5189.07 Field Experience: STEM U G 1 - 15
Planned field experience under supervision in STEM 7th-12th grade classroom.
Pre-req; Enrollment in Master of Education program, and permission of instructor. Repeatable to a maximum of 30 cr hrs or 4 completions.

5189.11 Field Experience: Early Childhood Generalist Endorsement U G 1
This field experience is designed to provide an opportunity to work with a mentor teacher to gain insight into: best practices in lesson planning, teaching, and classroom management; student learning, interests, and perspectives; how to effectively implement methods and pedagogical approaches specific to grades 4 & 5 for the ECG endorsement.
Pre-req; Enrollment in the Early Childhood Generalist endorsement program, or Jr or Sr standing in BS/Ed in ECE.

5189.22 Field Experience: Middle Childhood Generalist Endorsement U G 1
This field experience is designed to provide an opportunity to work with a mentor teacher to gain insight into: best practices in lesson planning, teaching, and classroom management; student learning, interests, and perspectives; how to effectively implement methods and pedagogical approaches specific to grades 4-6 grade MCG content areas.
Pre-req; Enrollment in the Middle Childhood Generalist endorsement program, or Jr or Sr standing in BS/Ed in MCE.

5189.33 Field Experience Bilingual Endorsement U G 1 - 3
Opportunity to work with a mentor teacher to gain insight into best practices in lesson planning, teaching, and classroom management; student learning, interests, and perspectives; how to effectively implement methods and pedagogical approaches specific to bilingual students and bilingual, dual language, and/or immersion classrooms.
Pre-req; Enrollment in the Bilingual Endorsement program. Pre-req or concur: 5303.

5189.66 Planned Field Experience: TESOL U G 1 - 15
This course comprises and complements the field experience in which students in the TESOL endorsement are required to take part. The course is used primarily as a place where students can reflect upon and discuss what they have observed in their field experience with LEP students.
Pre-req; Enrollment in Grad-level TESOL Endorsement, and permission of instructor.
Repeatable to a maximum of 30 cr hrs or 4 completions.

5191 Orientation and Mobility Internship U G 4
This internship requires direct O&M assessment, planning and instruction of a variety of students within at least one setting (e.g., private agency, state school for the blind, and/or a VA Blind Rehabilitation Center) under the supervision of a COMS. Students must complete all other program requirements prior to entering internship. Students must also complete at least 100 documented hours of field experience (supervised observation, co-teaching, and direct instruction) prior to beginning the O&M Internship.
Pre-req; Admission to the Orientation and Mobility program.
5191.01 Supervised Student Teaching Internship: Early Childhood Education

Student teaching is designed to assess and support preservice pre-K-3rd grade teachers as they develop the necessary knowledge, skills, and dispositions required for beginning level teachers.
Prereq: Admission to Early Childhood Education major or MEd program. Repeatable to a maximum of 30 cr hrs or 2 completions.

5191.02 Supervised Student Teaching Internship: Middle Childhood Education

Student teaching is designed to assess and support preservice 4th-6th grade teachers as they develop the necessary knowledge, skills, and dispositions required for beginning level teachers.
Prereq: Admission to Middle Childhood Education Major or MEd program. Repeatable to a maximum 30 cr hrs or 2 completions.

5191.03 Supervised Student Teaching Internship: English Language Education

Student teaching is designed to assess and support preservice 7-12 grade teachers as they develop the necessary knowledge, skills, and dispositions required for beginning level teachers.
Prereq: Admission to English Language Arts Education Major or MEd program. Repeatable to a maximum of 30 cr hrs or 2 completions.

5191.04 Supervised Student Teaching Internship: Integrated Social Studies

Student teaching is designed to assess and support preservice 7-12 grade teachers as they develop the necessary knowledge, skills, and dispositions required for beginning level teachers.
Prereq: Admission to Integrated Social Studies MEd program. Repeatable to a maximum of 30 cr hrs or 2 completions.

5191.05 Supervised Student Teaching Internship: Visual Impairment

Student teaching is designed to assess and support preservice visual impairment teachers as they develop the necessary knowledge, skills, and dispositions required for beginning level teachers.
Prereq: Admission to Early Childhood Education Major with Visual Impairment specialization, Grad non-degree visual impairment licensure only program, MA in Sensory Impairment program, or MEd program in Visual Impairment. Repeatable to a maximum of 30 cr hrs or 2 completions.

5191.06 Supervised Student Teaching Internship: World Language Education

Student teaching is designed to assess and support preservice World Language teachers as they develop the necessary knowledge, skills, and dispositions required for beginning level teachers.
Prereq: Admission to World Language Education Major or MEd program. Repeatable to a maximum of 30 cr hrs or 2 completions.

5191.07 Supervised Student Teaching Internship: STEM Education

Student teaching is designed to assess and support preservice STEM, 7-12th grade teachers as they develop the necessary knowledge, skills, and dispositions required for beginning level teachers.
Prereq: Admission to STEM Education Major or MEd program. Repeatable to a maximum of 30 cr hrs or 2 completions.

5191.08 Supervised Student Teaching Internship: TESOL

Student teaching is designed to assess and support preservice TESOL teachers as they develop the necessary knowledge, skills, and dispositions required for beginning level teachers.
Prereq: Admission to TESOL Major. Repeatable to a maximum of 30 cr hrs or 2 completions.

5195.01 Reflective Seminar: Early Childhood Education

This course serves as the place for mediating learning & applying it to the practical. You will engage in reading, discussion, & reflection to develop your understanding of the relationship between what you learn in the university classroom & what you experience in the elementary classroom.
Prereq: Admission to Early Childhood Education Major or MEd program. Repeatable to a maximum of 10 cr hrs or 5 completions. This course is graded S/U.

5195.02 Reflective Seminar: Middle Childhood Education

Reflective Seminar is part one of a 3-part seminar that takes place over the course of 3 semesters. This course includes what is often viewed as the more traditional 'science' of teacher preparation.
Prereq: Admission to Middle Childhood Education Major or MEd program. Repeatable to a maximum of 10 cr hrs or 5 completions. This course is graded S/U.

5195.03 Reflective Seminar: English Language Education

Reflective Seminar is part one of a 3-part seminar that takes place over the course of 3 semesters. This course includes what is often viewed as the more traditional 'science' of teacher preparation.
Prereq: Admission to English Language Arts Education Major or MEd program. Repeatable to a maximum of 10 cr hrs or 5 completions. This course is graded S/U.

5195.04 Reflective Seminar: Integrated Social Studies

Reflective Seminar is part one of a 3-part seminar that takes place over the course of 3 semesters. This course includes what is often viewed as the more traditional 'science' of teacher preparation.
Prereq: Admission to Integrated Social Studies MEd program. Repeatable to a maximum of 10 cr hrs or 5 completions. This course is graded S/U.

5195.05 Reflective Seminar: Visual Impairment

Reflective Seminar is part one of a 3-part seminar that takes place over the course of 3 semesters. This course includes what is often viewed as the more traditional 'science' of teacher preparation.
Prereq: Admission to Early Childhood Education Major with Visual Impairment specialization, Grad non-degree visual impairment licensure only program, MA in Sensory Impairment program, or MEd program in Visual Impairment. Repeatable to a maximum of 10 cr hrs or 5 completions. This course is graded S/U.

5195.06 Reflective Seminar: World Language Education

Reflective Seminar is part one of a 3-part seminar that takes place over the course of 3 semesters. This course includes what is often viewed as the more traditional 'science' of teacher preparation.
Prereq: Admission to World Language Education Major or MEd program. Repeatable to a maximum of 10 cr hrs or 5 completions. This course is graded S/U.

5195.07 Reflective Seminar: STEM Education

Reflective Seminar is part one of a 3-part seminar that takes place over the course of 3 semesters. This course includes what is often viewed as the more traditional 'science' of teacher preparation.
Prereq: Admission to STEM Education Major or MEd program. Repeatable to a maximum of 10 cr hrs or 5 completions. This course is graded S/U.

5195.08 Reflective Seminar: TESOL

Reflective Seminar is part one of a 3-part seminar that takes place over the course of 3 semesters. This course includes what is often viewed as the more traditional 'science' of teacher preparation.
Prereq: Admission to TESOL Major. Repeatable to a maximum of 10 cr hrs or 5 completions. This course is graded S/U.

5195.09 Reflective Seminar: Child and Youth Studies

This course is designed to assess and support student in their final year as they develop the necessary knowledge, skills, and dispositions required for entry level education professionals.
Prereq: Admission to Child and Youth Studies Major. Repeatable to a maximum of 10 cr hrs or 5 completions. This course is graded S/U.

5200 Foundations of Middle Childhood Teaching and Learning

Introduces the foundations and major concerns in middle childhood education using contemporary research, scholarship, and practice, and exploring traditional and newer course materials.
Prereq: Not open to students with credit for 601 and 603.

5225 Diverse Literature and Comprehension - Elementary-Middle Education

Meets state requirements for understanding theory and methods linking the teachers’ understanding of diverse literature with comprehension theory and practice and the related construction of literate environments.

5226 Composing Print + Digital Multimodal Texts

This course focuses on interactive, creative, critical, dialogic approaches for teaching and learning composing in both print and digital multimodal formats, and is particularly applicable to early and middle childhood classrooms.

5230 Language Arts Methods for Preservice Middle Childhood Teachers

Preservice teachers study methods for teaching middle childhood students' reading and writing. They explore the significance of students' interests, language, and communities to their knowledge and meaning-making of the Language Arts.
Prereq: Not open to students with credit for 736.

5270 Mathematics Methods for Preservice Middle Childhood Teachers

Preservice teachers study methods for teaching middle childhood mathematics. These methods include instruction, assessment, and learning theory to support the teaching and learning of mathematics in grades 4 through 9.

5275 Science Methods for Preservice Middle Childhood Teachers

Prospective teachers study methods of science instruction and assessment of student learning in grades 4 through 9, with an emphasis on inquiry-based learning and formative assessment of student understanding.
Prereq: Not open to students with credit for 736.
148 Education: Teaching and Learning

5281 Development of 4th and 5th Grade Learners Across the Curriculum U G 3
Aids students in acquiring a working understanding of the physical, cognitive and language development of the children in 4th/5th grades.
PreReq: 3160 or HDFS 2410, and EduTL 3189, 4189, or 5189; or Grad standing.

5282 The Social Transitions of 4th and 5th Grade Learners U G 3
Focuses on the social and emotional development of the early adolescent in society, home and in the classroom setting.
PreReq: 3160 or HDFS 2410, and EduTL 3189, 4189, or 5189; or Grad standing.

5283 Teaching Mathematics, Science and Culture in 4th and 5th Grades U G 3
Related to teaching mathematics and science with consideration of pedagogy, content, assessment and equity.
PreReq: 5108 and 5129; or Grad standing.

5284 Integrating Language Arts and Social Studies in 4th and 5th Grades U G 3
Related to the integration of LA/SS. The focus is on curriculum, pedagogy, and integration specific to 4th/5th grades.
PreReq: 5102, 5137, and 5339; or Grad standing.

5301 Foundations of Bilingual Education U G 3
This course will provide a space to discuss and deconstruct the history, theoretical foundations, and practices of bilingual education in the United States, with a particular focus on the experiences of immigrant children. Participants will explore the definitions and characteristics of bilingual education, including its historical, political, legal, and ideological foundations.

5302 Assessing Bilingual Learners U G 3
Introduces participants to current school-based assessments through psychometric and socio-cultural models of assessment focusing on how schools measure language and achievement for emergent bilinguals.
PreReq: 5301 and 5365.

5303 Methods & Materials in Bilingual/Multilingual Education U G 3
Overview of instructional approaches and curricular materials designed to promote the language, literacy, and content learning of bilingual students. Participants will have the opportunity to familiarize themselves with relevant approaches and materials through course readings, class activities, and extension activities outside of class. PreReq: 5301, 5302, 5365, and 5370.

5330 LGBTQ+ themed Literature for Children and Young Adults U G 3
This course focuses on children and young adult literature that represents the diversity of lesbian, gay, bisexual, transgender, queer, and other non-heterosexual and non-cisgender people across social dimensions defined by race, class, religion, and nationality, among others. It takes a historical view before focusing closely.

5339 Evaluation and Instructional Decision-Making in Literacy U G 3
Assessment instruments and processes to determine students' abilities and needs and instructional strategies to meet those needs as useful to early and/or middle childhood teachers are explored.
PreReq: 5469, and enrollment in a B.S. Ed. major or Master of Education program. Not open to students with credit for TDS or TJS.

5341 Journalism and New Media in the 7-12 Classroom U G 3
Designed for pre-service teachers who plan to teach school newspaper, yearbook, broadcast and news media in middle school or high school (grades 7-12).

5345 Teacher Inquiry & Methods: Writing U G 3
Designed to assist students in understanding writing development to develop process-oriented approaches to writing instruction.
PreReq: Admission to the Teaching & Learning B.S.Ed. or M.Ed. program. Not open to students with credit for 645.

5346 Teacher Inquiry & Methods: Literature U G 3
Designed to assist students in learning about literary understanding and in developing pedagogical content knowledge for teaching environment-oriented approaches to literature instruction. Laboratory experience required.
PreReq: Admission to B.S.Ed. or M.Ed., EHE major, or permission of instructor. Not open to students with credit for 646.

5362 Roots of Fantasy U G 3
A study of selected works of fantasy for children grades 4-9 along with their source in traditional literature; works based on Greek and Arthurian legends, the Welsh Mabinogion and other folklore.
PreReq: Not open to students with credit for 862.

5365 Linguistics for Literacy Education U G 3
This is an introduction to educational linguistics. Through exploration of linguistic concepts and their relevance to teaching, learning, and literacy, students develop new ways of seeing and supporting students' development as skilled language users.
PreReq: Not open to students with credit for 665.

5370 Language and Literacy Development & Instruction for Bilingual Learners U G 3
This course provides an overview of key research on bilingual and biliteracy development with a focus on children who are learning and living in two (or more) languages in their homes, communities, and schools. Course examines the complexity of bilingualism and biliteracy, including the influences on and processes of bilingual/biliteracy development and the roles of culture in schooling.
PreReq: Level 1 and Level 2 courses, and enrollment in the Reading Endorsement; or 5301 and 5365, and enrollment in the Bilingual Education Endorsement.

5442 Teaching Reading Across the Curriculum U G 3
Provides the knowledge and tools needed to support the developmental reading and literacy skills for students seeking licensure in AYA (7-12), multi-age and Voc Ed programs. Laboratory experience required.
PreReq: Admission to B.S.Ed, M.Ed., EHE major, Agriscience Ed major, or permission of instructor. Not open to students with credit for 642.

5453 Critical Literacy in Content Area Classrooms U G 3
Teaches teachers to provide the support many students need throughout their schooling to develop their literacy skills in content areas; recognizing that learning the discourses of various fields and genres is a life-long endeavor.
PreReq: Not open to students with credit for 853.

5455 Hiphop Literacies U G 3
Combines the study of Hiphop Based Education and new literacy studies. Students will investigate Hiphop cultural arts and discourses of everyday life as a form of culturally relevant teaching and learning.

5468 Foundations of Reading and Literacy U G 3
Introduction to the theories and practices of teaching and learning of literacy for children in early and middle childhood. Major themes of the course are a child-centered philosophy of literacy instruction and diversity awareness - the need for teachers to be aware of the diversity of backgrounds and abilities that children bring to the classroom and of strategies for dealing with that diversity.

5469 Language and Word Study for All Learners U G 3
This course provides a detailed examination of the ways that oral and written languages work and how this supports development of English word reading and spelling skills for learners who are monolingual speakers of Standard English as well as those who speak other languages and varieties of English.
PreReq: 5468.

5470 Assessment and Instruction for Struggling Readers U G 3
Provides an introduction to theories, assessments, and instructional practices that effectively address the literacy needs of struggling and at-risk readers. Laboratory experience required.
PreReq: 5468 and 5469, or permission of instructor.

5471 Clinical Practice in Treating Reading Disabilities U G 3
Use of test materials in the diagnosis of reading disabilities; practice with remedial procedures. PreReq: 5470, or permission of instructor. Not open to students with credit for 671. Repeatable to a maximum of 6 cr hrs.

5501 Inclusion: Philosophical, Social, and Practice Issues: General Student Body U G 3
Philosophical, social, and practice issues related to the inclusion of students with disabilities in the P-12 general education classroom.
PreReq: Not open to students with credit for 809.07.

5505 Multi-Tiered Systems of Support U G 3
Introduces students to the concept of multi-tiered systems of support. Emphasis on 1) strategies for assessing and teaching social skills to diverse learners in inclusive classrooms; 2) designing and implementing multi-tiered instructions within Response-to-Intervention Model; 3) collaborative differentiated instruction for whole class/small group, one-on-one teaching.
PreReq: 5501 or ESSpED 6505. Cross-listed in ESSpED.

5506 Reading and Writing Braille U G 3
This course provides future teachers of the visually impaired an efficient, learnable process-oriented experience to attain mastery of the literary braille code and to develop positive attitudes toward this valuable medium. The essential features and rules of usage of the braille code as published in The Rules of Unified English Braille (UEB), 2nd Edition (2013) are presented.
PreReq: Not open to students with credit for 6505 or 653.

5507 Visual Processes U G 3
Introduces students to the historical foundations, laws, and regulations that affect students with visual impairments. Students will also learn about anatomy and physiology of the eye, diseases, disorders, and eye specialists' reports.

5508 Modes of Communication and Instructional Materials U G 1
For Students with Visual Disabilities
Continuation of the examination of expressive modes of written communication with a focus on the Nemeth Code for mathematics and science. Knowledge of teaching strategies for mathematics is also studied.
PreReq: 6505 or 5505. Not open to students with credit for 6506.

5510 Basics of Orientation and Mobility U G 2
Presents an overview of the major historical events, mobility systems, resources, accessibility, safety, and roles of the O&M provider. Basic O&M techniques and instructional strategies are also provided.
5521 Co-Teaching and Co-Planning in the Inclusive Classroom
This three-credit hour course will examine the co-teaching and co-planning process across subject matter and disciplines such as general education and special education. Students will learn the approaches to co-teaching and co-planning, critically analyze the roles and responsibilities of each team member in the process, and contextually analyze leadership roles within the process.
Prereq: Not open to students with credit for 6501 or 747.

5525 Curriculum and Instruction for Students with Visual Impairments and Multiple Disabilities
Introduces individuals to principles of curricular and instructional design for all children with visual impairments (K-12). Adaptations and modifications, especially for the general education curriculum, are emphasized.
Prereq: Enrollment in a Grad or undergraduate EduTL program, or Grad non-degree.

5529 Introduction to Visual Impairments
This course explores theories and practices that connect relationships between general and special education needs of students with visual impairments, highlighting the use of a merged model of collaboration within learning environments. Coursework addresses an overview of services for students with visual impairments, including an emphasis on impact of vision loss.
Prereq: Enrollment in a Grad or undergraduate EduTL program, or Grad non-degree.

5530 Professional Development in the Field of Visual Impairment
Designed to allow the student to develop knowledge and skills in adaptive technology, early childhood intervention, and issues that are unique to the field of visual impairments.
Prereq: 5506, 5507, or 6507.

5610 Language Arts & ESL Instruction
Research, theories, and practices linking second language acquisition and methods of teaching reading, writing, listening, speaking and grammar in ESL and EFL classrooms.
Prereq: Admission to an undergraduate, graduate, or graduate non-degree program. Not open to students with credit for 606.

5612 Secondary Methods in World Language Education
Theory and practice of teaching world language in secondary (middle and high school) classrooms; use and preparation of instructional materials current theory and practice in world language teaching, learning, and assessment. Meets concurrently with 5613.
Prereq: Enrollment in Foreign Language B.S. Ed. or Master in Education program.

5613 Core Practices in World Language Education
This course will present theory and practice of teaching world language in beginning classes, based on current research on a practice-based approach to learning to teach focused on core practices. Teacher candidates will apply the practices studied in their field-based experience in the P-12 classroom, as preparation for the student teaching experience.
Prereq: Enrollment in World Language B.S. Ed. or M. Ed. program, or enrollment in Graduate Certificate in Core Practices in World Language Education.

5614 Teaching of Foreign Language in the Elementary School
Skill development in teaching of spoken and written foreign language on the elementary school level; construction and use of suitable materials; discussion of issues and problems, evaluation.
Prereq: Enrollment in Foreign Language B.S. Ed. or Foreign Language Master of Education. Not open to students with credit for 617.

5615 Methods and Culture in TESOL
Study of the use of new instructional materials for intermediate and advanced TESOL classes; teaching of reading, writing, literature, and culture; evaluation.
Prereq: Enrollment in Education major, Master in Education program, graduate non-degree or undergraduate non-degree (Extended Education) program.

5616 Core Practices for World Language Assessment
This course familiarizes students with current theory, standards, principles and practices of world language assessment. An understanding of the World-Readiness Standards for Language Learning is necessary for this course, since we will build upon this foundational knowledge to design formative and summative performance assessments using backward design.

5618 Advanced Core Practices in World Language Education
As the final course in the Graduate Certificate Program in Core Practices in World Language Education, this course caps participants’ repertoire of core practices addressed in the certificate program.

5620 Introduction to Second Language Acquisition
Studies of the theories underlying the teaching and learning of English as a second language and bilingual education: analyses of curricular designs and innovative programs.
Prereq: Enrollment in Education major, Master in Education program, graduate non-degree or undergraduate non-degree (Extended Education) program.

5630 Teaching Second Language Grammar and Vocabulary
Focuses on the teaching of grammar and vocabulary to second language learners. Various theories, models, and techniques associated with grammar and vocabulary instruction and learning are reviewed, and students gain hands-on experience in the application of this material.
Prereq: Enrollment in a Grad or undergraduate program in EduTL, or Grad non-degree program.

5640 Syllabus and Materials Development in Second Language Teaching
The development of syllabi and materials for language courses in alignment with theories of second language learning.
Prereq: Enrollment in Education major or Master in Education program. Not open to students with credit for 886.

5645 Assessing L2 Learning
Focuses on theories, models, and techniques associated with second language students’ learning and language proficiency with the aim of preparing students to critique established testing procedures and develop their own assessment instruments.
Prereq: Enrollment in a Grad or undergraduate EduTL program, or Grad non-degree.

5700 Training in Informal Science Outreach
Provides students with hands-on training in informal science education at the COSI museum. All students will learn to provide outreach education at the museum; advanced students will develop outreach materials, assist in the visible research operations, and mentor other students.
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. Cross-listed in Phys and Ling.

5711 Methods in Teaching STEM Secondary Mathematics I
Increase pedagogical content knowledge of number and probability concepts as appropriate for secondary students. Concepts such as ratio, fractions, decimals, percents, proportionality, data analysis and probability will be included.
Prereq: Admission to major or M.Ed. Not open to students with credit for 621 and 749.

5712 Methods in Teaching STEM Secondary Mathematics II
Pedagogical content knowledge of geometry and measurement as appropriate for Grades 7-12. Concepts such as similarity, transformations, representations, justification, and spatial reasoning will be included.
Prereq: Admission to the STEM major or M.Ed. Not open to students with credit for 749.01.

5721 Methods in Teaching STEM Secondary Science I
Preservice science teachers are introduced to the principles of safe scientific inquiry through activity-based lessons for grades 7-12. Microteaching experiences offer opportunities for students to develop and present science lessons.
Prereq: Enrollment to Education major or Master in Education program. Not open to students with credit for 636.01.

5722 Methods in Teaching STEM Secondary Science II
The nature of science is viewed from scientific, philosophical, sociological, and historical perspectives. Ideas fundamental to all science fields such as observation, inference, inquiry, hypothesis testing, models, theories, and laws are addressed.
Prereq: Enrollment to Education major or Master in Education program. Not open to students with credit for 751.

5741 Learning, Cognition, and Teaching in STEM Education
Cognitive development, cognition and affect in the learning of STEM subjects with implications for teaching in secondary school STEM.

5744 Technologies Used in STEM
The role and scope of educational technology for standards based STEM instruction. Exploration of areas in which mathematics, science education, and technology education can effectively use educational technology in a pedagogically sound manner.
Prereq: Not open to students with credit for 750.

5745 Assessment in STEM I: Introduction
Explores how prior knowledge and reasoning strategies impact meaningful learning in STEM fields. Discussions of assessment design and evaluation are framed within a value-added model of STEM teaching and learning.
Prereq: Admission to major or M.Ed. Not open to students with credit for 748.01.

5788 Study Tour
Specific content, location, terms of offering, and prerequisites vary; contact school office for details. Repeatable to different titled study tours only.
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions.

5808 Social Studies Methods I
Integrates methods of teaching social studies with daily field experiences to effect authentic teaching and learning for preservice teachers.
Prereq: Admission to MEd program and completion of content courses. Not open to students with credit for 638.

5809 Social Studies Methods II
Focuses on lesson/unit planning with an emphasis on authentic learning, higher level thinking skills, global and multicultural perspectives, active learning strategies, and performance-based assessment.
Prereq: Enrollment in Master of Education program and completion of content courses. Not open to students with credit for 639.

5892 Workshop
Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it.
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions.
Education: Teaching and Learning

5901 Advanced English as a Second Language G 3
Provides English language learners with extensive field-specific writing practice, with an emphasis on academic writing conventions, grammatical accuracy, and syntactic complexity. Intended for graduate students.
Prereq: Grad standing, and placement test.

5902 Academic Writing in English as a Second Language G 3
Attention given to various practices involving reading and source-based writing. Rhetorical and linguistic issues addressed. Writing about and presenting research findings in specific disciplines.
Prereq: A grade of D or above in 5901, or placement test score of 5902; and Grad standing.

5902 Special Topics in Education G 1 - 3
Special topics focused on education. Repeatable to a maximum of 12 cr hrs or 4 completions.

6050 Multiple Perspectives on Teaching and Learning: MA G 3 - 4
Investigates diverse ways of conceptualizing cognitive development and its relationship to learning and teaching and examine specific factors such as the development of memory, attention, problem solving, and specific academic skills.
Prereq: Not open to students with credit for 871.

6052 Classroom-Based Inquiry: MA G 3 - 4
Focuses on the history and evolving status of classroom-based inquiry and teacher action research. Students will develop a proposal for a classroom-based inquiry project, and will practice collecting and analyzing data and summarizing findings.
Prereq: Not open to students with credit for 874.

6053 Balanced Assessment for Teaching and Learning G 3
Organized to follow the conceptualization, design, and implementation of a balanced, coordinated approach to formative instructional and assessment practices.

6101 Dramatic Inquiry Across the Curriculum G 3
Using drama to extend inquiry-based learning in literacy and content areas.
Prereq: Not open to students with credit for 777. Repeatable to a maximum of 6 cr hrs.

6189 O&M Field Placement G 1
This one (1) hour graduate level course includes field experience requirements for students enrolled in the O&M Program.
Prereq: Enrollment in the Orientation and Mobility licensure program.

6301 Exploring Language and Learning in Classrooms G 3
Introduction to the use of discourse analysis in classroom instruction. Focus on principles, practices, analysis of instructional conversations, and implications for enhancing student learning. The course engages students in conducting discourse analyses of their own classrooms. Students must currently be teaching or co-teaching in a classroom and be able to video record events in that classroom.
Prereq: Enrollment in either M.A or M.Ed programs; or permission of Instructor. Repeatable to a maximum of 6 cr hrs.

6302 Teaching Digital Composition in Elementary and Secondary Classrooms G 3
Intended for elementary and secondary in-service teachers who want to explore and improve their students use of digital composition. The course emphasizes teachers using digital composition themselves as well as design of instruction for promoting students' use of digital composition.
Prereq: 7303, or permission of instructor. Repeatable to a maximum of 6 cr hrs.

6303 Linguistic Diversity in Education G 3
An introduction to linguistic diversity; how it relates to cultural diversity; how linguistic/cultural diversity shapes teaching and learning in educational settings; & what research says about effective instruction.
Prereq: Not open to students with credit for 703.07.

6510 Orientation and Mobility Intermediate Seminar G 3
Introduces a view of the history of the profession of orientation and mobility. It provides students with a foundation of understanding the process of planning, skill assessment, goal-setting, and designing and sequencing O&M programs.
Prereq: 5510 and 5507.

6511 Orientation and Mobility Advanced Seminar G 3
Presents important background information for Orientation and Mobility practitioners upon which techniques for instruction may be based. Unique characteristics of environments and principles for accessing them are presented.
Prereq: 8510.

6512 Orientation and Mobility Special Topics Seminar G 2
Highlights strategies for adaptations for early childhood and geriatric populations in the area of orientation and mobility. Considerations encountered in working with both types of populations explored.
Prereq: 8511.

6520 Orientation and Mobility Techniques and Methods I G 2
Covers introduction of the long cane, adaptive mobility devices, indoor travel, indoor orientation skills, route travel and residential travel skills. Practical instruction under a blindfold is a major component.
Prereq: 5510 and 5507.

6521 Orientation and Mobility Techniques and Methods II G 2
This hands-on course covers O&M techniques and methods for business areas, special travel environments, and public transportation. Practical skill instruction under blindfold is a major component of this course.
Prereq: 6520.

6645 Language as a Resource: The Functions of Language in Teaching and Learning G 3
The functions of language in teaching, learning, and schooling in general can reveal the underlying features of language use in these contexts. Whether in content-area literacy, Bilingual Education, Teaching English to Speakers of Other Languages (TESOL), or World Language Education, this course explores the language choices available based on the particular context in which language is used.

6808 Multicultural and Global Perspectives on Teaching and Learning G 3 - 4
Examines knowledge, pedagogy, reforms, and resources that support education for cultural diversity and equity in an interconnected world.
Prereq: Not open to students with credit for 881.

6890 M.Ed Capstone Seminar G 3
Seminar to prepare M.Ed students for the comprehensive written examination or approved alternative.
Prereq: Not open to students with credit for 926.

6891 M.A. Capstone Seminar G 2
Provides guidance for M.A. students working on final action research projects (or other approved projects), writing thesis proposals or preparing for the comprehensive examination.
Prereq: Not open to students with credit for 926.

6892 Special Topics in Education G 1 - 4
Special topics for professional educators and graduate students; designed to provide the opportunity to update professional skills and review current research developments.
Repeatable to a maximum of 16 cr hrs or 16 completions. This course is graded S/U.

6894 Co-Planning & Co-Teaching for Mentors of Interns G 1
Teachers will learn about a new model for mentoring student teachers that focuses on student learning. This apprenticeship model essentially causes the team to build strong working relationships. Teachers will learn how to make teaching decisions public so that the intern becomes better prepared to teach. Co-Planning & Co-Teaching is becoming the preferred model for mentoring student teachers.
This course is graded S/U.

6911 Writing for Coursework for International and 2nd Language Graduate Students G 2
Guidance and practice in writing in various genres essential to an academic career-essays, reviews, reports-the kind of writing required in grad-level coursework and end-of-term and comp. Tutorial time arranged. Intended for international graduate students.
Prereq: 5902, or qualified status; and permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

6912 Research Writing for International and 2nd Language Graduate Students G 2
Designed to help international graduate students in preparing a conference paper and in preparing a manuscript for publication.
Prereq: 5902, or qualified status; and permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

6913 Thesis Proposal and Dissertation Writing for International and 2nd Language Graduate Students G 2
Prereq: 5902 (508), or qualified status; and permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

7008 Sociocultural Studies of Teaching and Teacher Education G 3
A sociocultural look at ways teaching as a profession has been shaped by history, culture, gender; multiple agendas for teacher education; structure of current practice; different programs of reform; studies of teacher education.

7010 Diverse Approaches to Research on Teaching and Learning G 3 - 4
Explores the wide range of teaching and learning research genres; including multiple forms of statistical (quantitative), ethnographic (qualitative), historical and theoretical scholarship on teaching and learning.
Prereq: Not open to students with credit for 842.

7014 Epistemologies and Theories in Multicultural and Equity Studies in Education G 3
Examines and focuses in depth on various critical epistemologies, theories, and assumptions and the relationships between them and the pursuit of social justice.
Prereq: Not open to students with credit for 940.

7015 Curricular Approaches in Multicultural and Equity Studies in Education G 3
Studies the approaches of curricular approaches in MESSE drawn from local, national and global scholarship and contexts. Students examine a variety of curricular approaches towards social justice and activist praxis in education.
7025 Culturally Relevant Pedagogy G 3 Focuses on the research that informs culturally relevant pedagogy.

7035 Teaching for Social Justice G 3 An exploration into economic, political, technological and ecological components of multicultural education as it relates to diversity and social justice. Prereq: Not open to students with credit for 879.

7075 Disabilities in Education G 3 This three-credit graduate course for both MA and Ph.D. students will examine the historical nature of disabilities in society and in particular in the education system, the foundation of public laws to benefit persons with disabilities, the family–community connection for students with disabilities, and current critical issues for students with disabilities in classrooms.

7102 Drama, Literacy, and Learning G 3 Advanced studies in how drama affects literacy and learning. Prereq: Not open to students with credit for 888. Repeatable to a maximum of 6 cr hrs.

7170 Rethinking Early Childhood and Elementary Education: The Politics of Childhood G 3 Examination of important classical and contemporary research concerning young children with a focus on the preschool–early elementary years.

7189 Advanced Field Placement G 1 - 12 Field or research experience in a P–12 school, higher education or other educational setting, agency, or cross-cultural settings. Repeatable to a maximum of 20 cr hrs or 4 completions. This course is graded SU.

7193 Individual Studies G 1 - 15 Individual study projects. For thesis option, not more than 12 cr hrs will apply toward the master's degree. For non-thesis option, not more than 15 cr hrs will apply. Not more than 20 cr hrs will apply toward the doctoral degree. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs or 20 completions. This course is graded SU.

7194 Group Studies G 1 - 3 Group studies on special problems in education. Repeatable to a maximum of 12 cr hrs or 12 completions.

7303 Language and Society G 3 Focuses on the history, sociology, and the politics of national policies involving second language throughout the world. Prereq: Not open to students with credit for 803.

7306 Language Socialization G 3 Introduces the field of language socialization, providing theoretical, conceptual and methodological frameworks for research on linguistic and social development, teaching, and learning in various contexts. Prereq: Not open to students with credit for 906.

7308 Literary Experience and Understanding: Readers, Texts and Contexts G 3 Examines historical and current research on the interrelationships among children's and young adults' literary experiences, understanding, qualities of literary genres and formats, and reading in educational contexts. Prereq: Not open to students with credit for 908.

7316 Language Arts in the Early and Middle Childhood Program G 3 Process and support for language development in the early years. Problems, research, and current teaching methods in the major areas of language arts: listening, speaking, reading, writing, viewing, and constructing images. Prereq: Not open to students with credit for 860.

7317 Advanced Children's Literature G 3 An evaluation of the changing role of children's literature in the education of children and youth; emphasis on identifying quality selections developmentally appropriate books. Prereq: Not open to students with credit for 817.

7324 Literary Theory and Adolescent Literature G 3 Explores the application of diverse theories to young adult literature for in-depth literary study in secondary classrooms. Prereq: Not open to students with credit for 923.

7341 Poetry for Children G 3 In-depth study of poetry for children including children's speech play & school yard rhymes, children's interests in poetry, forms of poetry & representative poets, classroom approaches for encouraging children's involvement & appreciation of poetry. Prereq: Grad standing.

7344 Bilingualism and Biliteracy G 3 Explores research on bilingualism, bilingual communities, and bilingual education, as well as methods for studying bilingualism in social context. Issues are viewed from global perspective, especially language policies and language ideologies. Prereq: Not open to students with credit for 844.

7348 Linguistic Diversity and Literacy: Varieties of English and Education G 3 Explores variation in English and its implications for literacy education, focusing on global Englishes, U.S. vernaculars, and English-based Creoles. Course considers use of research for school testing and for the teaching of Academic English. Prereq: Not open to students with credit for 848.

7356 Advanced Literature for Adolescents G 3 An evaluation of literature for adolescents and the role it plays in the education of youth. Prereq: Not open to students with credit for 856.

7361 Literature in Early Childhood Education G 3 Analysis and study of fiction and nonfiction for children age 2–8; emphasis on the importance of early exposure to literature for language acquisition visual literacy, and cognitive and affective development. Prereq: Not open to students with credit for 861.

7364 Multicultural Literature for Children and Young Adults G 3 Focus on educational and interdisciplinary research concerned with selecting, analyzing, and discussing diverse children's and YA literature, created by historically marginalized authors and illustrators. Literature selections include the life experiences, histories, and fantastic visions representing LGBTQ, Native American, African American, Latina, Asian American, and new immigrant experiences. Prereq: Not open to students with credit for 864.

7371 Teaching Writing in the Secondary School G 2 - 3 Designed to assist teachers' understanding of writing development and writing assessment in order to develop process-oriented approaches to writing instruction. Prereq: Not open to students with credit for 910.

7374 Sociocultural Theory and Literacy Education and Research G 3 Examines the core concepts of sociocultural theory, several branches of this work in education, and their implications for contemporary studies of literacy teaching and learning. Prereq: Not open to students with credit for 974.

7393 Teaching Writing G 2 - 6 Serves as the Summer Institute of the Columbus Area Writing Project. It focuses on improving the teaching of writing for experienced teachers of all subject areas in grades K–16. Prereq: Not open to students with credit for 908.

7418 Synthesizing Research in Reading and Literacy G 3 Students gain an in-depth understanding of how to review, analyze, and synthesize research in reading and literacy. The focus is on the process of reviewing and synthesizing research (rather than on the content). Repeatable to a maximum of 6 cr hrs.

7420 Teaching Literature for Engagement and Equity G 3 Study of theory and arts-based practices in reading and literacy education, that demonstrate how teachers can support readers' engagement with cross-cultural perspectives, social positioning, cultural identity and social justice.

7427 Advanced Study of the Development of Reading and Writing G 3 Designed to provide experienced teachers the opportunity to extend and update their knowledge of reading and writing development and the principles underlying effective reading and writing instruction in the early and late childhood years.

7428 Trends and Issues in Teaching Reading G 3 In-depth examination of major trends and issues in teaching reading in the elementary school including research over the last three decades and major issues and concerns currently debated among members of the literacy education profession. Prereq: Not open to students with credit for 828.

7429 Reading Complex Texts G 3 For elementary, middle, and secondary teachers who want to develop new multimodal approaches for challenging students to read with greater attention to details and deeper meaning, with a more difficult range of vocabulary and texts.

7430 Phonics, Word Study, & the Complexities of English Orthography G 3 Learn the historical influences on contemporary American-English spellings. Study the technical vocabulary associated with phonics, word study, & English orthography; how to administer and analyze appropriate assessments for elementary and middle school students; and, how to implement instruction to support student learning.

7431 The Ethnography of Literacy and Language I G 4 Introduces the ethnography of literacy and language as fields of inquiry, providing theoretical, conceptual and methodological frameworks for research on written and oral language practices that are embedded in various social, cultural, and political contexts. Prereq: Not open to students with credit for 905. This course is progress graded.

7432 The Ethnography of Literacy and Language II G 4 Building on the first course of this two-course sequence, this course provides students experience in doing their own research by focusing on data gathering, fieldwork issues, data analysis, and writing aspects of the ethnographic research process. Prereq: 7431 (905), or permission of instructor. Not open to students with credit for 925.10.
152 Education: Teaching and Learning

7500 Teacher Leadership in Teaching Digital Writing G 2
Prepares teachers and other educators to conceptualize and deliver teacher education for the integration of digital writing in K-12 classrooms. Through a series of face-to-face and online interactions, participants develop a portfolio of digital writing, a theoretical framework for the use of digital writing in instruction, and a research-based framework for professional development.
Prereq: 7353, or permission of instructor.

7620 English as an International Language: Theory and Practice G 3
Introduces students to the perspective of EIL (English as an International Language) and helps them to think critically about global English in use and English language teaching practices from the viewpoint of EIL.

7645 Issues and Research in Foreign Language Testing and Assessment G 3
Focuses on theories and practices for testing and assessing the knowledge and skills of second language learners. Topics include constructing tests and assessments, validity, reliability, grading, and test score interpretation test scores.
Prereq: Enrollment in a graduate program in T&L or graduate non-degree program. Not open to students with credit for 963.09.

7701 Mathematics Teaching and Learning in Elementary and Middle Schools G 3
Provides elementary or middle school teachers with skills and knowledge that will strengthen their teaching of mathematical content knowledge and process skills.
Prereq: Not open to students with credit for 812.

7705 Cognition and Socio-Cultural Issues in School Mathematics G 2
To be successful educators, participants need to have knowledge of child development, child psychology, and influences on student learning such as cultural diversity, limited English proficiency, gender, and physical challenges.
Prereq: Not open to students with credit for 721.01.

7706 Science and Early Childhood Education G 3
The nature, scope, and role of science experiences in the learning and development of young children; integration and application of current developments in children’s learning and research in science with early childhood education.
Prereq: Not open to students with credit for 852.

7711 K-6 Number and Algebra G 2
Students will understand concepts such as number, number sense, variable, and equality through an opportunity to learn at a deeper level and to examine instructional strategies to help children.
Prereq: Not open to students with credit for 711.

7712 K-6 Measurement and Geometry G 2
Students will understand concepts such as spatial sense, units of measure, and work with two- and three-dimensional objects through an opportunity to learn at a deeper level and to examine instructional strategies to help children.
Prereq: Not open to students with credit for 711.

7713 K-6 Data Analysis and Probability G 2
Students will understand concepts such as chance and possible outcomes and predicting events as likely or unlikely, and testing predictions, and representational skills to depict and analyze data sets.
Prereq: Not open to students with credit for 711.

7715 Learning Progressions in Mathematics Education G 3
Examine the construction, use, and research on learning progressions in mathematics education.
Prereq: Not open to students with credit for 742.

7716 Conceptual and Procedural Knowledge in Mathematics Education: Theory, Research, and Controversy G 3
Examine research on students' learning of conceptual and procedural knowledge. We will carefully examine the nature of each type of knowledge, how they are acquired, how they are used, and how they are related.

7717 Teaching Mathematics G 3
Designed to provide an expanded view of the teaching of mathematics in grades 7-16 and current theories regarding best practices.
Prereq: Not open to students with credit for 802.03.

7718 Student Learning Processes in Mathematics G 3
Student cognition and learning. The topics of arithmetic, algebra and geometry will be used to explore issues of student thinking. We will investigate how the nature of these topics affect students' reasoning and problem solving and thinking.
Prereq: Not open to students with credit for 802.05.

7719 Providing Professional Development in Mathematics Education G 2
Require teachers to develop a professional development program that will provide them the opportunity to implement and reflect upon this development as a final assessment of their endorsement.
Prereq: Not open to students with credit for 714.

7724 Teaching Evolution in Schools G 3
Focuses on issues, alternative practices, and curricular approaches related to teaching evolution in public schools. Research, court cases, and policies related to the teaching of evolution are examined.
Prereq: Coursework in Evolutionary Biology, or teaching licensure in life science; or permission of instructor. Not open to students with credit for 875.

7725 The Nature of Science and Implications for Science Teaching G 3
Focuses on the nature of science and scientific knowledge from philosophical, historical, and sociological perspectives, examines the implications for science teaching at all levels, with particular emphasis on K-12 public education.
Prereq: Not open to students with credit for 877.

7726 STEM Education in Informal Settings G 3
Provides STEM educators with experiences to develop skills, content knowledge, professional knowledge, assessment strategies, and integration skills to maximize learning of all students in informal STEM settings.
Prereq: Not open to students with credit for 880.

7731 Multimedia Tools For STEM Education G 3
Introduction to a wide variety of multimedia tools for use in STEM Education. The tools are constantly changing but some of the areas included are sensors, data collection, graphics, animation, presentation, audio, video, and multimedia authoring.
Prereq: Not open to students with credit for 735. Repeatable to a maximum of 9 cr hrs.

7732 Robotics and Automation for STEM Educators G 3
An introduction to robotics and automation systems, their applications, and methods of teaching about and with them. Will include experiences related to the design, selection, set-up, and programming of robotic and automation systems.
Prereq: Not open to students with credit for 938.21.

7741 Advanced Study of Learning and Cognition in STEM G 3
Theories of learning and cognition as applied to learning, teaching and research in the STEM Education areas. Additional focus may be on affective issues.
Prereq: Not open to students with credit for 721.

7744 Problem Solving in STEM G 3
Help students gain a deeper understanding of the process of mathematical problem solving from an epistemological standpoint. Current theories and perspectives associated with teaching and learning problem solving will be studied.
Prereq: Not open to students with credit for 802.04.

7745 Classroom Discourse in STEM Learning G 3
Theory and practice on discourse patterns in STEM classrooms, including speaking, reading and writing to learn STEM subject matter in schools or colleges.
Prereq: Not open to students with credit for 802.

7747 Science, Mathematics, Technology and the Educated Mind G 3
Examines public understanding of science, mathematics, and technology in the growth and application of knowledge, with particular attention being given to the implications for general education in these fields.

7749 History, Future, and Practical Applications of Concept Inventories in STEM Education G 3
Introduction to creation, validation, evaluation and application of concept inventories in STEM education; a gateway course for future academic career in both STEM and education.
Prereq: Not open to students with credit for 810.

7799 Thesis Research G 1 - 15
Research for thesis purposes only, Repeatable to a maximum of 40 cr hrs or 12 completions. This course is graded S/U.

8001 Discourse Analysis and Educational Research I G 4
Introduction to discourse analysis in educational research, theories, field work, data collection, analytic procedures including video and audio analysis, and ethics. First course of two course sequence.
Prereq: Permission of instructor. 8001 and 8002 must be taken in the same academic year. Not open to students with credit for 933. Repeatable to a maximum of 8 cr hrs. This course is progress graded.

8002 Discourse Analysis and Educational Research II G 4
An in-depth exploration and application of discourse analysis theories and procedures for the analysis and interpretation of video, audio, and textual data collected in field-based educational research. This is the second course of two courses
Prereq: Permission of instructor. 8001 and 8002 must be taken in the same academic year. Not open to students with credit for 934. Repeatable to a maximum of 8 cr hrs.

8003 Theorizing and Researching Teaching and Learning G 4
Examines how learning and teaching have been theorized and researched and provides an opportunity for students to begin conceptualizing their own studies. Emphasis is placed on teaching and learning as contextualized processes.
Prereq: Not open to students with credit for 975, 976, and 977.
8010 Critical Discourse Analysis  G  3
Explores perspectives on discourse analytical research that primarily studies the way social power abuse, dominance, and inequality are enacted, reproduced, and resisted by text and talk in social and political contexts.
Prereq: Must have taken at least 1 PhD level course. Not open to students with credit for 933.

8015 Diversity and Equity in Education  G  4
Provides an overview of the pervasive individual, epistemological, structural, systemic, and institutional dimensions and complexities of equity, diversity and multiculturalism.
Prereq: Not open to students with credit for 976.

8020 Critical Race Theory in Education  G  3
Prereq: Not open to students with credit for 977.

8081 Introductory Seminar: Applied Developmental Science in Education  G  3
An introductory professional seminar for doctoral students seeking the Interdisciplinary PhD Specialization in Applied Developmental Science in Education (ADS-E). Cross-listed in EducSt and HDFS.

8082 Capstone Seminar: Applied Developmental Science in Education  G  3
A capstone professional seminar for doctoral students enrolled in the Interdisciplinary PhD Specialization in Applied Developmental Science in Education (ADS-E). Prereq: 8081 or EducSt 8081 or HDFS 8081. Cross-listed in EducSt and HDFS.

8301 Research and Theory on Adolescent, Post-Secondary, and Community Literacies  G  3
Critical examination of trends and issues in research and theory on adolescent, post-secondary, and community literacies.

8306 African American Language and Literacies  G  3
Examination of research and theory in African American language and literacies studies.
Prereq: Credit for at least one Doctoral-level course. Not open to students with credit for 906.

8307 History of Children’s and Young Adult Literature  G  3
A seminar focusing on the history of American and English Children’s literature from earliest times to the present.
Prereq: Not open to students with credit for 907.

8311 Research in Emergent Literacy  G  3
Current topics and issues concerning the development of literacy in young children, particularly the achievement of emergent literacy and the transition from emergent to early literacy, generally pre K through 1st grade.
Prereq: Not open to students with credit for 911.

8313 Research and Theory in Written Composition  G  3
Considers writing in variety of contexts-primary school, middle school, high school, college, and the larger community—from the perspective of research; broader issues of how attention to culture and context can provide more responsive instruction.
Prereq: Not open to students with credit for 913 and 914.

8334 Research Methods for Literature and in Children and Young Adults  G  4
Immures students in the methodology, practice, and application of conducting academic research in the field of Literature for Children and Young Adults. The class will aid in their professionalization by having students explore an array of peer-reviewed journals, a variety of major national as well as international conferences, and current scholarly trends in the field.

8363 Sociolinguistics and Language Education  G  3
Surveys foundational theories, issues, and methodologies in sociolinguistics. We examine how these theoretical insights & empirical approaches have been used to study & illuminate topics of concern to language education.
Prereq: Not open to students with credit for 863.

8420 Professional Seminar for Doctoral Students in Teaching and Learning  G  3
In this seminar, students will gain professional knowledge aimed at facilitating success within the doctoral program. Students will become acquainted with both the explicit and tacit expectations of doctoral study and acquire competencies that will support their continued development as scholars. Repeatable to a maximum of 9 cr hrs.

8421 Guided Survey of Research in Reading  G  3
Explores various investigations of reading and literacy. It examines major trends in reading/literacy research and exemplary studies that address major topics, including methodological issues, basic processes, and instructional practices.
Prereq: Not open to students with credit for 921. Repeatable to a maximum of 6 cr hrs.

8425 Understanding the Reading Process  G  3
Focuses on the young child as a learner and on the reading process itself. Explores and extends personal models of the reading process and grounds theory building in close observations of young children reading.

8426 Advanced Study in Reading Difficulties of Young Children  G  3
Current thinking on reading and learning processes relative to young, low progress, "at risk" students, and seminal research and theories which have influenced the reading difficulties field will be related to students who are difficult to teach.

8427 Learning and Teaching Reading Comprehension  G  3
Designed to provide doctoral students knowledge of the research on reading comprehension.

8510 Second Language Acquisition  G  3
Provides an overview of theories and research in the field of second language acquisition (SLA). We examine the development of SLA as a field, exploring cognitive, linguistic, sociocultural, and critical research perspectives.
Prereq: Not open to students with credit for 703.09.

8615 Classroom-Oriented Second Language Research  G  3
Aims to help doctoral students to understand the steps involved in designing a qualitative second-language (L2) research project, to critically evaluate published research, and to consider key issues in designing their own L2 study.
Prereq: Not open to students with credit for 916.

8617 Issues in Second Language Learning  G  3
Lecture and discussion course focused on current issues related to second language acquisition research.
Prereq: 916. Not open to students with credit for 917.

8620 Language Teacher Education  G  3
Deals with foreign and second language teacher education program designs with a focus on goals, objectives, programming, and accreditation models. It is designed for those who are majoring in either TESOL or foreign language education.
Prereq: Grad admission as a foreign and 2nd lang ed program major or in an equiv. program related to global ed, multicultural ed, or a foreign language major in one of the OSU lang. dept (e.g., Spanish, German, Chinese).

8625 First Year Doctoral Seminar in Foreign Language Education  G  3
Focuses on scholarly discourse communities, contemporary research priorities, programmatic themes and research approaches related to foreign language education.
Prereq: Not open to students with credit for 937.45.

8630 The Dissertation Experience in Foreign Language Education  G  3
Designed to meet the needs of students who are approaching the dissertation research and writing experiences.
Prereq: Not open to students with credit for 938.45.

8635 Research on Second Language Reading and Writing  G  3
Explores research and research practices related to Second Language reading and writing.
Prereq: Not open to students with credit for 960.

8640 Seminar in Foreign Language Education  G  3
A special topics course that examines theories and research related to a specified topic related to foreign language education.
Prereq: Not open to students with credit for 962.

8701 Advanced Concepts in Elementary School Science Education  G  3
Helps doctoral students develop the knowledge and skills necessary to critically analyze reports of educational research, specifically for elementary science education.
Prereq: Not open to students with credit for 920.

8711 Current Issues and Trends in STEM Education  G  3
An introductory seminar for new STEM education doctoral students and other advanced graduate students seeking increased familiarity with STEM education research communities.

8721 Advanced Study of Thinking, Learning, and Assessment in Mathematics Education  G  3
Develop a deep, foundational knowledge of various theories and types of research on mathematical thinking and learning. Students will also develop knowledge of ways of assessing mathematical knowledge, thinking, and reasoning.
Prereq: Not open to students with credit for 938.26.

8722 Advanced Study of Thinking, Learning, & Assessment in Science Education  G  3
Focuses on advanced skills and knowledge used to understand how thinking, learning, and assessment occur in science education programs.
Prereq: Not open to students with credit for 938.27.

8731 Teaching and Teacher Education in STEM Education  G  3
Students develop the knowledge and skills necessary to critically analyze reports of educational research, current thinking and perspectives, critical issues associated with science and mathematics teacher education and teacher preparation.
Prereq: Not open to students with credit for 999.23.

8741 History of Curriculum in STEM Education  G  3
Familiarizes students with the changing curriculum in school mathematics. It will examine the history and evolution of K-16 STEM curricula in the United States with particular emphasis on the past century (1890 to 2010).
Prereq: Not open to students with credit for 937.26.
**154 Education: Teaching and Learning**

**8742 History of Curriculum in Science Education**  
G 3  
Focuses on the forces that have shaped the emergence of contemporary curriculum patterns in science education, with particular emphasis given to the trends, issues, and policies that have shaped science curriculum design and development.  
Prereq: Not open to students with credit for 937.27.

**8743 History of Curriculum in Technology/Engineering Education**  
G 3  
The history of curriculum development in technology and engineering education from the elementary grades to the graduate level.  
Prereq: Not open to students with credit for 937.21.

**8751 Survey and Critical Analysis of Research in STEM Education**  
G 3  
Examines critical issues associated with conducting and analyzing research in STEM education including formulating and evaluating the following: research questions, methodologies, data collection instruments, and analysis techniques.

**8890 Advanced Seminar**  
G 1 - 4  
Advanced graduate seminar focusing on educational scholarship.  
Prereq: Permission of instructor. Repeatable to a maximum of 40 cr hrs or 10 completions.

**8998 Research Apprenticeship in Teaching and Learning**  
G 2 - 8  
The process of researching teaching and learning are explored through working with a faculty member on an established research project.  
Prereq: Permission of PhD coordinator required. Repeatable to a maximum of 30 cr hrs or 15 completions. This course is graded S/U.

**8999 Research**  
G 1 - 15  
Research for dissertation purposes only. Repeatable to a maximum of 40 cr hrs or 12 completions. This course is graded S/U.

**Educational Studies**

**2199S First Education Experience Program (FEEP)**  
U 3 - 5  
Provides opportunities for students to explore education as a possible career path via a combination of field and seminar requirements. Students spend time in local, public PreK-12 school-based settings, interacting with various professionals and students. GE service learning course.

**5189 First Education Experience Program (FEEP)**  
U G 3 - 5  
The purpose of this course is to provide opportunities for students to explore education settings via a combination of field and seminar requirements and to reflect on how those experiences in this course intersect with the chosen career. The students will spend time in local preK-12 school settings, interacting with various professionals and students.

**5193 Individual Studies: Educational Studies**  
U G 1 - 15  
Individual study projects.  
Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs or 24 completions. This course is graded S/U.

**5194 Group Studies: Educational Studies**  
U G 1 - 15  
Group study projects.  
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 15 completions. This course is graded S/U.

**5765 Grant Writing**  
U G 3  
Provides an overview of the grant writing process. Repeatable to a maximum of 6 cr hrs.

**5798.01 Study Tour: Domestic**  
U G 1 - 5  
Specific content, location, semester(s) of offering, and prerequisites vary; contact department office for details. Repeatable for different titled study tours only.  
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 15 completions. This course is graded S/U.

**5798.02 Study Tour: Foreign**  
U G 1 - 5  
Specific content, location, semester(s) of offering, and prerequisites vary; contact department office for details.  
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 15 completions for different titled study tours only. This course is graded S/U.

**5880.01 Interprofessional Education: Seminar on Interprofessional Care**  
G 2  
Develop and practice skills necessary for interprofessional collaboration in solving complex human problems. Case based.  
Prereq: Jr standing, or above. Repeatable to a maximum of 4 cr hrs. Cross-listed in HthRhSc and Nursing and MedColl 6880.01.

**5880.03 Interprofessional Education: Seminar on Ethical Issues Common to the Helping Professions**  
G 2  
Ethical issues common to the professions (e.g., rapidly advancing technology, death/dying, privacy/confidentiality, professional boundaries). Case based. Limited to students enrolled in Health and Rehabilitation Science, Education, Nursing, and the College of Medicine.  
Prereq: Jr standing or above. Repeatable to a maximum of 4 cr hrs. Cross-listed in HthRhSc and Nursing and MedColl 6880.03.

**5880.04 Interprofessional Education: Collaboration in Urban Communities**  
U G 3  
Students, faculty, community residents and professionals offer research-based solutions to community identified challenges. Focus on community asset mapping, best professional and interprofessional practices, and teamwork.  
Prereq: Jr standing or above. Repeatable to a maximum of 6 cr hrs. Cross-listed in HthRhSc and Nursing.

**5880.07 Interprofessional Approaches to Child Abuse and Neglect**  
U G 2  
Interdisciplinary approach to exploring issues in the identification, treatment, and prevention of child abuse and neglect.  
Prereq: Jr standing, or above. Repeatable to a maximum of 4 cr hrs. Cross-listed in MedColl 6880.07.

**5892 Colloquia, Workshops and Special Topics: Educational Studies**  
G 1 - 8  
Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it.  
Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 9 completions. This course is graded S/U.

**6891 Proseminar in Educational Studies**  
G 3  
An introduction to the areas of research in the Department of Educational Studies This is a core requirement for doctoral students.  
Prereq: Admission to a doctoral program in Educational Studies.

**6892 Educational Policy and Inequality in Social and Cultural Context: Integrating Research Traditions**  
G 3  
An introductory seminar course addressing issues of race, ethnicity, language, class, gender, sexuality, and disability as they influence and are influenced by educational policy processes. This is a core requirement for doctoral students.  
Prereq: Admission to a doctoral program in Educational Studies.

**7189 Planned Field Experience: Foreign**  
G 1 - 15  
Planned professional teaching experience under supervision in a public school or other educational agency.  
Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs or 24 completions. This course is graded S/U.

**7406 Course Design for Higher Education**  
G 3  
Students will gain an understanding of how to design a course based on goals and objectives. They will begin the work of planning, within a community of peers, and will leave with the basic structure for a course and the beginnings for materials. Participants will share experiences and ideas, design and implement instructional activities, and develop strategies for assessing teaching and learning.

**7717 Interdisciplinary Perspectives on Developmental Disabilities**  
G 3  
Introduction to the psychosocial, medical, and educational implications of developmental disabilities.  
Prereq: Permission of instructor. Not open to students with credit for EduPAES 717.01 or 717.03. Cross-listed in HthRhSc, SocWork, Psych, Nursing, and SphHrng.

**7718 Interdisciplinary Perspectives on Autism Spectrum Disorders**  
G 3  
Teaches the analytical skills necessary to comprehend and formulate an interdisciplinary framework relating to major scientific and theoretical perspectives in autism spectrum disorders.  
Prereq: Permission of instructor. Not open to students with credit for EduPAES 717.01 and 717.02. Cross-listed in HthRhSc, SocWork, Psych, Nursing, and SphHrng.

**7807 Special Topics: Educational Studies**  
G 1 - 5  
Special topics for professional educators and graduate students in selected areas; designed to provide the opportunity to update professional skills and review current research developments.  
Prereq: Grad standing, or registration in one of the professional schools. Repeatable to a maximum of 18 cr hrs or 18 completions. This course is graded S/U.

**7999 Thesis Research: Educational Studies**  
G 1 - 18  
Research related to the Master's thesis.  
Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions. This course is graded S/U.

**8081 Introductory Seminar: Applied Developmental Science in Education**  
G 3  
An introductory professional seminar for doctoral students seeking the Interdisciplinary PhD Specialization in Applied Developmental Science in Education (ADS-E). Cross-listed in EduTL and HDFS.

**8082 Capstone Seminar: Applied Developmental Science in Education**  
G 3  
A capstone professional seminar for doctoral students enrolled in the Interdisciplinary PhD Specialization in Applied Developmental Science in Education (ADS-E).  
Prereq: 8081 or EduTL 8081. Cross-listed in EduTL and HDFS.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>8189</td>
<td>Planned Field Experience: Educational Studies</td>
<td>G 1 - 15</td>
<td>Planned professional teaching experience under supervision in a public school or other educational agency. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs or 24 completions. This course is graded S/U.</td>
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<tr>
<td>8191</td>
<td>Research Apprenticeship: Educational Studies</td>
<td>G 1 - 12</td>
<td>Internship experiences in research, development, or evaluation settings. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 4 completions.</td>
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<tr>
<td>8193</td>
<td>Advanced Individual Studies: Educational Studies</td>
<td>G 1 - 15</td>
<td>Advanced individual projects. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions. This course is graded S/U.</td>
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<tr>
<td>8194</td>
<td>Advanced Group Studies: Educational Studies</td>
<td>G 1 - 15</td>
<td>Advanced group projects. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 15 completions. This course is graded S/U.</td>
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<tr>
<td>8895</td>
<td>Seminars: Educational Studies</td>
<td>G 2 - 5</td>
<td>Seminar in topics of special interest. Students with permission of advisers may register for more than one section of 8895, or for the same section two or more times. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs or 12 completions.</td>
</tr>
</tbody>
</table>
Educational Studies: Counselor Education

7932 Psychopathology, Trauma, and Crisis Counseling G 3
Study and application of treatment of major mental disorders, trauma, and crisis counseling.
Prereq: 6731 and 6931, and admission to Counselor Education program.

7933 Wellness and Prevention Counseling G 3
Study and application of principles and practices of wellness and prevention in counseling.
Prereq: 6731, and admission to Counselor Education program.

7934 Theories of Counseling Supervision G 1½
Study and application of concepts and practices of supervision for counselors and therapists.
Prereq: 6731 and admission to Counselor Education program.

7935 Advanced Assessment: Personality Testing G 4
Study and application of principles and practices of comprehensive psychological evaluations.
Prereq: 6731 and 6734, and admission to Counselor Education program.

8100 Leadership in Counselor Education G 3
Study and application of the principles and practices of leadership in professional counseling and counselor education.
Prereq: Admission to Doctor program in Counselor Education.

8191.01 Doctoral Practicum in Counselor Education G 2 - 8
Practicum in doctoral studies in counselor education.
Prereq: Admission to Doc program in Counselor Education, and permission of instructor. Repeatable to a maximum of 8 cr hrs or 4 completions. This course is graded S/U.

8191.02 Doctoral Internship: Counselor Education - Supervision G 2 - 10
Field experience in doctoral studies in counselor education: Supervision.
Prereq: Admission to Doc program in Counselor Education, and permission of instructor. Repeatable to a maximum of 10 cr hrs or 4 completions. This course is graded S/U.

8191.03 Doctoral Internship: Counselor Education - Teaching G 2 - 10
Field experience in doctoral studies in counselor education: Teaching.
Prereq: Admission to Doc program in Counselor Education program, and permission of instructor. Repeatable to a maximum of 10 cr hrs or 4 completions. This course is graded S/U.

8191.04 Doctoral Internship: Counselor Education - Counseling G 0 - 10
Field experience in doctoral studies in counselor education: Counseling.
Prereq: Admission to Doc program in Counselor Education program, and permission of instructor. Repeatable to a maximum of 10 cr hrs or 4 completions. This course is graded S/U.

8191.05 Doctoral Internship: Counselor Education: Research G 2 - 10
Field experience in Counselor Education: Research.
Prereq: Admission to Doctoral program in Counselor Education, and permission of instructor. Repeatable to a maximum of 10 cr hrs or 5 completions. This course is graded S/U.

8193 Advanced Independent Studies: Counselor Education G 1 - 12
Advanced independent study in Counselor Education.
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions. This course is graded S/U.

8200 Critical Pedagogy Issues In Counselor Education G 3
Study and application of the principles and practices of teaching counseling in graduate counselor education programs.
Prereq: Admission to Doc program in Counselor Education.

8300 Developing a Research Identity in Counselor Education G 3
Study and application of principles and practices of developing a research agenda and professional scholarship in counselor education.
Prereq: Admission to Doctor program in Counselor Education.

8400 Critical Research Issues in Counselor Education G 3
Study and application of principles and practices of research and professional scholarship in counselor education.
Prereq: Admission to Doc program in Counselor Education.

8895 Seminars: Counselor Ed G 1 - 4
Study, discussion, and application of concepts related to doctoral study in counselor education. Repeatable to a maximum of 4 cr hrs or 4 completions. This course is graded S/U.

8999 Dissertation/Thesis Research: Counselor Education G 1 - 9
Dissertation research - research conducted for dissertation, under supervision of faculty advisor.
Prereq: Permission of Instructor. Repeatable to a maximum of 9 cr hrs or 9 completions. This course is graded S/U.

Educational Studies: Cultural Foundations of Educ

5194 Group Studies: Cultural Foundations of Education U G 1 - 15
Group study projects.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 15 completions. This course is graded S/U.

7214 An Interpretive History of African American Education: 1700 to 1950 G 3
Examination of the education of African Americans from the perspective of African American scholars from 1700 to 1950.
Prereq: Not open to students with credit for EduPL 886.

8193 Advanced Individual Studies: Cultural Foundations of Education G 1 - 15
Advanced individual projects.
Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions. This course is graded S/U.

8194 Advanced Group Studies: Cultural Foundations of Education G 1 - 15
Advanced group projects.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 15 completions. This course is graded S/U.

8999 Dissertation or Thesis Research: Cultural Foundations of Education G 1 - 18
Research for thesis or dissertation purposes.
Prereq: Permission of instructor. Repeatable. This course is graded S/U.
Planned School District Field Experience  G  2 - 5
The candidate synthesizes and applies knowledge and skills through substantial, sustained, standards-based field work, planned and guided cooperatively by the licensure adviser and school district. Repeatable to a maximum of 8 cr hrs or 2 completions. This course is progress graded (S/U).

7350 School Improvement for Educational Leaders  G  3
Applies theory from classroom management, learning, motivation, and teaching to the practice of PreK-12 education. Repeatable to a maximum of 6 cr hrs.

7356 Instructional Leadership and Supervision  G  3
Instructional leadership requires the development of an organization and its members in support of its teaching and learning mission. Prereq: Not open to students with credit for EduPL 726 or 891.01.

7359 Leadership, Inquiry, and Ethics  G  3
Authentic learning leading to application in practice in educational organizations. This is a core course in administrator certification. Learning promotes three primary principles: leadership, inquiry, and ethics.

7362 Board Politics and Public Relations  G  3
Explores board of education and superintendent roles and responsibilities in the governance of the school district and the dynamic nature of board-superintendent relationships. Prereq: Not open to students with credit for EduPL 962.

7364 Finance of School Districts  G  3
Explores the collective dimensions of leadership and the larger context of school finance that emphasizes economics and politics. Prereq: Not open to students with credit for EduPL 724.

7366 Administrative Responsibilities, Policy, and Perspectives  G  3
Role of the superintendent in standards-based education reform and the improvement of the instructional program to serve diverse student needs effectively and equitably. Prereq: Permission of instructor. Not open to students with credit for EduPL 725 or 843.

7368 Educational Facility Planning  G  3
Introduces knowledge, dispositions, and performances necessary for planning, designing, and building schools; explores notions of architectural quality, aesthetic experience, and school as public place. Prereq: Not open to students with credit for EduPL 958.

7374 Theory and Foundations of Supervision  G  3
Addresses theory, concepts, and research related to supervision and is intended to develop comprehension of the major points-of-view, elements, and constructs that influence the practice of supervision. Prereq: Not open to students with credit for EduPL 866.

7881 Instructional Leadership  G  1 - 3
This course will provide opportunities for students to analyze and evaluate the meaning, practice and impact of instructional leadership in schools. Course readings will focus on the mechanisms through which school principals lead teacher teams to improve instruction by developing internally coherent systems of collaboration and common understandings of effective teaching practice. Prereq: Enrollment in BRIGHT MBA. Repeatable to a maximum of 3 cr hrs. This course is progress graded.

7882 Theories of Instruction  G  1
This course will explore three different conceptual frameworks for learning developed over the course of the twentieth century, including socio-cognitive, socio-historical and cultural-historical, and instruction using technologies. Prereq: Enrollment in BRIGHT MBA program.

7883.01 Culture & Efficacy in Education  G  1½
The course will provide participants with the opportunity to develop a multicultural awareness and develop cultural competency as they explore the impact of an increasingly diverse society in the United States. Particular emphasis will be placed on gaining self-awareness around issues of cultural diversity as well as expanding one's knowledge base in the area of diversity. Prereq: Enrollment in BRIGHT MBA. Concur: 7883.02.

7883.02 Culture & Efficacy in Education  G  1½
The course will provide participants with the opportunity to develop a multicultural awareness and develop cultural competency as they explore the impact of an increasingly diverse society in the United States. Particular emphasis will be placed on gaining self-awareness around issues of cultural diversity as well as expanding one's knowledge base in the area of diversity. Prereq: 7883.01, and enrollment in BRIGHT MBA.

7884 Curriculum Design  G  1½
This course is a compilation of curriculum history, issues, and development, primarily to facilitate an understanding of what curriculum means, looks like, and how it can be created, implemented, critiqued, assessed and modified for use in classrooms. Prereq: Enrollment in BRIGHT MBA program.

7885 School Law  G  1½
The course is designed to help school leaders explore the interplay of law, policy, and educational leadership and practice. Prereq: Enrollment in BRIGHT MBA.

7886 Data Driven Improvement for School Leaders  G  1 - 2
This course is designed to assist school leaders in their understanding and ability to systematically use a variety of school data to impact teaching, learning, and decision-making for the purpose of increasing student success. The course also focuses on how school leaders can create conditions that foster effective data use. Prereq: Enrollment in BRIGHT MBA program. Repeatable to a maximum of 2 cr hrs. This course is progress graded.

7887 Literacy  G  1
This course presents an overview of reading achievement of students in American schools and instructional strategies for teaching reading skills in low resource schools with high poverty populations. Prereq: Enrollment in BRIGHT MBA program.

7888 Academic Motivation for School Administrators  G  1
This course is designed to introduce school administrators to current theory and research on academic motivation. Prereq: Enrollment in BRIGHT MBA program.

7897 Special Topics: Educational Administration  G  1 - 5
Special topics for professional educators and graduate students in selected areas; designed to provide the opportunity to update professional skills and review current research developments. Prereq: Grad standing, or registration in one of the professional schools. Repeatable to a maximum of 18 cr hrs or 18 completions. This course is graded S/U.

7999 Thesis Research: Educational Administration  G  1 - 18
Research for master's thesis purposes only. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions. This course is graded S/U.

8193 Advanced Individual Studies: Educational Administration  G  1 - 15
Advanced individual projects. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions. This course is graded S/U.

8194 Advanced Group Studies: Educational Administration  G  1 - 15
Advanced group projects. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 15 completions. This course is graded S/U.

8200 Place, Space and Leadership  G  3
The place and space are fundamental dimensions of the human experience. In this course, we will examine the ways in which place and space are produced and inhabited by people in various contexts and we will consider how space and place shape experiences of belonging, citizenship, and community in everyday life. Prereq: Admission to the EdD in Educational Administration program, or permission of instructor.

8201 Community-Based Research and Evaluation in Educational Administration  G  3
This course focuses on identifying, understanding and addressing problems of practice at the community level. Through class discussions and assignments, students will become familiar with the paradigm shift, developing community inquiry through problem mapping and evaluation and community based participatory research (CBPR). Cross-listed in ESQual.

8202 Positive Psychology and Educational Administration  G  3
This course helps present and future educational leadership understand the pressure on educational systems from the economic, technological, social, cultural, and political conditions of contemporary society, while exploring their implications and ways to enhance positive and effective leadership.

8310 Educational Change  G  3
The study and practice of strategies for implementing change in schools, including the development of shared vision, missions, goals, and interventions.

8317 Legal Aspects of Special Education Administration  G  3
Legislative, executive, and judicial policy and action pertaining to the rights of students with special needs, with a focus on the responsibilities of school administrators and state officials. Prereq: Not open to students with credit for EduPL 963.

8318 Seminar on Human Resources in Education  G  3
Expand knowledge and skills about human resource function in theory and practice; analyze and critique laws, policies, and practices related to the effective management of, and professional development for, human capital management in education.

8354 Legal Research In Educational Administration  G  3
Inquiry into the field of Educational Administration using Legal Research Methodology. Part of the doctoral core in Educational Administration. Prereq: Not open to students with credit for EduPL 971.
158 Educational Studies: Educational Administration

8356 Economic Viewpoints in Education  G  3
A study of K-12 education with emphasis on economic viewpoints about schooling. Human capital theory asserts that education is an investment. Signaling theory asserts that formal education is credentialing. Prereq: Admission to Educational Administration Doctoral Cohort. Not open to students with credit for EduPl 916.

8359 Organizational Behavior: Theory and Research  G  3
Analysis of relevant research and organizational theory for understanding schools. This is the first course in the Ph.D. doctoral core in educational administration. Prereq: 6350 or EduPl 6350 (846). Not open to students with credit for EduPl 959.

8361 Social and Political Contexts of Education  G  3
Examines societal conditions-economic, technological, social, cultural, and political-that exert intense pressures on the educational system and pose great challenges to educational leaders.

8421 Leading Professional Learning for Educators  G  3
Study of research on teacher education and teacher education programs at the collegiate and university levels. Repeatable to a maximum of 6 cr hrs.

8700 Inquiry in Educational Administration  G  3
This course will examine conducting research on problems of practice in school environments with a focus on critical leadership.

8895 Seminars: Educational Administration  G  2 - 5
Seminar in topics of special interest. Students with permission of advisers may register for more than one section of 8895, or for the same section two or more times. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs or 12 completions.

8997 EdD Final Project Writing  G  1 - 3
Writing the final project for the EdD. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 6 completions. This course is graded S/U.

8999 Dissertation or Thesis Research: Educational Administration  G  1 - 18
Research for thesis or dissertation purposes only. Prereq: Permission of instructor. Repeatable. This course is graded S/U.

3312 Conflict, Power, and Voice in Public Education  U  3
This course introduces students to the contested interests, ideologies, and goals that sit at the center of the educational political arena. The course explores multiple and often competing purposes of education, politics of education governance, and issues of representation, agency, and change.

5217 Comparative Perspective on Education, Globalization, and National Development  U  G  3
Examines comparative perspectives on the role of educational processes in national development and globalization, including "out of school" contexts that impact where and what children learn.

6000 Introduction to Educational Policy  G  3
Introduction to the educational policy process and common dilemmas in educational policy.

7100 Education Policy Writing  G  3
Develop policy writing skills, including the translation of educational research to policy briefs, the development of policy scholarship, and understanding the nuances of publication in various policy venues.

7224 Educational Policy Analysis in Contemporary Culture  G  3
Examines key theories and research perspectives on educational policy. Explores major policy processes and agendas unfolding at the time of the course. Introduction to methods for studying educational policy. Prereq: Not open to students with credit for EduPL 824.

7225 Inquiry into Education Policy Research  G  3
Introduction to guiding principles for policy inquiry and analyses. The focus is on learning analytical vocabularies and approaches distinctive to policy inquiry. Students learn to read and think critically and creatively about public policy problems and solutions through the lens of research. Cross-listed in ESQual.

7897 Special Topics: Educational Policy  G  1 - 5
Special topics for professional educators and graduate students in selected areas; designed to provide the opportunity to update professional skills and review current research developments. Prereq: Grad standing or registration in one of the professional schools. Repeatable to a maximum of 20 cr hrs or 20 completions. This course is graded S/U.

7999 Thesis Research: Educational Policy  G  1 - 3
Research for master's thesis purposes. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions. This course is graded S/U.

8193 Advanced Individual Studies: Educational Policy  G  1 - 15
Advanced individual study. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions. This course is graded S/U.

8209 Cultural Processes in Education  G  3
Examines the role of cultural processes in educational practices at school, after school, in the home, and on the job. Explores how culture, ethnicity, and power operate in formal and informal educational settings. Prereq: Not open to students with credit for EduPl 909.

8312 Governance and Control in American Education  G  3
A critical examination of national, state, and local politics and governance in American education.

8332 Educational Policy in Democratic Society  G  3
Focuses on conceptions of democracy, the democratic aims of public education, and the processes of developing, implementing and analyzing policies that further those aims. Prereq: Not open to students with credit for EduPl 922.

8895 Seminars: Educational Policy  G  2 - 5
Seminar in topics of special interest. Students with permission of advisers may register for more than one section of 8895, or for the same section two or more times. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs or 12 completions. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions. This course is graded S/U.

1159 Online Learning Strategies and Skills  U  2
Explores how to use the web for a successful college experience. Covers navigating online resources, communicating academic content, and enhancing learning via the web. This course has been peer reviewed and is officially recognized by Quality Matters as meeting the standards of a quality online course. For more information, visit www.qmprogram.org. Prereq: Not open to students with credit for EduPl 159.

1259 Learning and Motivation Strategies for College Success  U  3
Teaches learning and motivation strategies to help students manage time, improve grades, and achieve college success. Students will develop practical skills for personal and academic effectiveness, while also understanding the related research. Topics include boosting motivation, overcoming procrastination, enhancing organization and concentration, and applying effective study strategies.

1359 Critical Thinking and Collaboration in Online Learning  U  3
Teaches skills for effective collaboration, research, communication, and critical thinking in college and beyond. Students will develop as modern learners who are able to self-regulate while also functioning effectively as team members. Topics covered include online learning tools, search strategies, organization, use of evidence in argumentation, presentations, and self-assessment.

2059 Becoming a Self-Regulated Learner  U  2
This course will build strategies and motivation to overcome recent academic challenges and prepare for success in the future. Main topics we will cover include self-regulation, active learning, studying, using resources, planning, goal setting, and time management. Our entire course is geared toward helping students become self-regulated learners.

2060 Academic Success Strategies for International Students  U  2
Supports the academic transition for international students by teaching study habits and strategies for success in the U.S. classroom. Covers expressing original ideas, understanding instructor and course expectations, engaging in class and with classmates, using support resources on campus, managing time, incorporating active learning into study methods, and thinking critically.

2309 Psychological Perspectives on Education  U  3
This course deals with the major theories of human development, motivation and learning. Planning of instruction, teaching strategies, assessment and classroom management are examined. Authentic pedagogical practices are used to gain an understanding of the teaching and learning process. Prereq: Not open to students with credit for EduPl 309.

5193 Individual Studies: Educational Psychology  U  G  0 - 15
Individual study projects. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs or 24 completions. This course is graded S/U.

5194 Group Studies: Educational Psychology  U  G  1 - 15
Group study projects. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 15 completions. This course is graded S/U.

5401 Adolescent Learning and Development in School Contexts  U  G  3
Provides students with an introduction to the field of adolescent development and psychology and applications to education. Teacher education licensure course.
5982 Workshops: Educational Psychology  U G 1 - 8
Intensive study of a problem common to the participants for the purpose of developing sound
principles and practices relating to it. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 9 completions. This course is graded S/U.

7401 Controversies, Myths, and Dilemmas in Education  G 3
This course examines research on classroom learning and teaching and educational policy,
and considers the implications of this research for teaching practice. Course will examine the
research evidence behind school- and classroom-level practices, particularly focusing on
issues on which opinion is sometimes sharply divided. Prereq: Not open to students with credit for EduPL 803.

7402 Educational Psychology: Cognition, Learning, and Instruction  G 3
Examination of theory and research about cognitive perspectives on classroom learning and
instruction, particularly research on the teaching and learning of school subjects. Prereq: Not open to students with credit for EduPL 885.

7403 Motivation in Learning and Teaching  G 3
Examines research and theory about motivation to learn in academic settings, including studies
of goal theory, social cognitive approaches, and teaching practices. Prereq: Not open to students with credit for EduPL 901.

7404 College Teaching  G 3
Designed as initial preparation for instruction at the college level: focuses on the generic skills,
strategies, and issues common to university teaching. Open to grad students committed to
teaching in any area or discipline at the college level.

7405 Cooperative Learning: Research and Practice  G 3
Examines research, theory, and practice related to cooperative and collaborative learning,
including teacher's role, strategies and structures, and assessment of outcomes. Prereq: Not open to students with credit for EduPL 797.

7406 Social Basis of Behavior in Education  G 3
Focuses on the role of behavior in schools as social contexts, social perception, social influence, and social relations from a psychological perspective. The emphasis in this course is on understanding and mastery of conceptual, theoretical, and practical issues in social behavior in educational settings.

7434 Professional Development Around Teaching in Higher Education  G 3
Study aspects of teaching and teaching support at the university level, and examine models for university teaching preparation and support programs. Prereq: Permission of instructor.

7999 Thesis Research: Educational Psychology  G 1 - 18
Research for master's thesis purposes only. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions. This course is graded S/U.

8193 Advanced Individual Studies: Educational Psychology  G 1 - 15
Advanced individual projects. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions. This course is graded S/U.

8194 Advanced Group Studies: Educational Psychology  G 1 - 15
Advanced group projects. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 15 completions. This course is graded S/U.

8402 Classroom Research on Student Motivation  G 3
In depth study of theories and research that address the development and support of students' motivation to achieve in classroom settings. Prereq: Not open to students with credit for EduPL 944.

8403 Advanced Seminar in Educational Psychology  G 3
Advanced seminar in educational psychology for doctoral students. Current trends in theory and research will be critically examined.

8404 Academic Writing in Education: Reviewing the Literature  G 3
The class will focus primarily on systematic work on students' individual literature reviews. Topics covered will include the writing process in general, including developing personal writing habits; strategies for locating and evaluating existing research literature; structuring literature reviews for different purposes and building a logical rationale; and APA format and style. This course is graded S/U.

8405 Classroom Learning and Instruction  G 3
This advanced seminar is designed to guide students through contemporary issues in classroom learning and instruction. Students will critically review classroom-based research on how students learn and how to help students learn in various subject areas and with a variety of learners, including K-16 students and adult learners.

8406 Self-regulated Learning  G 3
This class will critically examine major constructs and relations proposed by different models. We will analyze and discuss empirical research designed to investigate students' self-regulated learning, including its assessment. We will also evaluate how self-regulated learning can be fostered through instructional interventions.

8407 Self-efficacy  G 3
This course explores the concept of collective efficacy, especially as media. The issue of self-efficacy in the social world and Bandura's theories will also be discussed.

8408 Race, Ethnicity, & Multiculturalism in Education & Psychology  G 3
This seminar is designed to discuss current conceptual, theoretical, and methodological work in education and psychology and consider the role of race and ethnicity in students' school experiences, academic achievement, and development in multicultural settings.

8895 Seminars: Educational Psychology  G 2 - 5
Seminar in topics of special interest. Students with permission of advisers may register for more than one section of 8895, or for the same section two or more times. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs or 12 completions.

8899 Dissertation or Thesis Research: Educational Psychology  G 1 - 18
Research for thesis or dissertation purposes only. Prereq: Permission of instructor. Repeatable. This course is graded S/U.

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Educational Studies: Higher Educ & Student Affairs

2239 Land-Grant Universities: Mission and Leadership  U 3
This course provides students with the opportunity to learn about land-grant institutions and their
place in the American higher education system, including the evolving nature of the landgrant mission in 21st century America, as well as how higher education leaders are
reconfiguring our nation's preeminent public institutions to meet the needs of the communities they were designed to serve. Cross-listed in HDFS.

2570 Team and Organizational Leadership  U 3
Overview of the theory and skills necessary for the practice of effective leadership in team and organizational settings. Leadership is explored as an integral component of a student's career and life plan. Repeatable to a maximum of 12 cr hrs.

2571S Leadership In Community Service  U 3
Introduction to the knowledge, skills, and competencies for responsible service and leadership in diverse communities. Preparation for engaged, responsible, and active community involvement and leadership. Please note: Although this course is repeatable in special circumstances (study abroad requirement, for example), only one iteration will count for GE credit. Repeatable to a maximum of 12 cr hrs. GE service learning course.

2572 Introduction to Leadership Development in Learning Organizations  U 3
Concepts and strategies that are necessary to be an effective leader. Through a variety of leadership assessments, students will learn about their leadership styles and preferences. Repeatable to a maximum of 12 cr hrs.

2575 Student Organization Leadership Training  U 3
Overview of the theory and skills necessary for the practice of effective leadership in student organization settings. Leadership is explored as an integral component of a student's activity in Ohio State student organizations. Repeatable to a maximum of 12 hrs.

2576 Leadership for Resident Advisors  U 1 - 3
Provides an overview of the theory and skills necessary for the practice of effective leadership in student organization settings. Leadership is explored as an integral component of a student's role as a Resident Advisor. Repeatable to a maximum of 12 cr hrs or 4 completions.

2577 Diversity and Social Justice in Leadership  U 3
Builds on intellectual and experiential engagement with issues of difference, diversity, social justice, and alliance building. GE diversity soc div in the US course.

2578 Leadership for Residence Managers  U 1 - 3
Provides an overview of the theory and skills necessary for the practice of effective leadership in team and organizational settings. Leadership is explored as an integral component of a student's role as a Resident Manager. Repeatable to a maximum of 12 cr hrs or 4 completions.

3200 So You Want to Work with College Students? Intro to Student Affairs  U 3
Course focuses on the role of student development theory and its use in helping students examine how they grow as a result of the college experience.

3202 International Student Experience  U 3
Course examines two aspects of internationalization on American college campuses: American students studying abroad and international students studying in the US.
160 Educational Studies: Higher Educ & Student Affairs

3221 Innovation and Leadership  U  3
This course is built on intellectual and experiential engagement with innovative leadership. Students are challenged to develop better problem solving skills in a team-oriented atmosphere, and through the use of creativity, learn to view challenges from new and different perspectives.
Cross-listed in BusMHR.

3573 Theories of Leadership in Learning Organizations  U  3
A focus on the particular opportunities and challenges that exist in understanding the theories related to leadership development in a complex and changing world. Repeatable to a maximum of 12 cr hrs.

4201 The Asian American Student Experience  U  3
Course examines the histories and contemporary issues affecting Asian American students from the perspectives of educational history and policies from K-12 through higher education.

4202 The Latinx Student Experience  U  3
Course examines the educational experiences and outcomes of Latinx students throughout the P-20 pipeline.

4239 Leadership for Social Change  U  3
This course provides an opportunity for students to explore leadership theory and practice through a critical lens. By applying concepts and critiques from critical theory to well-known theories and models of leadership, this course will help students gain important skills in critical thinking and analysis and learn to deconstruct dominant ideologies and understandings of leadership.

5193 Individual Studies: Higher Education and Student Affairs  U G 1 - 15
Individual study projects.
Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs or 24 completions. This course is graded S/U.

5194 Group Studies: Higher Education and Student Affairs  U G 1 - 15
Group study projects.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 15 completions. This course is graded S/U.

7239 Land-Grant Universities: Mission and Leadership  G 3
This course provides students with the opportunity to learn about land-grant institutions and their place in the American higher education system, including the evolving nature of the land-grant mission in 21st century America, as well as how higher education leaders are reconfiguring our nation’s preeminent public institutions to meet the needs of the communities they were designed to serve.

7256 Qualitative Research in Higher Education Settings  G 3
This course provides an introduction to the philosophical and epistemological foundations that guide qualitative inquiry, and an overview of the methodologies and methods associated with qualitative research designs appropriate in higher education and student affairs settings. Cross-listed in ESQual.

7500 Introduction to the Profession of Student Affairs  G 3
Overview of history of higher education and student affairs, the philosophical and theoretical foundations of the profession, codes of ethics, contemporary issues, and organizational structures.
Prereq: Not open to students with credit for EduPL 780.

7510 College Student Development I  G 3
An analysis of psychosocial theories of and research on college student development and their use in the design of educational practice.
Prereq: Not open to students with credit for EduPL 782.

7512 Interaction of Students and Environments  G 3
Analysis of components of the college environment and how students interact with it.
Prereq: Not open to students with credit for EduPL 943.

7513 Understanding Educational Organizations  G 3
Introduction to organization theory and its application to the study of leadership, culture, adaptation, and change in higher education.
Prereq: Not open to students with credit for EduPL 813.

7518 Leadership and Group Facilitation in Higher Education  G 3
Emphasis on group theory, processes, and dynamics and the development of structured learning experiences that facilitate interpersonal growth and development in educational organizations.
Prereq: Permission of instructor.

7520 Diversity in Higher Education  G 3
Examines structural and cultural diversity in higher education in relation to race, ethnicity, gender, socio-economic status, sexual orientation, and religion of college/university constituents.
Prereq: Not open to students with credit for EduPL 887.

7530 Practicum in Higher Education and Student Affairs  G 4
Allows students to reflect on internship experiences by offering opportunities to share perspectives about duties and gain appreciation of how theory informs practice. Repeatable to a maximum of 12 cr hrs.

7540 Higher Education Institutions and Core Academic Issues  G 3
Explores different types of institutions, and central issues related to academic quality, through a systems perspective, addressing missions, curriculum, faculty, students and evaluation.
Prereq: Not open to students with credit for EduPL 806 or 842.

7545 Case Studies in Higher Education Administration  G 3
Applies theoretical and scholarly research in the field of higher education to the analysis of real-life cases from U.S. colleges and universities.
Prereq: Not open to students with credit for EduPL 858.

7550 Women in Higher Education  G 3
Examines current situations of women in higher education; focuses on understanding the diversity of experiences and perspectives relevant to organizational structure, policy development, and curriculum.
Prereq: Not open to students with credit for EduPL 839.

7554 Admission and Retention of College Students  G 3
Considers the recruitment, admission, financial aid, advising, student services and retention processes that result in successful students. Social issues and theoretical models are discussed.
Prereq: Not open to students with credit for EduPL 910.

7558 Administration of Service-Learning Programs in Higher Education and Student Affairs  G 3
Examines the historical roots, concepts, and principles of service-learning in higher education; develops knowledge about service-learning and competencies for designing service-learning opportunities in higher education.
Prereq: Not open to students with credit for EduPL 708.

7560 Broad Access Institutions and Community Colleges  G 3
This course is designed for graduate students who are interested in learning about not-for-profit broad access institutions and community colleges through the lenses of race, ethnicity, and class.

7564 Finance of Higher Education  G 3
A study of finance of higher education with emphasis on public issues affecting higher education; criteria for identifying and developing resources for higher education institutions; and perceived productivities of departmental and academic units.
Prereq: Admission to Higher Education Student Affairs program or EduSht-ED program.

7566 Strategy & University Leadership  G 3
Explores different approaches to developing strategy for colleges and universities. Examines leadership and decision-making broadly. Current special focus on the strategic use of technology in higher education, using the simulation Virtual U.
Prereq: Not open to students with credit for EduPL 914.

7570 Internationalizing Colleges and Universities  G 3
Examines the rationale and various strategies for internationalizing colleges & universities.
Prereq: Not open to students with credit for EduPL 870.

7574 Curriculum in Higher Education  G 3
An examination of the history, rationales, content, and organization of the curriculum in colleges and universities, with emphasis on the American experience.
Prereq: Not open to students with credit for EduPL 841.

7576 Assessment in Higher Education  G 3
An introduction to assessment practices in higher education. Students will consider the impact of assessment on student learning and success in a university environment.

7750 Facilitating Intergroup Dialogues in Higher Education  G 3
This course is based on the intergroup dialogue model where two facilitators of differing social identities facilitate dialogue about critical issues related to social identities (e.g., race, class, gender).

7850 Critical Race Theory in Higher Education  G 3
Critical Race Theory in Higher Education explores the history and development of CRT over time, paying close attention to how CRT can be (and has been) applied and used to address issues of structural injustice and inequality in American society and higher education specifically.

7854 Activism on College Campuses  G 3
The purpose of this course is to understand student activism as a form of engagement on college campuses, as well as how to support activists in their efforts.

7897 Special Topics: Higher Education and Student Affairs  G 1 - 5
Special topics for professional educators and graduate students in selected areas; designed to provide the opportunity to update professional skills and review current research developments.
Prereq: Grad standing, or registration in one of the professional schools. Repeatable to a maximum of 18 cr hrs or 18 completions.

7999 Thesis Research: Higher Education and Student Affairs  G 1 - 18
Research for master's thesis purposes only.
Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions. This course is graded S/U.
8191 Professional Internship G 3 - 12
Registration for approved Higher Education & Student Affairs professional/academic internships, and approved study abroad collaborative programs.
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs or 4 completions.

8193 Advanced Individual Studies: Higher Education and Student Affairs G 1 - 15
Advanced individual projects.
Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions. This course is graded S/U.

8194 Advanced Group Studies: Higher Education and Student Affairs G 1 - 15
Advanced group projects.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 15 completions. This course is graded S/U.

8511 College Student Development II G 3
Analysis of theories of reflective judgment and intellectual development of college students and their uses in educational practice.
Prereq: Not open to students with credit for EduPL 954 and 954A.

8515 Advanced Seminar in Theories of College Student Development G 3
The purpose of this course is to provide an opportunity for in-depth study, dialogue, and reflection about theoretical frameworks for understanding the development of college students. Through guided reading focusing on a variety of theoretical perspectives, class discussions, and analysis of theories students will gain increased understanding about student development. ESHESA 7510 highly recommended but not required.

8552 The Impact of College on Students G 3
Analysis of the philosophical assumptions and statistical evidence about the impact of college on students.
Prereq: Not open to students with credit for EduPL 912.

8560 Legal Aspects of Higher Education Administration G 3
Statutory, regulatory, and case law are analyzed for the development and maintenance of college and university policy and administrative decision making; recent legal developments in college and university governance patterns.
Prereq: Not open to students with credit for EduPL 840.

8850 Intersectionality in Higher Education G 3
This course is an essential course for graduate students who will conduct research on individual, social, and organizational diversity in higher education. There is an increasing need for educational research to address the role of multiple social identities simultaneously (for example, gender, race, and class) in affecting equity in educational outcomes.

8895 Seminars: Higher Education and Student Affairs G 2 - 5
Seminar in topics of special interest. Students with permission of advisers may register for more than one section of 8895, or for the same section two or more times.
Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs or 12 completions.

8999 Dissertation or Thesis Research: Higher Education and Student Affairs G 1 - 18
Research for thesis or dissertation purposes only.
Prereq: Permission of instructor. Repeatable. This course is graded S/U.

Educational Studies: Learning Technologies

2011 Keys to Academic Success for Online Learners U 2
Introduces essential learning strategies and technologies to guide students to successful online learning experiences and ultimately academic success. This two-credit, seven-week online course is designed for students entering online degree programs or taking recent online courses.

2211S Impact of Technology in Learning and Education U 3
In this service learning course you will learn about the theories, functions and practices of using technology to teach in formal and informal environments. We will use technology to support the learning goals of a community partner.

2250 Technology, Equity, and Informal Learning U 3
Technology can be a transformative force in addressing social justice. In this class you will harness this potential to design and create informal learning experiences to address issues of technological equity.

3251 Technology Interventions in Urban Schools and Communities U 3
In this course you will develop your media and computer skills to support social justice projects in urban schools and communities. You will then evaluate your projects for effectiveness and responsiveness.

4270 Technology, Education and Community-based Programming U 3
Comprehensive educational programs can meet a variety of learning needs in a community. In this class you will design and develop collaborative community-based educational programming using technology.

5193 Individual Studies: Educational Technology U G 1 - 15
Individual study projects. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs or 24 completions. This course is graded S/U.

5194 Group Studies: Educational Technology U G 1 - 15
Group study projects. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 15 completions. This course is graded S/U.

5280 Educational Videography U G 3
Functions and operations of digital video production and post-production equipment; application of theory and research to the production of video materials for instruction. Prereq: Not open to students with credit for EduPL 680.

5281 Introduction to Developing Educational Web Sites U G 3
In this introductory course students will begin to develop the visual, technical, and pedagogical design skills to create educational web sites.

5286 Enhancing Teaching and Learning with Digital Resources G 3
This course offers students a foundational understanding of the technology integration, instructional design and the evaluation of digital contents. It is intended to help pre-service teachers in-service teachers to perform effective digital contents evaluation in teaching practice. Students will acquire the key concept and theories of the technology integration and the instructional design model.

6223 Issues and Practices in Educational Technology G 3
Critical examinations of the issues raised by the implementation and use of information and communications technologies (ICTs) in education.
Prereq: Not open to students with credit for EduPL 823.

6273 Improving Professional Practice of Teaching with Technology G 3
Teachers learn to study the effective use of technology in teaching and learning in their classroom(s).

6274 Instructional Design for K12 Technology Integration G 3
Apply instructional design practices to support the use of technology in teaching at the school and classroom levels. K12 instructional design topics include needs, formative and summative assessments, higher order learning outcomes, and technology-based differentiation.

6278 Introduction to Instructional Design G 3
Paradigms of instructional design; phases of the instructional design process including needs assessment, learner, task, and curriculum analysis, instructional strategies, evaluation, and assessment.

6282 Introduction to Teaching Online for K-12 Educators G 3
Introduction for educators to the methods of teaching K-12 students online.
Prereq: Not open to students with credit for EduPL 682.

7277 Computer-Supported Collaborative Learning G 3
Explores the ways in which technologies have impacted the research and practice of teaching and learning, especially collaborative learning, in K-12 schools and higher education.
Prereq: Not open to students with credit for EduPL 677.

7278 Formative Evaluation of Learning Technologies G 3
Theory and practice of developmental testing and field evaluation of learning technologies.

7289 Practicum in Educational Technology G 3
Group observation, limited participation, and functional analysis of technology-enhanced learning environments.
Prereq: Not open to students with credit for EduPL 889.

7297 Designing Multimedia for Instruction G 3
Introduction to the instructional capabilities and hands-on development of multimedia; topics include relevant learning theories, authoring techniques and design models.
Prereq: Not open to students with credit for EduPL 897.

7392 Theories of Learning with Technology G 3
Overview of learning theories, and in an in depth study of social and cultural influences on student, teacher, and organizational learning in technology-rich education settings.
Prereq: Not open to students with credit for EduPL 892.

7897 Special Topics: Educational Technology G 1 - 5
Special topics for professional educators and graduate students in selected areas; designed to provide the opportunity to update professional skills and review current research developments.
Prereq: Grad standing, or registration in one of the professional schools. Repeatable to a maximum of 18 cr hrs or 18 completions. This course is graded S/U.

7999 Thesis Research: Educational Technology G 1 - 18
Research for master's thesis purposes only.
Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions. This course is graded S/U.
## Educational Studies: Learning Technologies

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>8199</td>
<td>Planned Field Experience: Educational Technology</td>
<td>1 - 15</td>
<td>Planned professional teaching experience under supervision in a public school or other educational agency. Pre req: Permission of instructor. Repeatable to a maximum of 24 cr hrs or 24 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>8193</td>
<td>Advanced Individual Studies: Educational Technology</td>
<td>1 - 15</td>
<td>Advanced individual projects. Pre req: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>8194</td>
<td>Advanced Group Studies: Educational Technology</td>
<td>1 - 15</td>
<td>Advanced group projects. Pre req: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 15 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>8216</td>
<td>Scholarly Perspectives in Learning Technologies</td>
<td>3</td>
<td>Survey of the theories and research within the field of Learning Technologies.</td>
</tr>
<tr>
<td>8226</td>
<td>Methods of Inquiry in Learning Technologies</td>
<td>3</td>
<td>This course will introduce research methodologies specifically in technology-supported learning environments, including self-report and experience sampling method, data intensive research, big data movement, learning analytics, data collection issues, data access and privacy, content analysis of online discussions, social network analysis, as well as design based research.</td>
</tr>
<tr>
<td>8295</td>
<td>Applied Instructional Design</td>
<td>3</td>
<td>Advanced theories of instructional design applied to the process of instructional development. Pre req: Not open to students with credit for EduPL 895.</td>
</tr>
<tr>
<td>8296</td>
<td>Learning Technologies Diffusion, Innovation, and Change</td>
<td>3</td>
<td>The purpose of this course is to introduce you to practices and principles of technology diffusion, innovation, and strategic change in education. Abilities of innovation, the innovation-development and innovation-decision processes, leaders as change agents and strategies on managing change are explored.</td>
</tr>
<tr>
<td>8297</td>
<td>Internship: Learning Technologies</td>
<td>0 - 1</td>
<td>The purpose of this course is for students in the Learning Technologies program to have the opportunity to engage in real-work experiences in a variety of workplace settings. These experiences do not require the students' physical presence in the internship site as most of these will be supported by technology and are unpaid. Pre req: A grade of B+ or above in 6278, or permission of instructor. This course is graded S/U.</td>
</tr>
<tr>
<td>8999</td>
<td>Dissertation or Thesis Research: Educational Technology</td>
<td>1 - 18</td>
<td>Research for thesis or dissertation purposes only. Pre req: Permission of instructor. Repeatable. This course is graded S/U.</td>
</tr>
</tbody>
</table>

## Educational Studies: Philo & Hist of Education

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<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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</tr>
</thead>
<tbody>
<tr>
<td>2241</td>
<td>Integrative Learning: How the Brain Learns</td>
<td>U 3</td>
<td>Current and emerging theoretical and cultural conception of integrative learning based on current brain research. GE soc sci.intro and groups course.</td>
</tr>
<tr>
<td>3200H</td>
<td>Mindful Resilience: Individuals to Organizations</td>
<td>U 3</td>
<td>The overarching framework for the course is a critical exploration of mindfulness practices and their influence on how individuals and groups function. Exploring the physiological impact of mindfulness on the individual, students will then be able to critically examine and apply these practices to communication, implicit bias, awareness of the self and others.</td>
</tr>
<tr>
<td>3206</td>
<td>School and Society</td>
<td>U 3</td>
<td>Use of concepts and methods of history, philosophy and the social sciences to grasp the interrelationship between society and education. Pre req: Not open to students with credit for EduPL 306. GE diversity soc.div in the US course.</td>
</tr>
<tr>
<td>3410</td>
<td>Philosophy of Education</td>
<td>U 3</td>
<td>An introduction to key philosophical issues in education, focusing on the questions: What should be taught? Who should be taught? What should the teacher do? Pre req: Not open to students with credit for EduPL 650.01. GE cultures and ideas course.</td>
</tr>
<tr>
<td>4245</td>
<td>Education and Spirituality: Holistic Perspectives</td>
<td>U 3</td>
<td>Cross-disciplinary examination of spirituality from personal and cultural perspectives, including feminist, ecological, and postmodern views, with inquiry into spiritual practices impact on education. Pre req: Not open to students with credit for EduPL 705.</td>
</tr>
<tr>
<td>4280</td>
<td>History of Modern Education</td>
<td>U 3</td>
<td>Development of educational institutions, practices, and theories in the modern world, particularly in U.S., and the social and intellectual movements influencing them.</td>
</tr>
<tr>
<td>4403</td>
<td>Ethics and the Professional Context of Teaching</td>
<td>U 3</td>
<td>Examination of the practice of teaching at national, state and local levels, highlighting the legal, professional, and ethical issues surrounding American schools and teaching.</td>
</tr>
<tr>
<td>5194</td>
<td>Group Studies: Philosophy and History of Education</td>
<td>U G 1 - 15</td>
<td>Group study projects. Pre req: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 15 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>5440</td>
<td>Philosophical Perspectives on Race, Education, and Citizenship</td>
<td>U G 3</td>
<td>This course allows participants to pursue philosophical questions at the intersection of race, education, and political life. These include: Does education play a very specific role in racialized patterns of benefit/detriment? What role does race play in understandings of educational policy &amp; practice? How does race affect understandings of education for citizenship? Cross-listed in Philos.</td>
</tr>
<tr>
<td>6250</td>
<td>History of Education</td>
<td>G 3</td>
<td>Examines the historical role of educational institutions in the development of nations; theoretical perspectives regarding the purposes of education and teaching practices. Pre req: Not open to students with credit for EduPL 650.02.</td>
</tr>
<tr>
<td>6403</td>
<td>Ethics and the Professional Context of Teaching</td>
<td>G 3</td>
<td>Examines the practice of teaching at national, state, and local levels, highlighting the legal, professional, and ethical issues surrounding American schools and teaching.</td>
</tr>
<tr>
<td>6410</td>
<td>Philosophy of Education</td>
<td>G 3</td>
<td>An introduction to key philosophical issues in education, focusing on the questions: Who should be educated? What should be taught? Who gets to decide? Pre req: Not open to students with credit for EduPL 650.01.</td>
</tr>
<tr>
<td>7222</td>
<td>History of Educational Policy</td>
<td>G 3</td>
<td>Historical analysis of social, economic, and political factors shaping public school policy in the US since 1800. Pre req: Not open to students with credit for EduPL 722.</td>
</tr>
<tr>
<td>7240</td>
<td>Life History Interview Methods in Education</td>
<td>G 3</td>
<td>Explores Life History interview methods in education; provides students opportunity to conduct life history interviews.</td>
</tr>
<tr>
<td>7324</td>
<td>History of Educational Administration</td>
<td>G 3</td>
<td>A historical study of educational administration and leadership with particular attention to developments in the United States. Repeatable to a maximum of 6 cr hrs.</td>
</tr>
<tr>
<td>7410</td>
<td>Modern Trends in Philosophy of Education</td>
<td>G 3</td>
<td>A study of contemporary work in philosophy of education and applications of that work to educational practice. Pre req: Not open to students with credit for EduPL 702.</td>
</tr>
<tr>
<td>7413</td>
<td>Professional Education: Theories and History</td>
<td>G 3</td>
<td>A study of the history, development, organization, and theories of education for the various professions, with particular attention to experience in the United States. Pre req: Not open to students with credit for EduPL 915.</td>
</tr>
<tr>
<td>7414</td>
<td>Examining Knowledge, Truth, and Objectivity: Philosophy of Science for Educational Researchers</td>
<td>G 3</td>
<td>Examines the ongoing controversies in educational research in light of work from the philosophy of science and science. Pre req: Not open to students with credit for EduPL 882.</td>
</tr>
<tr>
<td>7572</td>
<td>History of Colleges and Universities</td>
<td>G 3</td>
<td>A historical study of higher education with particular attention to the development of colleges and universities in the United States. Pre req: Not open to students with credit for EduPL 927.</td>
</tr>
<tr>
<td>7999</td>
<td>Thesis Research: Philosophy and History of Education</td>
<td>G 1 - 18</td>
<td>Research for master's thesis purposes. Pre req: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions.</td>
</tr>
<tr>
<td>8193</td>
<td>Advanced Individual Studies: Philosophy and History of Education</td>
<td>G 1 - 15</td>
<td>Advanced individual projects. Pre req: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>8194</td>
<td>Advanced Group Studies: Philosophy and History of Education</td>
<td>G 1 - 15</td>
<td>Advanced group projects. Pre req: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 15 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>8201</td>
<td>Social Foundations of Education</td>
<td>G 3</td>
<td>Multiple theoretical perspectives that have shaped discussions regarding the social foundations of education from the 19th century to the present. Pre req: Not open to students with credit for EduPL 906.</td>
</tr>
</tbody>
</table>
Educational Studies: Quant Rsrch, Evaltn & Msrmnt

3005 Learner Centered Classroom Assessment U 3
Offers an in-depth look at classroom assessment that meets the needs of 21st century teaching and learning. During this course, prospective teachers will determine how classroom assessment strategies can benefit their teaching practices and their students learning. They will study how to plan, develop, and manage student-centered assessment.

Individual study projects.
Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs or 24 completions. This course is graded S/U.

Group study projects.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 15 completions. This course is graded S/U.

5892 Workshops: Quantitative Research, Evaluation, and Measurement U G 1 - 8
Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it.
Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 9 completions. This course is graded S/U.

6621 Introduction to Educational Evaluation G 3
Introduction to educational evaluation, including history, models, theories, politics of evaluation, and ethical standards for evaluators and the conduct of evaluations.

6625 Introduction to Educational Research G 3
Designed to acquaint students with the nature of the research process and strategies for conducting studies of various aspects of education and related fields.

6641 Introduction to Educational Statistics G 4
An introduction to quantitative techniques, with an emphasis on educational settings.
Prereq: Not open to students with credit for EduPL 786.

6661 Introduction to Educational Measurement G 3
Provides a general survey of measurement and testing, including test evaluation, basics of test construction, validity and reliability.
Prereq: Introductory grad level statistics course (e.g., Stat 6641) or equiv. Not open to students with credit for EduPL 744.

7627 Sampling Designs and Survey Research Methods G 3
Comprehensive overview of methodological issues in sampling and survey research, particularly the impact of sources of error in survey research.
Prereq: EduPL 641 or equiv.

7631 Applied Evaluation Design G 3
Designed to acquaint students with the nature of the evaluation process and strategies for conducting educational and other evaluations, including logic models, methods, management, and cultural competence.
Prereq: EduPL 621 or EduPL 6621.

7635 Advanced Research Methods G 3
In-depth analysis of threats to causal inferences and methods for developing research designs to address those threats. Experimental, quasi-experimental, and data collection strategies will be discussed.
Prereq: EduPL 661 or EduPL 6641, or equiv.

7643 Categorical Data Analysis G 3
Introduction to the analysis of categorical outcomes and related models for non-normal response data.
Prereq: EduPL 641 or EduPL 6641. Not open to students with credit for EduPL 827.

7648 GLM I: Introduction to Regression and ANOVA G 4
Analysis of univariate outcomes via regression and analysis of variance models for experimental and non-experimental research designs. Connections between ANOVA and regression models will be stressed, including analysis of variance, multiple comparison procedures, factorial analysis of variance, regression models and methods of entry, coding for categorical variables, analysis of covariance.
Prereq: EduPL 641 or permission of instructor.

7651 Regression Analysis G 4
An introduction to the concepts of regression analysis and their application to research in education and the behavioral sciences.
Prereq: EduPL 641 or EduPL 6641, or equiv. Not open to students with credit for EduPL 881.

7658 GLM II: Advanced Regression and ANOVA G 4
This course covers advanced regression and analysis of variance through the lens of the linear and generalized linear model (GLM). Value of the GLM and its connections between anova and regression models, and treatment of continuous versus discrete outcomes will be stressed. We will cover interactions between categorical and continuous predictors in experimental and non-experimental designs, etc. Students should be comfortable analyzing data in SPSS; lab work will be supplemented with R.
Prereq: 7648, or permission of instructor.

7661 Instrument Construction G 3
Design of instruments for use in educational research and assessment, including surveys, with emphasis on standards for educational and psychology testing and cultural issues in instrument design.
Prereq: EduPL 661 or EduPL 6681, or equiv; or permission of instructor. Repeatable to a maximum of 6 cr hrs.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>7663</td>
<td>Test Reliability and Validity</td>
<td>3</td>
<td>G</td>
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<tr>
<td>7667</td>
<td>Authentic Assessment</td>
<td>3</td>
<td>G</td>
</tr>
<tr>
<td>7897</td>
<td>Special Topics: Quantitative Research, Evaluation, and Measurement</td>
<td>1 - 5</td>
<td>G</td>
</tr>
<tr>
<td>8193</td>
<td>Advanced Individual Studies: Quantitative Research, Evaluation, and Measurement</td>
<td>1 - 12</td>
<td>G</td>
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<tr>
<td>8648</td>
<td>Multivariate Analysis</td>
<td>4</td>
<td>G</td>
</tr>
<tr>
<td>8658</td>
<td>Applied Multilevel Data Analysis</td>
<td>3</td>
<td>G</td>
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<tr>
<td>8659</td>
<td>Structural Equation Modeling</td>
<td>3</td>
<td>G</td>
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<tr>
<td>8668</td>
<td>Longitudinal Data Analysis</td>
<td>3</td>
<td>G</td>
</tr>
<tr>
<td>8669</td>
<td>Advanced Structural Equation Modeling</td>
<td>3</td>
<td>G</td>
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<tr>
<td>8674</td>
<td>Scaling and Item Response Theory (IRT)</td>
<td>3</td>
<td>G</td>
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<tr>
<td>8725</td>
<td>Quantitative Methods Capstone Seminar</td>
<td>3</td>
<td>G</td>
</tr>
<tr>
<td>8895</td>
<td>Seminars: Quantitative Research, Evaluation, and Measurement</td>
<td>2 - 5</td>
<td>G</td>
</tr>
<tr>
<td>8109</td>
<td>Field Based Experience in School Psychology</td>
<td>3</td>
<td>G</td>
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<tr>
<td>7028</td>
<td>Cultural Diversity</td>
<td>3</td>
<td>G</td>
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<tr>
<td>7029</td>
<td>Urban Issues in Education</td>
<td>2</td>
<td>G</td>
</tr>
<tr>
<td>7189</td>
<td>Advanced Practicum in School Psychology I</td>
<td>3</td>
<td>G</td>
</tr>
<tr>
<td>7193</td>
<td>Advanced Individual Studies: School Psychology</td>
<td>1 - 12</td>
<td>G</td>
</tr>
<tr>
<td>8056</td>
<td>Roles and Function of School Psychologists</td>
<td>3</td>
<td>G</td>
</tr>
<tr>
<td>8057</td>
<td>Cognitive Assessment</td>
<td>3</td>
<td>G</td>
</tr>
<tr>
<td>8058</td>
<td>Assessment of Academic Achievement</td>
<td>3</td>
<td>G</td>
</tr>
<tr>
<td>8060</td>
<td>Linking Academic Assessment to Intervention</td>
<td>3</td>
<td>G</td>
</tr>
<tr>
<td>8077</td>
<td>Mental Health I: Mental Health Issues in the Schools</td>
<td>3</td>
<td>G</td>
</tr>
<tr>
<td>8078</td>
<td>Mental Health II: Counseling in the Schools</td>
<td>3</td>
<td>G</td>
</tr>
<tr>
<td>8079</td>
<td>Mental Health III: Social Emotional Assessment</td>
<td>3</td>
<td>G</td>
</tr>
<tr>
<td>8080</td>
<td>Biological Basis of Behavior: Neuropsychology in the Schools</td>
<td>3</td>
<td>G</td>
</tr>
</tbody>
</table>

Conceptual underpinnings of test reliability and validity, historical examination of developments in reliability and validity, classical and modern trends of reliability and validity.

Study of authentic assessment techniques including performance-based assessment, and portfolio assessment. Emphasis is on principles, procedures, issues, and innovations in authentic assessment.

One or more grad level course in assessment or measurement. Not open to students with credit for EduPL 876.

Special topics for professional educators and graduate students in selected areas; designed to provide the opportunity to update professional skills and review current research developments.

Grad standing, or registration in one of the professional schools. Repeatable to a maximum of 18 cr hrs or 18 completions. This course is graded S/U.

Research for master's thesis purposes only.

Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions. This course is graded S/U.

Advanced individual projects.

Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions. This course is graded S/U.

Advanced group projects.

Permission of instructor. Students with permission of advisers may register for more than one section or the same section two or more times. Repeatable to a maximum of 15 cr hrs or 15 completions. This course is graded S/U.

Design and analysis issues utilizing multivariate analysis of variance and discriminant analysis.

Methods for the analysis of multilevel data with an emphasis on impact of intraclass correlation, analysis strategies, estimation, model testing, and interpretation.

Not open to students with credit for EduPL 938.

Basic concepts of structural equation modeling, including approaches to regression, path analysis, confirmatory factor analysis, and structural model building, as well as some advanced models.

Students should have successfully completed several introductory and intermediate level graduate statistics courses. Not open to students with credit for EduPL 883.

This course is designed to teach students the uses of longitudinal data analysis in educational/social science research. We will cover modern methods to analyze longitudinal data mainly under the multilevel modeling framework. The traditional approaches, such as repeated measures of ANOVA and MANOVA, will be briefly discussed. Students are expected to have strong background in regression analysis (ANOVA and Multiple Regression).

Not open to students with credit for EduPL 857 or 858.

Using curriculum-based assessments to target specific academic skills and appropriate interventions, implementing academic interventions, and evaluating their effectiveness.

Child and adolescent psychopathology, characteristics, etiology, and empirically supported interventions and programming that address these issues. Not open to students with credit for EduPAES 877.

Common social-emotional issues of children and adolescents and how to effectively implement empirically supported interventions to address these issues with a focus on counseling in the schools. Any student is eligible to enroll, provided they are taken from a counseling course.

Discussion of brain development and functioning as it relates to typical and atypical outcomes among children and adolescents; overview of learning and psychological disorders from a school neuropsychological perspective.
5734.01 Methods of Instruction for Elementary Children with Mild/Moderate Disabilities: Early Childhood
This is a method course with a field placement that will provide students with information and strategies for working with children who have mild disabilities. Prereq: 5742, or 5742.01, or EduPAES 5742 (742); and enrollment in Special Education: Early Childhood major; or permission of instructor.

5734.02 Methods of Instruction for Elementary Children with Mild/Moderate Disabilities: Early Childhood
This is a method course with a field placement that will provide students with information and strategies for working with children who have mild disabilities. Prereq: 5742 or 5734.02; and enrollment in Special Education: Mild/Moderate major; or permission of instructor.

5735 Methods of Instruction for Secondary Students with Mild/Moderate Disabilities
Provides advanced training in specialized techniques and advanced teaching strategies for middle and high school students with mild/moderate disabilities. Prereq: 5743 or EduPAES 5743, and Special Education major; or permission of instructor. Not open to students with credit for EduPAES 735.

5735.02 Methods of Instruction for Secondary Students with Mild/Moderate Disabilities
Provides advanced training in specialized techniques and advanced teaching strategies for middle and high school students with mild/moderate disabilities. Prereq: 5743, or 5743.02, or EduPAES 5743; and enrollment in Special Education: Mild to Moderate major; or permission of instructor.

5736 Methods of Instruction I for Students with Moderate/Intensive Disabilities
Introduction to designing and developing instructional programs for children with moderate to intensive disabilities, provides skills to identify instructional goals and objectives for children using meaningful assessment techniques. Prereq: 5742 or EduPAES 5742, and admission to Special Education program; or permission of instructor. Not open to students with credit for EduPAES 736.

5736.03 Methods of Instruction I for Students with Moderate/Intensive Disabilities: Moderate/Intensive
Introduction to designing and developing instructional programs for children with moderate to intensive disabilities, provides skills to identify instructional goals and objectives for children using meaningful assessment techniques. Prereq: 5742, or 5742.02, or EduPAES 5742; and admission in Special Education: Moderate to Intensive program; or permission of instructor. Not open to students with credit for EduPAES 736.3.

5737 Methods of Instruction II for Students with Moderate/Intensive Disabilities with practicum
Provides teacher candidates with the skills to implement and evaluate student performance using systematic data collection so that skill acquisition can be monitored over time. Prereq: Open only to special education majors, or by permission of instructor. Not open to students with credit for EduPAES 737.

5737.03 Methods of Instruction II for Students with Moderate/Intensive Disabilities with practicum: Mid
Provides teacher candidates with the skills to implement and evaluate student performance using systematic data collection so that skill acquisition can be monitored over time. Prereq: Enrollment in Special Education: Moderate/Intensive major, or permission of instructor.

5738 Reading Instruction for Children with Disabilities or Severe Reading Deficits
Information on how to effectively instruct reading to children with reading disabilities. Students will be paired with an urban learner who is significantly below basic reading level for his/her grade. Prereq: 5734 and 5736, or EduPAES 5734 (734) and 5736 (736), and permission of instructor; or Grad standing, and enrollment in the Special Education Program. Repeatable to a maximum of 6 cr hrs.

5738.01 Reading Instruction for Children with Disabilities or Severe Reading Deficits: Early Childhood
Information on how to effectively instruct reading to children with reading disabilities. Students will be paired with an urban learner whom is significantly below basic reading level for his/her grade. Prereq: 5734 or 5734.01, and 5736 or 5736.01; or EduPAES 5734 (734), and 5736 (735); or Grad standing in Special Education: Early Childhood. Coreq: 5189.01. Repeatable to a maximum of 6 cr hrs.

5738.02 Reading Instruction for Children with Disabilities or Severe Reading Deficits: Mild/Moderate
Information on how to effectively instruct reading to children with reading disabilities. Students will be paired with an urban learner whom is significantly below basic reading level for his/her grade. Prereq: 5734 or 5734.02, and 5736 or 5736.02; or EduPAES 5734 (734), and 5736 (735); or Grad standing in Special Education: Mild/Moderate. Coreq: 5189.02. Repeatable to a maximum of 6 cr hrs.

5738.03 Reading Instruction for Children with Disabilities or Severe Reading Deficits: Moderate/Intensive
Information on how to effectively instruct reading to children with reading disabilities. Students will be paired with an urban learner who is significantly below basic reading level for his/her grade. Prereq: 5734 or 5734.03, and 5736 or 5736.03; or EduPAES 5734 (734), and 5736 (735); or Grad standing in Special Education: Moderate/Intensive. Coreq: 5189.03. Repeatable to a maximum of 6 cr hrs.

5742 Applied Behavior Analysis for Teachers
Study of principles of behavior for the development and maintenance of academic and social behaviors.

5743 Educational Assessment of Students With Mild/Moderate Disabilities
Advanced training and specialized techniques in teaching methods for middle and secondary students with mild disabilities. Prereq: 5742; and admission to the Special Education program, or Grad standing; or permission of instructor.

5750 Classroom and Behavior Management for Students with Disabilities
Developing a positive learning environment and understanding definition of social skills; importance of teaching social skills, special social skill needs of individuals with disabilities; how to assess, teach, and evaluate social skill instruction. Prereq: Admission to the Special Education program, or permission of instructor.

5755 Inclusive Classroom Management
Students will learn best practice for positive behavior support and inclusion of students with special needs. Prereq: 5742.

5760 Educational Assessment in Early Childhood Special Education
Study of the assessment of infants and preschoolers and young children with special needs with particular emphasis placed on measurement for screening and instructional program planning. Prereq: Admission to Special Education program, or Grad standing, or permission of instructor.

5760.01 Assessment in Early Childhood Special Education
Study of the assessment of infants and preschoolers and young children with special needs with particular emphasis placed on measurement for screening and instructional program planning. It is recommended to complete ESSpEd 5742 prior to this course, but not required. Prereq: Grad standing, or admission in Special Education: Early Childhood program, or permission of instructor.

5761 Educational Intervention for Young Children with Disabilities
Study of instructional programming for language, communication, sensorimotor, cognitive, and social development in early childhood environments. Prereq: Admission to Special Education program, or Grad standing, or permission of instructor. Not open to students with credit for EduPAES 761.

5761.01 Instructional Programming in Early Childhood Special Education
Study of instructional programming for language, communication, sensorimotor, cognitive, and social development in early childhood environments. Prereq: Grad standing, or admission in Special Education: Early Childhood program, or permission of instructor.

5769 Delivering Effective Services to Enhance the Inclusion of Students with Special Needs
Designed to prepare special education teachers to work with administrators, general education teachers, parents and paraprofessionals to deliver instruction in inclusive settings. Prereq: Special Education major, or permission of instructor. Not open to students with credit for EduPAES 769.

6556 Reading for Students who are Deaf or Hard of Hearing
Designed to introduce students to selected issues, concerning literacy and deafness: theories of literacy, research, and current practices, reading materials and assessment, and the relationship between reading and writing.

6558 Introduction to Exceptional Children
An overview of the education of exceptional learners including a discussion of their characteristics and a review of historical approaches to their education and of contemporary educational practices.

7189 Advanced Field Placement in Orientation and Mobility
This course addresses observing and co-teaching a variety of blind/low vision students under the direct supervision of a Certified Orientation and Mobility Specialists (COMS) within a variety of settings. Emphasis is experience working with a diverse group of students, in a variety of settings; moving to reflection on the process and continuity of teaching (a) student(s) over time. Prereq: Admission to Orientation and Mobility licensure program. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.
Effective Instruction for Students with Dysgraphia and Other Learning Differences/Disabilities  G  3
This course serves as part of a larger study of struggling students with learning and attention issues. In this course, enrollees will examine developmental theories related to dysgraphia. They will also read research that supports the best practices and effective instruction for struggling writers at all age and grade levels and with various learning differences and/or disabilities.

7550 Advanced Studies in Deafness  G  3
Designed to introduce graduate students to advanced issues concerning the linguistic, cognitive, and psychosocial aspects of students who are deaf and/or hearing impaired, including educational approaches and bilingualism/second-language.
Prereq: Not open to students with credit for EduTL 832.

7830 Urban Education & Precision Teaching  G  3
Provides information about the challenges in urban education and how Precision Teaching can be used to address these challenges.
Prereq: 5742 or EduPAES 5742; Grad standing or admission to the special education program; or permission of instructor.

7831 High Incidence Disability (HID) Seminar  G  3
This is a doctoral seminar designed to address the critical issues and research in the area of high incidence disabilities (e.g., learning disabilities, behavior disorders, dyslexia, mild cognitive disabilities, attention deficit disorder, etc.).
Prereq: Grad standing in ESSPEd or related field.

7833 Severe Disabilities Seminar  G  3
This course will provide graduate students the opportunity to explore current topics and issues specific to people with severe disabilities. In this course, we will explore the evidence-based related to improving outcomes for people with severe disabilities, directions that future researchers might take, and challenges currently faced by the field.
Prereq: Grad standing in ESSPEd or related field.

7999 Thesis Research: Special Education  G  1 - 6
Research for master's thesis purposes only.
Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions. This course is graded S/U.

8189 Field Experience in Special Education  G  1 - 15
Planned counseling, supervision, assessment, or teaching experience in a public school or other human service setting under supervision.
Prereq: Admission to Special Education graduate program or permission of instructor. Repeatable to a maximum of 15 cr hrs or 15 completions.

8191 BCBA Supervision  G  3
This course is designed to provide students seeking BCBA certification with the required experiences in applied behavior analysis in school and clinical settings.
Prereq: Admission to graduate program in Special Education (either MA or PhD level). Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

8193 Advanced Individual Studies: Special Education  G  1 - 12
Advanced independent study in Special Education.
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions. This course is graded S/U.

8200 Basic Behavior Analysis  G  3
This course provides students with an overview of basic behavioral processes related to human and nonhuman learning. This course focuses on the basic principles of the science of behavior, the direct application of these principles, and the use of data collection procedures for analysis of behavior.

8300 Behavioral Assessment  G  3
This course will provide an overview of process for determining the function of a behavior and how to align behavioral interventions with the results of functional assessments. Content for this course is based on the BCBA Task List (5th ed.), which sets forth the knowledge and skills that serve as the foundation for BCBA certification. Specifically, this is an application-oriented course. A basic understanding of the principles of applied behavior analysis is required prior to enrollment.

8400 Behavioral Interventions in Special Education  G  4
The purpose of this course is to equip practitioners with the knowledge and skills needed to effectively and efficiently produce successful outcomes for individuals with disabilities or who struggle with learning.
Prereq: 8200, or permission of instructor.

8500 Personnel Management and Supervision  G  2
Providing supervised field experience is often one of several job responsibilities required of a Board Certified Behavior Analyst (BCBA). Providing BCBA supervision requires the synthesis of interpersonal, management, problem-solving, and mentoring skills as well as a thorough knowledge of the certification board’s field experience standards and evidence-based practices.
Prereq: 8200, or permission of instructor.

8832 Advanced Applied Behavior Analysis  G  3
Advanced study of principles of behavior for the development and maintenance of academic and social behaviors.

Educational Studies: Special Education 167

8861 Single Case Research Design  G  3
Designing, conducting, and critically evaluating research involving applications of the experimental analysis of behavior to problems and needs of individuals with disabilities in educational, clinical, and community settings.
Prereq: 8861 or EduPAES 8881 (861), and major in Special Education; or permission of instructor. Not open to students with credit for EduPAES 881.

8871 Behavioralism: Schedules and Translational Research  G  3
Focuses on schedules of reinforcement and specialized areas of basic research that have influenced application with persons with developmental disabilities.
Prereq: 8871 or EduPAES 8871, and major in Special Education; or permission of instructor. Not open to students with credit for EduPAES 874.

8874 Behavioral Research in Education  G  3
Examines methodological issues, strategies, tactics, advances, and ethical standards in behavioral research. Concepts will be applied in reviews and critiques of research in education.
Prereq: 8871 or EduPAES 8871, and major in Special Education; or permission of instructor. Not open to students with credit for EduPAES 874.

8875 Professional Writing/Publishing in Special Education  G  3
Allows students to acquire skills needed to write for publication in refereed journals.
Prereq: Admission to Special Education program, or Grad standing, or permission of instructor. Not open to students with credit for EduPAES 888.

8891 Contemporary Issues in Special Education  G  3 - 9
Weekly teleconference seminars discussing current issues and research in special education with prominent scholars from other universities and research centers.
Prereq: Admission to Grad program in Special Education, or permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions.

8916 Behavioralism: Applications and Implications of Skinner's Works  G  1½
Students will be introduced to radical behavioralism as the philosophical foundation of behavior analysis and the implications of that philosophy for research and practice in special education.
Graduate students preparing for leadership positions in special education should acquire a thorough understanding and appreciation of the philosophical foundations of the science of behavior.
Prereq: 5742 or EduPAES 5742 (742), and a major in Special Education; or permission of instructor. Not open to students with credit for EduPAES 917.

8917 Verbal Behavior  G  1½
Overview along with the implications and applications of Skinner’s Verbal Behavior. Empirical and conceptual advances in the analysis of verbal behavior will be reviewed.
Prereq: 5742 or EduPAES 5742 (742), and major in Special Education; or permission of instructor. Not open to students with credit for EduPAES 917.

8921 Ethical Issues in Applied Behavior Analysis  G  3
Allows students to understand and engage in decision-making regarding general and special education practices. Identify critical issues of legal cases and ethical dilemmas.
Prereq: Enrollment in special education major, or permission of instructor.

8922 Topics in Early Childhood Special Education  G  3
Review of evidence based practices in and methodological issues in early childhood special education.
Prereq: 5742 and 8871, or EduPAES 5742 (742) and 8871 (861); Grad standing, admission to the special education program, or by permission of instructor. Not open to students who have taken EduPAES 925.23.

8996 Research: Special Education  G  1 - 15
Research for thesis and dissertation purposes only.
Prereq: Grad standing in Special Education, or permission of instructor. Repeatable to a maximum of 15 cr hrs or 15 completions. This course is graded S/U.

8999 Dissertation/Thesis Research: Special Education  G  1 - 15
Research for thesis and dissertation purposes only.
Prereq: Major in Special Education, or permission of instructor. Repeatable to a maximum of 15 cr hrs or 15 completions. This course is graded S/U.

Educational Studies: Teacher Educ Policy & Ldrshp

5194 Group Studies: Teacher Education  U G  1 - 15
Group study projects.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 15 completions. This course is graded S/U.

8194 Advanced Group Studies: Teacher Education  G  1 - 15
Advanced group projects.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 15 completions. This course is graded S/U.

4998 Research: Workforce Development & Education  U  1 - 3
Independent research on technical education and training content.
Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5189.01</td>
<td>Career and Technical Education Field Experience I</td>
<td>U G  2</td>
<td>Observation of career and technical education classrooms in a field-based setting. Prereq: Enrollment in EHE major, or Grad standing, or permission of instructor. Repeatable to a maximum of 6 cr hrs.</td>
</tr>
<tr>
<td>5189.02</td>
<td>Career and Technical Education Field Experience II</td>
<td>U G  2</td>
<td>Supervised clinical teaching in a career and technical education classroom, field-based setting. Prereq: Enrollment in EHE major, or Grad standing, or permission of instructor. Repeatable to a maximum of 6 cr hrs.</td>
</tr>
<tr>
<td>5189.03</td>
<td>Career and Technical Education Clinical Field Experience I</td>
<td>U G  2</td>
<td>Supervised clinical teaching in a career and technical education setting. Prereq: Grad or EHE standing, or permission of instructor. Not open to students with credit for EduPAES 575.02 or 668.02.</td>
</tr>
<tr>
<td>5189.04</td>
<td>Career and Technical Education Clinical Field Experience II</td>
<td>U G  2</td>
<td>Supervised clinical teaching in a career and technical education setting. Prereq: Grad standing, EHE enrollment, or permission of instructor. Not open to students with credit for EduPAES 575.03 or 668.03.</td>
</tr>
<tr>
<td>5193</td>
<td>Individual Studies: Workforce Development &amp; Education U G 1 - 12</td>
<td></td>
<td>Independent research on content and issues related to Workforce Development and Education. Prereq: Enrollment in the WDE program or working on a topic relevant to WDE and permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions.</td>
</tr>
<tr>
<td>5194</td>
<td>Group Studies: Workforce Development &amp; Education U G 1 - 3</td>
<td></td>
<td>Group Study on topics related to workforce development and education. Prereq: Jr standing or above, or CED enrollment; and permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions.</td>
</tr>
<tr>
<td>5622</td>
<td>Introduction to Software Applications for Teachers and Trainers</td>
<td>U G  3</td>
<td>Foundational understanding and skill development of computer software applications. Prereq: Not open to students with credit for EduPAES 622 or 623.</td>
</tr>
<tr>
<td>5623</td>
<td>Advanced Software Applications for Teachers and Trainers</td>
<td>U G  3</td>
<td>Advanced understanding and skill development of computer software applications. Prereq: Not open to students with credit for EduPAES 623 or 632.</td>
</tr>
<tr>
<td>5624</td>
<td>Foundations of Workforce Development and Education</td>
<td>U G  3</td>
<td>Offers economic, social, psychological and educational foundations of the fields in workforce development. Prereq: Not open to students with credit for EduPAES 624.</td>
</tr>
<tr>
<td>5633</td>
<td>Instructional Strategies for Career Based Intervention Programs</td>
<td>U G  3</td>
<td>Preparation and delivery of lessons, placement and follow-up of students in Career-Based Intervention programs. Prereq: Enrollment in EHE or Grad standing; or permission of instructor. Not open to students with credit for EduPAES 633.</td>
</tr>
<tr>
<td>5636</td>
<td>School Health Teaching Practices</td>
<td>U G  3</td>
<td>Principles and practices for preparing, implementing, and evaluating health instruction. Prereq: Not open to students with credit for EduPAES 636 or 636D.</td>
</tr>
<tr>
<td>5649S</td>
<td>Teaching Adults in the Workplace</td>
<td>U G  3</td>
<td>Developmental and instructional approaches. Prereq: Jr standing or above. Not open to students with credit for EduPAES 649.</td>
</tr>
<tr>
<td>5655</td>
<td>Coordination of Work-Based Learning for Career and Technical Education</td>
<td>U G  3</td>
<td>Strategies for the development of work-based learning programs in career and technical education programs. Prereq: Standing in EHE, or Grad standing, or permission of instructor. Not open to students with credit for EduPAES 646.</td>
</tr>
<tr>
<td>5656</td>
<td>Foundations of Career and Technical Education Teaching</td>
<td>U G  2</td>
<td>A foundational course in career and technical education for previously licensed teachers in other subject areas. Covers lab management, career-technical student organizations, advisory committees, funding, and other specialized topics related to career and technical education. Prereq: Grad standing, or enrollment in EHE major.</td>
</tr>
<tr>
<td>5657</td>
<td>Teaching Methods for Career and Technical Education</td>
<td>U G  3</td>
<td>Instructional concepts for teaching career and technical education, including teaching methods and classroom/lab management. Prereq: Grad standing or enrollment in EHE, or permission of instructor. Not open to students with credit for EduPAES 665.</td>
</tr>
<tr>
<td>5667</td>
<td>Curriculum/Instruction and Assessment in Career and Technical Education</td>
<td>U G  3</td>
<td>Study of curriculum/Instruction and assessment procedures in career and technical education courses and programs. Prereq: Grad standing, or enrollment in EHE, or permission of instructor. Concur: 5189.02. Not open to students with credit for EduPAES 667 or 675.</td>
</tr>
<tr>
<td>5668</td>
<td>Career and Technical Education Capstone</td>
<td>U G  1</td>
<td>Development of professional teaching portfolio. Prereq: Standing in EHE, or Grad standing, or permission of instructor. Not open to students with credit for EduPAES 575.06 or 668.56.</td>
</tr>
<tr>
<td>5672</td>
<td>Lifelong Learning in the Adult Years</td>
<td>U G  3</td>
<td>Nature, extent and significance of adult in society. History, forms, methodologies, theoretical issues and philosophies. Prereq: Jr standing or above. Not open to students with credit for EduPAES 672.</td>
</tr>
<tr>
<td>5677</td>
<td>New Career and Technical Education Teacher Clinic</td>
<td>U G  4</td>
<td>Development of basic cognitive and performance skills for new career and technical education teachers. Prereq: Standing in EHE, or Grad standing, or permission of instructor. Not open to students with credit for EduPAES 669.01. This course is graded S/U.</td>
</tr>
<tr>
<td>5680</td>
<td>Introduction to Career Based Intervention</td>
<td>U G  2</td>
<td>The initial course for adding the Career Based Intervention Endorsement to an existing teaching license. Prereq: Grad standing, or enrollment in EHE major, or permission of instructor. Not open to students with credit for EduPAES 678.</td>
</tr>
<tr>
<td>5701</td>
<td>Fundamentals of Teaching Adults Online</td>
<td>U G  3</td>
<td>Apply the concepts of teaching presence, social presence, and cognitive presence to the design and implementation of an online course. Prereq: Jr standing or above. Not open to students with credit for EduPAES 701 or 701D.</td>
</tr>
<tr>
<td>5784</td>
<td>Student Teaching in Career and Technical Education</td>
<td>U G  12</td>
<td>Supervised clinical practice for career and technical education majors in a school setting. Prereq: Major in EHE, or Grad standing; and passage of Business content test; or permission of instructor. Not open to students with credit for EduPAES 784.</td>
</tr>
<tr>
<td>6701</td>
<td>Boot Camp for the Beginning Online Instructor</td>
<td>G  1</td>
<td>This course workshop provides the just in time skills needed to begin teaching online and prepares future faculty for first time online teaching assignments. Learners will be able to develop a management plan for teaching online, develop spaces and places for learning, connect with students and design assessments appropriate for online learning environments. This is a self-paced and managed course. Prereq: Not open to students with credit for 5701.</td>
</tr>
<tr>
<td>7000.01</td>
<td>Contemporary Research in Workforce Development and Education: Career and Technical Education</td>
<td>G  3</td>
<td>This course is designed as an examination of the current research across the workforce development landscape. It will provide the opportunity to explore scholarly work, policy reports, and practitioner-focused reports that support the development of individuals for success in the workforce. It will delve into contemporary issues in WDE with a focus on career and technical education. Repeatable to a maximum of 30 cr hrs.</td>
</tr>
<tr>
<td>7289</td>
<td>Practicum in Teaching Adults Online</td>
<td>G  3</td>
<td>Course management system and content area. Learners will design and teach a lesson online. Provides an opportunity for students to practice the skills developed in the grad minor. Specialization in teaching in a virtual environment. Prereq: 7701 or EduPAES 7701, and ESWDE 5701 or EduPAES 5701; or ESETec 6262 or EduPl 6262.</td>
</tr>
<tr>
<td>7701</td>
<td>Teaching and Learning at a Distance: Foundations of the Virtual Classroom</td>
<td>G  3</td>
<td>An examination of the socio-cultural, political, economic, and educational trends and issues influencing the development and delivery of distance education. Issues of accessibility, access, affordability, technology, will be discussed.</td>
</tr>
<tr>
<td>7727</td>
<td>Assuring Quality in Online Course Design: Moving from Face to Face to Online</td>
<td>G  3</td>
<td>In this fully online course learners will use the quality matters rubric and supporting documents to inform the design and implementation of instruction specifically for an online teaching/learning environment. The learner will develop and submit for peer review an online course or portion of an online course. Learners will also serve as a peer reviewer using the quality matters standards. Cross-listed in Nursing.</td>
</tr>
<tr>
<td>7935.40</td>
<td>Program Planning in Adult Education</td>
<td>G  3</td>
<td>Examines the political, social and educational and cultural components in planning educational programs for adults. Prereq: Not open to students with credit for EduPAES 934 or 935.</td>
</tr>
<tr>
<td>8193</td>
<td>Advanced Individual Studies: Workforce Development &amp; Education</td>
<td>G  1 - 12</td>
<td>Advanced independent research on topics related to workforce development and education. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions. This course is graded S/U.</td>
</tr>
</tbody>
</table>
## Educational Studies: Workforce Development & Educ

<table>
<thead>
<tr>
<th>Code</th>
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</tr>
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<tbody>
<tr>
<td>8911</td>
<td>Theoretical and Scholarly Perspectives on Workforce Development and Education</td>
<td>G 3</td>
<td>Provides a framework for examining the theories and concepts in Workforce Development and Education. Prereq: Not open to students with credit for EduPAES 911 or 912.</td>
</tr>
<tr>
<td>8932</td>
<td>Adult Learning Theory</td>
<td>G 3</td>
<td>Examination of significant learning theories and their application to adult learning experiences. Prereq: Not open to students with credit for EduPAES 932.</td>
</tr>
<tr>
<td>8999</td>
<td>Dissertation/Thesis Research: Workforce Development &amp; Education 1 -3 &amp; Education</td>
<td>A 1-3</td>
<td>An individual study course for those graduate students conducting independent research for a thesis or dissertation. Prereq: Doctoral standing, and permission of instructor. Repeatable to a maximum of 18 cr hrs or 18 completions with 999.40. This course is graded SU.</td>
</tr>
</tbody>
</table>

### Electrical and Computer Engineering

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Units</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>Introduction to Analog Systems and Circuits</td>
<td>U 3</td>
<td>Circuit theory and applications of passive components and Op amps. Introduction to analog systems using differential equations and Laplace transforms. Prereq: Engr 1182.01, 1182.02, 1182.03, 1282.01H, 1282.02H, 1282.04H, or 1186, 1187, and 1188 concurrent; and Math 1152, 1152H, 1161, or 1181H; and Physics 1250, 1250H, or 1260, and CSE 1222 or 2221 or Engr 1281.01H or 1281.02H or 1222, and Engr 1161.01 or 1162.02 or 1162.03 or 1281.01H or 1281.02H or 1281.03H, or Engr 1165 and 1187 and concour: 1186 concurrent, or 1187 and 1188 and concour: 1186; and CPHR 2.0 or above. Not open to students with credit for 2100, 2100.02, 2100.06, 2100.07, 2100.08, 2105, 2106, 2110, 2127, 2137, or 2300.</td>
</tr>
<tr>
<td>2021</td>
<td>Introduction to Analog Systems and Circuits for Transfer Students Lecture</td>
<td>U 2½</td>
<td>Lecture-only component of ECE 2020, for transfer students. Circuit theory and applications of passive components and Op amps. Introduction to analog systems using differential equations and Laplace transforms. Prereq: Math 1152 or 1161.01 or 1161.02 or 1172 or 1181H, and Physics 1250, 1250H or 1260, and CSE 1222 or 2221 or Engr 1281.01H or 1281.02H or 1222, and Engr 1162.01 or 1162.02 or 1162.03 or 1281.01H or 1281.02H or 1281.03H, or Engr 1165 and 1187 and concour: 1186 concurrent, or 1187 and 1188 and concour: 1186; and CPHR 2.0 or above. Not open to students with credit for 2100, 2100.02, 2100.06, 2100.07, 2100.08, 2127, 2137, 2139, 299, 292, or 294.03.</td>
</tr>
<tr>
<td>2050</td>
<td>Introduction to Discrete Time Signals &amp; Systems</td>
<td>U 3</td>
<td>Introduction to sampled time signals and linear time invariant sampled time systems. Prereq: 2000, or 2060, or 2061 and 2067, or CPHR 2.0 or above. Prereq: or concur: Math 2174 or 2568. Not open to students with credit for 2100, 2100.01, 2100.04, 2104, or 2110.</td>
</tr>
<tr>
<td>2051</td>
<td>Introduction to Discrete Time Signals &amp; Systems Lecture</td>
<td>U 2½</td>
<td>Introduction to sampled time signals and linear time invariant sampled time systems. Lecture only. Prereq: 2000, or 2060, or 2061 and 2067, or CPHR 2.0 or above. Prereq: or concur: Math 2174 or 2568. Not open to students with credit for ECE 2100, 2100.01, 2100.04, 2104, 2110, or 2110.</td>
</tr>
<tr>
<td>2057</td>
<td>Introduction to Discrete Time Signals &amp; Systems Laboratory</td>
<td>U 1</td>
<td>Introduction to sampled time signals and linear time invariant sampled time systems. Lab only. Prereq or concur: 2051. Not open to students with credit for 2100, 2100.01, 2100.04, 2104, 2110, or 2110.</td>
</tr>
<tr>
<td>2060</td>
<td>Introduction to Digital Logic</td>
<td>U 3</td>
<td>Introduction to the theory and practice of combinational and clocked sequential networks. Prereq: CSE 1222, 2221, or Engr 1222, 1281.01H, or 1282.01H or 1281.02H or 1282.02H, or Math 1152, 1161.01, 1161.02, 1172, or 1181H, and Physics 1250, 1250H, or 1260, and CSE 1222 or 2221 or Engr 1281.01H or 1281.02H or 1222, and Engr 1162.01 or 1162.02 or 1162.03 or 1282.01H or 1282.02H or 1282.03H, or Engr 1165 and 1187 and concour: 1186 concurrent, or 1187 and 1188 and concour: 1186, or major in CIS or CIS-PRE; and CPHR 2.0 or above. Not open to students with credit for 2000, 2000.02, 2000.07, 2001, 2010, or 2017.</td>
</tr>
<tr>
<td>2061</td>
<td>Introduction to Digital Logic for Transfer Students</td>
<td>U 2½</td>
<td>Lecture-only component of ECE 2060, for transfer students. Introduction to the theory and practice of combinational and clocked sequential networks. Prereq: Math 1152 or 1161.01 or 1161.02 or 1172 or 1181H, and Physics 1250, 1250H or 1260, and CSE 1222 or 2221 or Engr 1281.01H or 1281.02H or 1222, and Engr 1162.01 or 1162.02 or 1162.03 or 1282.01H or 1282.02H or 1282.03H, or Engr 1165 and 1187 and concour: 1186 concurrent, or 1187 and 1188 and concour: 1186, or major in CIS or CIS-PRE; and CPHR 2.0 or above. Not open to students with credit for 2000, 2000.02, 2001, 2010, or 2060.</td>
</tr>
<tr>
<td>2067</td>
<td>Introduction to Digital Logic Lab for Transfer Students</td>
<td>U ½</td>
<td>Laboratory-only component of ECE 2060, for transfer students. Laboratory practice with and application of the theory of combinational and clocked sequential networks. Prereq: 2060, and CPHR 2.0 or above. Not open to students with credit for 2000, 2000.02, 2000.07, 2017, 2060, 270, 290, or 294.01.</td>
</tr>
</tbody>
</table>
170 Electrical and Computer Engineering

3050 Signals and Systems U 3
Linear systems and models in continuous and discrete time; convolution; Fourier series and transform; frequency response; Laplace transform; z-transform; applications. Prereq: 2020, 2025, or 2100; and Math 2415; and prereq or concour Math 2415; and enrollment in ECE or EngPhysics major. Not open to students with credit for 352.

3080 Ethics and Professionalism U 1
Professional responsibilities; IEEE code of ethics; social justice; engineering as social experimentation; safety and risk; professional issues in organizations; case studies; global awareness. Prereq: Jr or Sr standing, and enrollment in ECE major. Not open to students with credit for 481. This course is graded S/U.

3090 Technical Writing and Presentations U 1
Technical writing and communications skills. Prereq: Credit for a first writing course, and enrollment in ECE major.

3551 Introduction to Feedback Control Systems U 3
Provides fundamental concepts in feedback control systems design and analysis. Prereq: 3050 (322). Not open to students with credit for 551.

3557 Control Systems Laboratory U 1
Utilization of real-world plants for computer control; use of a commercially available software package (Matlab) for computer-aided analysis and design. Prereq or concor: 3561 (551), and enrollment in ECE or EngPhysics major. Not open to students with credit for 557.

3561 Advanced Digital Design U 3
Design and analysis of sequential circuits; digital circuit design using building blocks, programmable logic devices; design of basic computer components such as arithmetic logic units. Prereq: 2000, 2060, 2061, 2010, 2090.02, 209, 206 (Autumn 2010) or 206 and 261. Prereq or concor: 2060 (260), and enrollment in ECE, EngPhys, or CSE majors; or prereq or concor 2010 and permission of department. Not open to students with credit for 561.

3567 Microcontroller Lab U 1
Laboratory in which a microcontroller is used to interface real-world hardware to make a functioning system. Prereq: 2560 or CSE 2421, and enrollment in ECE, CSE, or EngPhysics major. Not open to students with credit for 3567.01.

3900 Capstone Design I U 1
Fundamentals of the engineering design process. Design principles and methodology. Project management during design. Prereq: Sr standing and enrollment in the ECE major. Prereq or concor: 3090. Not open to students with credit for 4900, 4900H, 4901, Engr 4901, 4903, 5901.01, or 5901.02H.

3905 Capstone Design I U 3
Fundamentals of the engineering design process. Application of design principles and methodology to conceptual and detailed design engineering. Project management design. Prereq: Option 1: Prereq or concor: 3080 or Philos 1332, and ECE 2560, 3010, 3027, 3030, 3040, 3050, and Sr standing, and enrollment in Electrical Engineering Program of Study (EES subplan) of the ECE major. Option 2: Prereq or concor: ECE 2560 or 2100, and 3080 or Philos 1332, and ECE 2560, 3010, 3027, 3030, 3040, 3050, 3051, 3561, 3567, CSE 2231, and 2451, and Sr standing, and enrollment in Computer Engineering Program of Study (CES subplan). Not open to students with credit for 3090, 4900, 4901, Engr 4903, or 5902.

4005 Capstone Design II U 3
Application of project management, design principles and methodology to conceptual and detailed design, implementation, and testing of a capstone project design. Teams of at least three arrange special projects with a faculty member. Prereq: Option 1: 2560, 3010, 3020, 3027, 3030, 3040, 3050, 3090, and Sr standing, and enrollment in Electrical Engineering Program of Study (EES subplan) of the ECE major. Prereq or concor: 3080 or Philos 1332. Option 2: 2560 or 2100, 3020, 3027, 3030, 3040, 3050, 3051, 3561, 3567, 3900, CSE 2231, and 2451, and Sr standing, and enrollment in Computer Engineering Program of Study (CES subplan). Prereq or concor: 3080 or Philos 1332, and ECE 5362. Not open to students with credit for 4900, 4901, Engr 4903, or 5902.

4901 Capstone Design II Special U 3
Application of design principles and methodology to conceptual and detailed design design, implementation, and testing of a capstone design project. Teams of at least three arrange special projects with a faculty member. Prereq: Option 1: 2560, 3010, 3020, 3027, 3030, 3040, 3050, 3090, and Sr standing, and enrollment in Electrical Engineering Program of Study (EES subplan) of the ECE major. Prereq or concor: 3080 or Philos 1332. Option 2: 2560 or 2100, 3020, 3027, 3030, 3040, 3050, 3051, 3561, 3567, 3900, CSE 2231, and 2451, and Sr standing, and enrollment in Computer Engineering Program of Study (CES subplan). Prereq or concor: 3080 or Philos 1332, and ECE 5362. Not open to students with credit for 4900, 4901, Engr 4903, or 5902.

4900 Capstone Design II U 3
Application of design principles and methodology to conceptual and detailed design, implementation, and testing of a capstone project. Not open to students with credit for 4900H, 4901, or Engr 4903 or 5902.

4901H Design II with Honors Thesis Project U 3
Application of design principles and methodology to conceptual and detailed design, implementation and testing, culminating in a capstone design project. Prereq: Honors standing, and permission of department, and: Option 1: 2560, 3010, 3020, 3027, 3030, 3040, 3050, 3090, and Sr standing, and enrollment in Electrical Engineering Program of Study (EES subplan) of the ECE major. Prereq or concor: 3080 or Philos 1332. Option 2: 2560 or 2100, 3020, 3027, 3030, 3561, 3567, 3900, CSE 2231, and 2451, and Sr standing, and enrollment in Computer Engineering Program of Study (CES subplan). Prereq or concor: 3080 or Philos 1332, and ECE 5362. Not open to students with credit for 4900H, 4901, or Engr 4903 or 5902.

4901H Undergraduate Research U ½ - 3
Supervised undergraduate research in various topics. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions.

4901H Undergraduate Honors Research U ½ - 3
Supervised research in various topics for undergraduate honors students. Prereq: Honors standing; or GPA 3.4 or above, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions.

4902 Undergraduate Research U ½ - 3
Supervised undergraduate research in various topics. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

4901 Undergraduate Thesis Research U ½ - 3
Undergraduate Thesis (Honors) research on topics in Electrical & Computer Engineering. Prereq: GPA 3.0 or above, and enrollment in ECE major, and approved Thesis (Distinction) project. Repeatable to a maximum of 6 cr hrs or 6 completions.

4901H Undergraduate Honors Thesis Research U ½ - 3
Undergraduate Honors Thesis (Distinction) research on topics in Electrical & Computer Engineering. Prereq: Honors standing, or GPA 3.4 or above; and enrollment in ECE major; and approved Honors Thesis (Distinction) project. Repeatable to a maximum of 6 cr hrs or 6 completions.

5000 Introduction to Analog and Digital Communications U G 3
Communications channel modeling, analog communication schemes, digital communication schemes, error rate analysis, and error control coding. Prereq: 3050, and Stat 3470 or Physics 3700; or Grad standing.

5007 Communications Laboratory U G ½
A laboratory in digital data communication implementing a software-defined modern: quadrature modulation; phase-shift keyed modulation; inter-symbol interference; timing and frequency recovery. Prereq or concor: 5000 (501), and enrollment in ECE or EngPhysics major; or Grad standing in ECE. Not open to students with credit for 4007 or 506.

5010 Wireless Propagation and Remote Sensing U G 3
Practical methods for predicting tropospheric, groundwave, and ionospheric propagation, including refraction, reflection, and extinction effects. Study of remote sensing systems and their applications. Prereq: 3010, or Grad standing in Engineering, Biological Sciences, or Math and Physical Sciences.
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<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Prerequisites</th>
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<tbody>
<tr>
<td>5011</td>
<td>Antennas</td>
<td>U G 3</td>
<td></td>
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<tr>
<td>5012</td>
<td>Integrated Optics</td>
<td>U G 3</td>
<td></td>
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<tr>
<td>5013</td>
<td>Introduction to Radar Systems</td>
<td>U G 3</td>
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<tr>
<td>5017</td>
<td>Microwave Engineering</td>
<td>U G 4</td>
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<td>5020</td>
<td>Mixed Signal VLSI</td>
<td>U G 3</td>
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<tr>
<td>5021</td>
<td>Analog Integrated Circuits</td>
<td>U G 3</td>
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<td>5022</td>
<td>Radio Frequency Integrated Circuits</td>
<td>U G 3</td>
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<td>5023</td>
<td>Introduction to Data Converters and Phase-Locked Loops</td>
<td>U G 3</td>
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<td>5027</td>
<td>Microwave Electronics</td>
<td>U G 4</td>
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<td>5031</td>
<td>Semiconductor Process Technology</td>
<td>U G 3</td>
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<td>5033</td>
<td>Surfaces and Interfaces of Electronic Materials</td>
<td>U G 3</td>
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<td>5037</td>
<td>Solid State Electronics and Photonics Laboratory</td>
<td>U G 4</td>
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</tr>
<tr>
<td>5041</td>
<td>Electric Machines</td>
<td>U G 3</td>
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<tr>
<td>5042</td>
<td>Power Systems</td>
<td>U G 3</td>
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<tr>
<td>5043</td>
<td>Power Systems - Analysis and Operation</td>
<td>U G 3</td>
<td></td>
</tr>
<tr>
<td>5050</td>
<td>Humanitarian Engineering</td>
<td>U G 3</td>
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<tr>
<td>5070</td>
<td>Neuroengineering and Neuroprosthetics</td>
<td>U G 3</td>
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<td>5078</td>
<td>Empowering the Entrepreneurial Electrical and Computer Engineer</td>
<td>U G 3</td>
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<td>5101</td>
<td>Introduction to Wireless Networking</td>
<td>U G 3</td>
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<tr>
<td>5120</td>
<td>Introduction to Integrated Circuits Test and Measurement</td>
<td>U G 3</td>
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<tr>
<td>5127</td>
<td>Power Electronics Lab</td>
<td>U G 1</td>
<td></td>
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<tr>
<td>5131</td>
<td>Lasers</td>
<td>U G 3</td>
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**Electrical and Computer Engineering**

- **Antennas**
  - Electromagnetic radiation; fundamental antenna parameters; dipole, loops, patches, broadband and other antennas; array theory; ground plane effects; horn and reflector antennas; pattern synthesis; antenna measurements. Prereq: 3010 (312), or Grad standing in Engineering, Biological Sciences, or Math and Physical Sciences. Not open to students with credit for 711.

- **Integrated Optics**
  - Fundamentals of planar lightwave circuits and guided wave devices; laser light in anisotropic media; electroptic and nonlinear optical effects; concepts in telecommunications, RF photonics, nanophotonics. Prereq: 3010, or Grad standing in Engineering, Biological Sciences, or Math and Physical Sciences.

- **Introduction to Radar Systems**
  - Introduces the fundamentals of radar such as the main concepts and techniques used in modern radar systems. The class is a survey course exposing students to a wide range of radar applications and design issues. Prereq: 3050, and 3010 or 3010.01, and Stat 3470; or Grad standing in Engr. Not open to students with credit for 5194.01.

- **Microwave Engineering**
  - Transmission line theory; multiconductor S-parameters; transformers, couplers, filters, resonators, circulators; electromagnetic interference and compatibility; computer-aided design; microstrip realization and testing with a network analyzer. Prereq: 3010, or enrollment in ECE major; or Grad standing in Engineering, Biological Sciences, or Math and Physical Sciences.

- **Mixed Signal VLSI**
  - Design and circuit analysis of basic VLSI structures such as registers, cell libraries, digital and analog I/O. Physical layout, timing analysis, PLLs, design tools. Prereq: 3020, or Grad standing in Engineering, Biological Sciences, or Math and Physical Sciences.

- **Analog Integrated Circuits II**
  - Advanced analog integrated circuits. Linear feedback networks design and stability analysis, multi-stage CMOS op-amp design and compensation, fully-differential op-amps and common-mode feedback networks, comparators, transconductors, bandgaps, sample and hold circuits, switched-capacitor circuits, noise analysis of CMOS circuits. Prereq: 4021; or Grad standing in Engineering, and permission of instructor.

- **Radio Frequency Integrated Circuits**
  - Modulation, wireless standards, transceiver architecture, transistor models, passive component models, LNA, VCO, PLL, Mixers, integrated PA, RFIC layout. Prereq or concur: 5021 or 5022, or Grad standing in Engineering, Biological Sciences, or Math and Physical Sciences.

- **Introduction to Data Converters and Phase-Locked Loops**
  - This course focuses on fundamentals of data converters and timing circuits, including discrete-time analog/mixed signal analysis and signal conditioning for asynchronous and synchronous computing. The topics include analog switches, sampling circuits, switched-capacitor amplifiers and filters, ADCs, DACs, PLLs, DLLs and discrete-time neural networks. Prereq: 4021; or Grad standing in Engr or Physic.

- **Power Electronics: Devices, Circuits, and Applications**
  - Provides an introduction to power electronic conversion principles. Analytical techniques will be developed through the study of widely used converter circuits. Prereq: 3020 (323), or Grad standing in Engineering, Biological Sciences, or Math and Physical Sciences. Not open to students with credit for 624, 724, or 844.

- **Microwave Electronics**
  - Design principles of microwave transistor amplifiers and oscillators; low-noise, power and broadband amplifiers, linearization; computer-aided design; microstrip realizations and testing in the laboratory. Prereq: 3020 (323), and enrollment in ECE major; or Grad standing in Engineering, Biological Science, or Math and Physical Sciences. Not open to students with credit for 723.

- **Semiconductor Process Technology**
  - Discrete and integrated circuit device design, silicon VLSI processing technologies, III-V compound semiconductor device fabrication technologies; epitaxy, doping, bandgap engineering; and device measurements and failure mechanisms. Prereq: 3030, or Grad standing in Engineering, Biological Sciences, or Math and Physical Sciences.

- **Surfaces and Interfaces of Electronic Materials**
  - Provides the fundamental and practical basis for designing, processing, and characterizing the interfaces controlling the next generations of microelectronic and optoelectronic device structures. Prereq: 3030, and Physics 1250 or 1250H; or Grad standing in Engineering, Biological Science, or Math and Physical Sciences.
172 Electrical and Computer Engineering

5132 Photonicics U G 3
Fiber optics, optical systems and devices, optical detection, photonic band gaps, holography, and optical data storage. Prereq: 3010, 3010.01, or 3010.02, and 3030 or 3030.01; or Grad standing in Engineering, Biological Sciences, or Math and Physical Sciences. Not open to students with credit for 5132.01.

5200 Introduction to Digital Signal Processing U G 3
Sampling and reconstruction; discrete-time rate conversion; processing of discrete-time signals; design of discrete-time filters, selected topics in adaptive and/or multidimensional signal processing. Prereq: 3050, and Stat 3470 or Math 4530; or Grad standing.

5206 Medical Imaging and Processing U G 3
Introduction to medical imaging techniques (CT, MRI, PET, ultrasound), including data collection, image reconstruction, physics of tissue interactions, and digital processing of medical images. Prereq: 3050 (322). Prereq or concr: 3060 or 562, or Grad standing in ECE, BiomedE, or Biophy. Not open to students with credit for 506.

5207 Real-Time Digital Signal Processing Laboratory U G 3
Real-time signal processing of acoustic signals and video images; finite impulse response filters; adaptive filtering; array processing; fast Fourier transform. Prereq or concr: 5200, and enrollment in ECE major or Grad standing in ECE. Not open to students with credit for 4207 or 5609.

5227 Fundamentals of Power Management Integrated Circuits for VLSI Systems U G 4
Theory, design and applications of integrated power management integrated circuits in VLSI systems. This includes: system and circuit architectures, performance metrics, practical implementations, design considerations in VLSI systems in advanced CMOS processes, and design techniques for integrated power regulators and battery chargers. Background in basic analog design is strongly recommended. Prereq: 4021, or Grad standing in Engineering or Physics.

5237 Photovoltaics Laboratory U G 4
Introduction to laboratory techniques for processing and fabrication of inorganic and organic solar cells, and photovoltaic testing and measurement techniques to characterize solar cells. Prereq: 3030 or MatSciEn 3271, and enrollment in ECE or MatSciEn major; or Grad standing in Biological Sciences, Engineering, Math and Physical Sciences. Cross-listed in MatSciEn.

5244 Si and Wide Band Gap Power Devices U G 3
Basic design and operation of Si and Wide Band Gap (WBG: SiC, GaN and ultra wide band gap semiconductors) power devices and the applications of commercial devices in power electronics applications. Trade-offs between various devices. Static and dynamic operation. Comparison of Si and SiC devices and design differences. Prereq: 3030, or Grad standing in Engr or Physics. Not open to students with credit for 5194.07 or 5234.

5307 Introduction to Machine Learning for ECE U G 4
Introduction to Machine Learning. Coverage includes linear regression, linear classification, model and feature selection, neural networks, clustering, and principle components analysis. Python will be used for implementation examples. Prereq: CSE 1222 or Engr 1281.xx, and Math 2568 and Stat 3470, and enrollment in ECE major; or Grad standing. Not open to students with credit for 4194.02 (Sp'19, Machine Learning), 4300.5300, or MechEng 5194 (Au'19, Applied ML for MAE).

5362 Computer Architecture and Design U G 3
Design of general purpose digital computers including arithmetic and control units, input/output, and memory subsystems. Prereq: 2560 and 3561, and undergraduate enrollment in ECE, CSE, or EngPhysics major; or Grad standing in Engineering. Not open to students with credit for CSE 3421.

5400 Instrumentation, Signals, and Control in Transportation U G 3
Applications Interdisciplinary course bringing together electrical engineering tools and transportation applications. Students gain valuable experience working in teams while learning traffic flow, surveillance and control. Prereq: 2020 and 2050, and Math 2415; or Grad standing in Engineering, Biological Sciences, or Math and Physical Sciences. Not open to students with credit for CivEng 4750 or 6750. Cross-listed in CivEng 5707.

5460 Image Processing U G 3
Fundamentals and research directions in image processing: cameras, geometry, calibration, 2D and 3D image reconstruction, stereo, structure from motion, Radiometry, filtering, motion estimation, and applications. Prereq: 5200 (600), and Stat 3470 (427) or Math 530; or Grad standing in Engineering, Biological Sciences, Statistics, Bioinformatics, or Math and Physical Sciences. Not open to students with credit for 707.

5461 Introduction to Cybersecurity U G 3
Introduction to cybersecurity. Technical fundamentals of data, software, component, network, and system security. Cybersecurity from an organizational and societal view point, including human factors. Prereq: Jr, Sr, or Grad standing, or permission of instructor. Not open to students with credit for CSE 5471. Cross-listed in CSE 5471.

5463 Introduction to Real Time Robotics Systems U G 3
Components of a robot system, robot forward and reverse kinematics; robot dynamics; robot force generation, robot trajectory generation. Prereq: Math 2177 or 2174, or 2415 and 2568; and Physics 1250, 1255H, 1260, or 2300; and CSE 1221, 1222, Engr 1181, 1281.01H, 1281.02H, 1221, or 1222; or Grad standing in Engr; or permission of instructor. Not open to students with credit for MechEng 5463 or 7752. Cross-listed in MechEng.

5465 Advanced Microcomputers U G 3
An introduction to current microcomputer systems with emphasis on hardware implementation of I/O, direct memory access, interrupts, memory, and microprogramming. Prereq: 5362, or 662 and 694A, or Grad standing in Engineering. Not open to students with credit for 765.

5466 Embedded Computer Systems U G 3
This course introduces the design principles, analysis methods and case studies of microprocessor-based and time-critical embedded systems, such as sensor and actuator networks, multimedia devices, mobile phones, and avionics. Topics include real-time operating systems, processor scheduling, performance control, resource management, power-aware design, energy optimization, etc. Prereq: 5362, or Grad standing in Engr. Not open to students with credit for 8194.03.

5510 Introduction to Computational Electromagnetics U G 3
Numerical methods for solving Maxwell equations both static and electromodynamics, introduction to finite difference, finite element and integral equation methods, and applied linear algebra. Prereq: 3010, or Grad standing in Engineering, Biological Sciences, or Math and Physical Sciences. Not open to students with credit for 715 or 815.

5530 Fundamentals of Semiconductors for Microelectronics U G 3
Crystal structure, semiconductor energy band structure, electron transport and carrier recombination, heterostructures, and optical and dielectric properties. Prereq: 3030 (452), or Grad standing in Engineering, Biological Sciences, or Math and Physical Sciences. Not open to students with credit for 730.

5550 Computational Humanitarianism U G 3
Computational models of individual and group poverty and underdevelopment; computational social justice; assessing social impact of technology; sensitivity analysis for technology prioritization and design; feedback control for computer automation of helping to meet social justice objectives; social agreement, choice, and allocation. Prereq: Jr, Sr or Grad standing in College of Engineering; or permission of instructor. Not open to students with credit for 5194.06.

5551 State-Space Control Systems U G 3
Discrete-time state variable representations; pole placement via state-feedback; introduction to realization theory; observer design; introduction to Kalman filtering; linear quadratic regulator theory. Prereq: 3050 and Stat 3470; or Grad standing.

5553 Autonomy in Vehicles U G 3
Autonomy in the context of modern vehicles: cruise control, anti-lock brake systems (ABS), steering controller keeping; introduction to automated highway systems (AHS). Prereq: 5551, 5551E, or 5651, or Grad standing in Engineering. Not open to students with credit for 753.02.

5554 Powertrain Control Systems U G 3
Application of digital control system theory, from viewpoints of input-output and state variable representations, to realistic problems in automotive powertrain systems. Prereq: 5551 or 5551E, or Grad standing in Engineering, Biological Sciences, or Math and Physical Sciences.

5555 Securing Autonomous Systems U G 3
The course covers different security measures for safeguarding against cyberattacks, detecting cyberattacks, and mitigating the effects of cyberattacks on autonomous control systems. Prereq: 3050; or Grad standing in Engineering, Math, or Statistics.

5560 Advanced Hardware Architecture Design Techniques U G 3
This course introduces highly-practical methodologies and techniques that can be broadly used to improve the efficiency and achieve speed-area-power tradeoffs in the design of application-specific hardware implementation architectures for various algorithms. Efficient implementation architectures of commonly used arithmetic and digital signal processing functional blocks will also be discussed. Prereq: 2560, and prereq or concr: 5681 or 3050; or Grad standing in Engr; or permission of instructor. Not open to students with credit for 5194.08.

5561 Introduction to Cybersecurity U G 3
Introduction to cybersecurity. Technical fundamentals of data, software, component, network, and system security. Cybersecurity from an organizational and societal view point, including human factors. Prereq: Jr, Sr, or Grad standing, or permission of instructor. Not open to students with credit for CSE 5471.

5571 Introduction to Time Series Analysis U G 3
Introduction to time series analysis. Realization theory; observer design; classical and modern control theory. Prereq: 2177 or 2174, or 2177H; or 2415 and 2568; and Math 1250, 1255, or 1260; or 2300; and CSE 1222, Engr 1181, 1281.01H, 1281.02H, 1221; or 1222; or Grad standing in Engr; or permission of instructor. Not open to students with credit for MechEng 5463 or 7752. Cross-listed in MechEng.
5567.01 Offensive Security U G 3
This course will give students an overview of existing offensive computing techniques, which include well-known attacks that break confidentiality, integrity and availability of computing resources. Attacks targeting on human weaknesses without taking special care to security will also be discussed.
Prereq: CSE 2431, 5431, or Grad standing. Not open to students with credit for CSE 5477.01. Cross-listed in CSE 5477.01.

5567.02 Reverse Engineering and Software Security U G 3
This course will give students an overview of cutting edge reverse engineering techniques as well as software security and defense practices. Programming experience in C required.
Prereq: CSE 1222, or permission of instructor. Prereq or concur: ECE 5561. Not open to students with credit for CSE 5547.02. Cross-listed in CSE 5547.02.

5570 Antiracist Technology U G 4
Discrimination against racial and ethnic minorities is prevalent, systemic, and global. Racism and racial justice principles are outlined. Case studies on racist technologies, those that promote or sustain racism, are studied. Engineering design methodology is used to modify or create several new technologies that help the antiracist oppose racism.
Prereq: Engr 1182, 1282, Grad standing in Engr, or permission of instructor.

5759 Optimization for Static and Dynamic Systems U G 3
Numerical optimization techniques as applied to selected electrical engineering application areas.
Prereq: 3050, or Grad standing in Engineering or Math and Physical Sciences.

5832 Photovoltaics and Energy Conversion U G 3
Photovoltaic materials and devices; solar cell device physics; solar cell simulation, design and operation; silicon cell technologies; thin film technologies; III-V technologies; nanostructures; terrestrial and space applications.
Prereq: 3030, or Grad standing in Engr or Physics.

5833 Organic and Printed Flexible Electronics U G 3
Conducting organic small molecules and polymers (structural, optical and electrical properties); printable metal-oxide semiconductors; Printing techniques, organic light emitting diodes; transport and carrier injection; organic transistors; organic lasers.
Prereq: 3030, or permission of instructor for non-ECE majors; or Grad standing in engineering, biological sciences, or math and physical sciences. Not open to students with credit for 7833 or 5194.04.

6001 Probability and Random Variables G 3
Probability, random variables, and random vectors for analysis and research in electrical engineering. Distribution functions, characteristic functions, functions of random variables and vectors, Markov chains.
Prereq: Grad standing. Not open to students with credit for 804 or 805.

6010 Electromagnetic Field Theory I G 3
Maxwell's Equations; plane waves; field representations and solutions in unbounded space; waveguides and cavities; elements of Green's Functions; cylindrical and spherical waves; electromagnetic theorems.
Prereq: 5010 (713), and 5011 or 813; or Grad standing in Engineering, Biological Sciences, or Math and Physical Sciences. Not open to students with credit for 719, 810, or 811.

6011 Bioelectromagnetics G 3
This course provides an introduction to the interdisciplinary field of bioelectromagnetics for graduate students. Lectures cover the interaction of electromagnetic fields with biological tissues across the frequency spectrum; bioelectromagnetic dosimetry; and various applications of bioelectromagnetics (medical, consumer, and more).
Prereq: Grad standing in Engineering, Biological Sciences, Mathematical and Physical Sciences; or permission of instructor.

6030 Micro-Electro-Mechanical Systems (MEMS) Design G 3
The field of micro-electro-mechanical systems (MEMS) is an interdisciplinary area that includes design and fabrication of sensors and actuators (transducers) that are capable of micron-size mechanical movements. Lectures cover a wide range of topics in design & fabrication. Projects include FE simulation of an inertial, optical, RF, or power MEMS devices as an integral part of this course.
Prereq: Grad standing in Engineering or Physics, or permission of instructor.

6070 Project Management in Electrical and Computer Engineering G 3
Students learn project management principles and apply them to Electrical and Computer Engineering real-world projects.
Prereq: Grad standing in ECE. Not open to students with credit for 6194.02.

6101 Computer Communication Networks G 3
Fundamental understanding of network analysis, error-control, routing, congestion-control, multi-access, and their examples in the context of the existing communication networks. A previous course in statistics is recommended.
Prereq: Grad standing in Engr. Not open to students with credit for CSE 6461. Cross-listed in CSE 6461.

6102 Wireless Networks G 3
Design principles and communication algorithms for wireless networks with a focus on MAC and routing protocols, scheduling algorithms, power control, and scaling properties.
174 Electrical and Computer Engineering

7011 Computational Electromagnetics G 3
Advanced topics in numerical methods for solving Maxwell equations, including finite element methods, integral equation methods, and their hybridization. Prereq: 5510 (715) or 6910. Not open to students with credit for 813 or 814.

7020 Advanced Data Converters and Phase-Locked Loops G 3
A comprehensive overview of the most recent system architectures of data converters and phase-locked loops. Provides a good understanding how performance specifications and process technology limitations lead to implementation decisions. The presented principles are illustrated by examples and real life case studies. Prereq: 5021 or 5023, or permission of instructor.

7022 Advanced RF Integrated Circuits G 3
Advanced topics on RF and mm-wave circuits. Frequency synthesizers, transmitter linearization techniques (e.g. polar circuits), MIMO and phase array circuits, power DIAs. Prereq: 5022 (620), or Grad standing in Engineering, Biological Sciences, or Math and Physical Sciences. Not open to students with credit for 694K or 694.02.

7023 High Speed Interface Circuits and Systems Design G 3
Analysis and design of link architectures and circuits for wireline communication systems. Emphasis on design intuition, link budgeting and power/performance trade-offs in implementation of data links in advanced CMOS processes. Topics include channel characterization, noise analysis, equalization, transmitter and receiver circuits, signaling schemes, clocking, synchronization and timing recovery. Prereq or conc: 5020 and 5021, or permission of instructor.

7027 Advanced Topics in Analog VLSI Design G 4
Advanced topics in analog VLSI design, such as integrated data converters, or power management integrated circuits, or high-performance analog circuits. This includes: system and circuit architectures, performance metrics, practical implementations, design considerations in advanced semiconductor processes, chip design projects, and characterization. Prereq: Permission of instructor. Repeatable to a maximum of 8 cr hrs.

7032 Physical Electronics of Advanced Semiconductor Devices G 3
MOSCAPs, Gated Diode, CMOS Bulk/SOI Transistors, Photodiodes, Carrier Transport/Storage, Scaling, Mobility, CCDs, CMOS, EEPROMs, SiGe, SiC, ISFETs, BJTs, Noise and Modeling. Prereq: 5530 (730) or 6531. Not open to students with credit for 894 (Sp12, Advanced Semiconductor Devices) or 894.04.

7080 Ethics and Professionalism G 1
Professionalism standards, ethical dilemmas, codes of ethics, moral frameworks and social justice, engineering as social experimentation, safety and risk, workplace rights and responsibilities, professional communications, research integrity, environmental ethics, global issues. Case study based approach. Prereq: Grad standing in ECE. This course is graded SU.

7100 Network Optimization and Algorithms G 3
Convex optimization, probabilistic, and algorithmic methods for the design and analysis of efficient and practical algorithms for complex and stochastic communication networks. Prereq: Grad standing. Not open to students with credit for 694R.

7103 Discrete Stochastic Processes G 3
Stochastic processes in discrete time or space for electrical engineering, Renewal theory, Markov chains and processes, dynamic programming, basic large deviations theory and martingales. Prereq: 6001 (804). Not open to students with credit for 694Q or 694.01.

7200 Signal Processing G 3
Multi-rate signal processing, filter banks, perfect reconstruction, time-frequency analysis, and wavelets and applications. Prereq: Not open to students with credit for 700.

7202 Reinforcement Learning G 3
Fundamentals of Markov decision processes and reinforcement learning algorithms. Prereq: Grad standing in Engineering or Math. Not open to students with credit for ISE 7202. Cross-listed in ISE.

7402 Advanced Machine Learning for Remote Sensing Image Interpretation G 3
Introduces basic high-resolution remote sensing concepts with focus on optical remote sensing, and computational solutions for typical remote sensing problems. Students are assumed to know basic knowledge in statistical estimation, linear algebra and numerical methods for engineering. Students with prior experiences on remote sensing/machine learning/computer vision will find this easier to follow. Prereq: Grad standing, or permission of instructor. Not open to students with credit for CivEn 7421. Cross-listed in CivEn 7421.

7531 Epitaxial Heterostructures G 2
Science and techniques behind thin film growth and engineering for combining different materials, altering chemical composition at the nanometer scale, while controlling defects and strain. Epitaxial crystal growth will be explained. Students will gain an understanding of the kinetics, thermodynamics, and technology involved in epitaxial heterostructures and self-assembled nanostructures. Prereq: Grad standing. Not open to students with credit for MSE 7531. Cross-listed in MSE.

7811 Electromagnetic Interference and Compatibility G 3
Electromagnetic interference and compatibility, signal integrity in ICs, conducted emissions and electromagnetic radiation susceptibility, and crosstalk and shielding. Prereq: 6010 (710). Not open to students with credit for 814.

7813 Advanced Antenna Theory and Design G 3
Topics in Advanced Antenna Theory and Design. Prereq: 5011 or 613, or Grad standing in Engineering, Biological Sciences, or Math and Physical Sciences. Not open to students with credit for 815.

7814 Microwave Remote Sensing G 3
Description of microwave remote sensing systems. Theories of scattering from random media and rough surfaces. Prereq: 6101.

7821 Mixed Signal Verification and CAD Tools G 3
Principles of combining analog, RF, and digital design, simulation, and verification strategies using modern CAD tools. Prereq: 5020, 5222, or 702. Not open to students with credit for 894Z or 822.

7822 Advanced Nonlinear Microwave Circuit Engineering G 3
Large-signal characterization and modeling of nonlinear RF circuits; power amplifiers; oscillators; modulators; broadband linearization, power efficient design. Prereq: 5027 or 723. Not open to students with credit for 694K or 694.02.

7831 Microwave Semiconductor Devices G 3
Principles of microwave semiconductor devices; scattering and high-field transport; Gunn effect; FET wave equation, HEMT; HBT, large signal RF modeling and measurements; noise; traps; self-heating. Prereq: Grad standing in Engr or Physics.

7841 Advanced Topics in Power Electronics G 3
Advanced topics of power electronics, beginning with utility and vehicle applications and evolving into advanced circuit topologies and control. Prereq: 5025 (624). Not open to students with credit for 844.

7842 Advanced Topics in Electric Machines G 3
Advanced topics of electric machines, beginning with dynamic modeling and principles of vector control and evolving into new design and control of electric machines for advanced traction motors and renewable energy generator systems. Prereq: 5541 (643) and 5551 (650). Not open to students with credit for 743, 744, or 845.

7843 Advanced Topics in Power Systems G 3
Advanced topics of power system protection, beginning with equipment protection and evolving into system wide protection design and operation to accommodate smart-grid technologies. Prereq: 5042 or 740. Not open to students with credit for 741.

7850 Hybrid Dynamical Systems: Theory and Applications G 3
Introduction to hybrid systems (continuous dynamics coupled with discrete logic rules). Topics include stability analysis, optimal control, model predictive control, reachability, and state estimation of hybrid systems. Emphasis will be placed on applying existing hybrid systems theories to a wide range of applications in networked control systems, smart grid, power electronics, and robotics. Prereq: 6750 or 5750 (750).

7854 Nonlinear and Adaptive Control G 3
Advanced analysis of uncertain nonlinear systems. Design methodologies for complex interconnected nonlinear systems. Applications of nonlinear and adaptive control design to aerospace and robotic systems. Prereq: 6754 (5754 or 754) and 6750 (5750 or 750). Not open to students with credit for 857.

7858 Intelligent Control G 3
Fuzzy control, neural control, genetic algorithms, learning control, and distributed intelligent control. Prereq: 5551 (551) or equiv. Not open to students with credit for 858.

7859 Sliding Mode Control in Electromechanical Systems G 3
Sliding modes an efficient tool to control high order dynamic plants operating under uncertainty conditions. Prereq: 5750 (750) or MechEng 5372. Not open to students with credit for 859 or MechEng 7259 or 859. Cross-listed in MechEng 7259.

7864 Advanced Computer Design G 3
Parallel computer architectures, pipeline design, multiprocessor design, interprocessor communication, multi-core architectures, case studies and application examples. Prereq: 5362 (662) or Grad standing. Not open to students with credit for 864.

7866 Computer Vision G 3
Computer vision systems, image models, feature extraction, shape representation and recognition, object modeling and recognition, matching, probabilistic and statistical modeling, semantic knowledge, and face perception. Prereq: 5460 (707). Not open to students with credit for 863.

7868 Pattern Recognition and Machine Learning G 3
Fundamentals of pattern recognition techniques and their application to computer and electrical engineering problems, medicine, cognitive science, and bioinformatics. Prereq: 6001 (804). Not open to students with credit for both 779 and 874.
Electrical and Computer Engineering 175

1100.06 Introduction to Ohio State and Computer Science and Engineering
Introduction to the University community and College of Engineering: Strategies for successful transition, academic requirements, University procedures, grading system, resources, overview of engineering academic areas of study and services.
Prereq: Enrollment in the College of Engineering. Not open to students with credit for FAES 1100, ArtsCol 1100, ArtsSci 1100, HumanEc 1100, and Exp 1100.

1100.07 Introduction to Ohio State and Electrical and Computer Engineering
Introduction to the University community and College of Engineering: Strategies for successful transition, academic requirements, University procedures, grading system, resources, overview of engineering academic areas of study and services.
Prereq: Enrollment in the College of Engineering. Not open to students with credit for FAES 1100, ArtsCol 1100, ArtsSci 1100, HumanEc 1100, and Exp 1100.

1100.08 Introduction to Ohio State and Engineering Physics
Introduction to the University community and College of Engineering: Strategies for successful transition, academic requirements, University procedures, grading system, resources, overview of engineering academic areas of study and services.
Prereq: Enrollment in the College of Engineering. Not open to students with credit for FAES 1100, ArtsCol 1100, ArtsSci 1100, HumanEc 1100, and Exp 1100.

1101.06 Introduction to Ohio State and Industrial and Systems Engineering
Introduction to the University community and College of Engineering: Strategies for successful transition, academic requirements, University procedures, grading system, resources, overview of engineering academic areas of study and services.
Prereq: Enrollment in the College of Engineering. Not open to students with credit for FAES 1100, ArtsCol 1100, ArtsSci 1100, HumanEc 1100, and Exp 1100.

1101.07 Introduction to Ohio State and Aerospace Engineering
Introduction to the University community and College of Engineering: strategies for successful transition, academic requirements, university procedures, grading system, resources, overview of engineering academic areas of study and services.
Prereq: Enrollment in the College of Engineering. Not open to students with credit for FAES 1100, ArtsCol 1100, ArtsSci 1100, HumanEc 1100, and Exp 1100.

1101.08 Introduction to Ohio State and Civil and Environmental Engineering
Introduction to the University community and College of Engineering: Strategies for successful transition, academic requirements, University procedures, grading system, resources, overview of engineering academic areas of study and services.
Prereq: Enrollment in the College of Engineering. Not open to students with credit for FAES 1100, ArtsCol 1100, ArtsSci 1100, HumanEc 1100, and Exp 1100.
176 Engineering

1110.04 Introduction to Ohio State and Chemical and Biomolecular Engineering I
Introduction to the University community and College of Engineering; Strategies for successful transition; Academic requirements; University procedures; Grading system; Resources; Overview of engineering academic areas of study and services.
Prereq: Enrollment in Engineering. Not open to students with credit for Engr 1110 (Engineer 100), FABEng 1100 (100), ENR 1100 (100), or USAS 1100 (100).

1110.05 Introduction to Ohio State and Civil Engineering I
Introduction to the University community and College of Engineering; Strategies for successful transition; Academic requirements; University procedures; Grading system; Resources; Overview of engineering academic areas of study and services.
Prereq: Enrollment in Engineering. Not open to students with credit for Engr 1110 (Engineer 100), FABEng 1100 (100), ENR 1100 (100), or USAS 1100 (100).

1110.06 Introduction to Ohio State and Computer Science and Engineering I
Introduction to the University community and College of Engineering; Strategies for successful transition; Academic requirements; University procedures; Grading system; Resources; Overview of engineering academic areas of study and services.
Prereq: Enrollment in Engineering. Not open to students with credit for Engr 1110 (Engineer 100), FABEng 1100 (100), ENR 1100 (100), or USAS 1100 (100).

1110.07 Introduction to Ohio State and Electrical and Computer Engineering I
Introduction to the University community and College of Engineering; Strategies for successful transition; Academic requirements; University procedures; Grading system; Resources; Overview of engineering academic areas of study and services.
Prereq: Enrollment in Engineering. Not open to students with credit for Engr 1110 (Engineer 100), FABEng 1100 (100), ENR 1100 (100), or USAS 1100 (100).

1110.08 Introduction to Ohio State and Engineering Physics I
Introduction to the University community and College of Engineering; Strategies for successful transition; Academic requirements; University procedures; Grading system; Resources; Overview of engineering academic areas of study and services.
Prereq: Enrollment in Engineering. Not open to students with credit for Engr 1110 (Engineer 100), FABEng 1100 (100), ENR 1100 (100), or USAS 1100 (100).

1110.09 Introduction to Ohio State and Environmental Engineering I
Introduction to the University community and College of Engineering; Strategies for successful transition; Academic requirements; University procedures; Grading system; Resources; Overview of engineering academic areas of study and services.
Prereq: Enrollment in Engineering. Not open to students with credit for Engr 1110 (Engineer 100), FABEng 1100 (100), ENR 1100 (100), or USAS 1100 (100).

1110.11 Introduction to Ohio State and Industrial and Systems Engineering I
Introduction to the University community and College of Engineering; Strategies for successful transition; Academic requirements; University procedures; Grading system; Resources; Overview of engineering academic areas of study and services.
Prereq: Enrollment in Engineering. Not open to students with credit for Engr 1110 (Engineer 100), FABEng 1100 (100), ENR 1100 (100), or USAS 1100 (100).

1110.12 Introduction to Ohio State and Materials Science and Engineering I
Introduction to the University community and College of Engineering; Strategies for successful transition; Academic requirements; University procedures; Grading system; Resources; Overview of engineering academic areas of study and services.
Prereq: Enrollment in Engineering. Not open to students with credit for Engr 1110 (Engineer 100), FABEng 1100 (100), ENR 1100 (100), or USAS 1100 (100).

1110.13 Introduction to Ohio State and Mechanical Engineering I
Introduction to the University community and College of Engineering; Strategies for successful transition; Academic requirements; University procedures; Grading system; Resources; Overview of engineering academic areas of study and services.
Prereq: Enrollment in Engineering. Not open to students with credit for Engr 1110 (Engineer 100), FABEng 1100 (100), ENR 1100 (100), or USAS 1100 (100).

1110.14 Introduction to Ohio State and Welding Engineering I
Introduction to the University community and College of Engineering; Strategies for successful transition; Academic requirements; University procedures; Grading system; Resources; Overview of engineering academic areas of study and services.
Prereq: Enrollment in Engineering. Not open to students with credit for Engr 1110 (Engineer 100), FABEng 1100 (100), ENR 1100 (100), or USAS 1100 (100).

120.01 Introduction to Ohio State and Aeronautical and Astronautical Engineering II
Assessment of major / academic interests, advanced study skills, campus activities, program enrichment opportunities, engineering services, internships, and development of a personalized four-year curricular plan in an engineering major.
Prereq or concur: Engr 1110.XX. Not open to students with credit for Engr 1110 (Engineer 100), FABEng 1100 (100), ENR 1100 (100), or USAS 1100 (100).

120.02 Introduction to Ohio State and Aviation II
Assessment of major / academic interests, advanced study skills, campus activities, program enrichment opportunities, engineering services, internships, and development of a personalized four-year curricular plan in an engineering major.
Prereq or concur: Engr 1110.XX. Not open to students with credit for Engr 1110 (Engineer 100), FABEng 1100 (100), ENR 1100 (100), or USAS 1100 (100).

120.03 Introduction to Ohio State and Biomedical Engineering II
Assessment of major / academic interests, advanced study skills, campus activities, program enrichment opportunities, engineering services, internships, and development of a personalized four-year curricular plan in an engineering major.
Prereq or concur: Engr 1110.XX. Not open to students with credit for Engr 1110 (Engineer 100), FABEng 1100 (100), ENR 1100 (100), or USAS 1100 (100).

120.04 Introduction to Ohio State and Chemical and Biomolecular Engineering II
Assessment of major / academic interests, advanced study skills, campus activities, program enrichment opportunities, engineering services, internships, and development of a personalized four-year curricular plan in an engineering major.
Prereq or concur: Engr 1110.XX. Not open to students with credit for Engr 1110 (Engineer 100), FABEng 1100 (100), ENR 1100 (100), and USAS 1100 (100).

120.05 Introduction to Ohio State and Civil Engineering II
Assessment of major / academic interests, advanced study skills, campus activities, program enrichment opportunities, engineering services, internships, and development of a personalized four-year curricular plan in an engineering major.
Prereq or concur: Engr 1110.XX. Not open to students with credit for Engr 1110 (Engineer 100), FABEng 1100 (100), ENR 1100 (100), and USAS 1100 (100).

120.06 Introduction to Ohio State and Computer Science and Engineering II
Assessment of major / academic interests, advanced study skills, campus activities, program enrichment opportunities, engineering services, internships, and development of a personalized four-year curricular plan in an engineering major.
Prereq or concur: Engr 1110.XX. Not open to students with credit for Engr 1110 (Engineer 100), FABEng 1100 (100), ENR 1100 (100), and USAS 1100 (100).

120.07 Introduction to Ohio State and Electrical and Computer Engineering II
Assessment of major / academic interests, advanced study skills, campus activities, program enrichment opportunities, engineering services, internships, and development of a personalized four-year curricular plan in an engineering major.
Prereq or concur: Engr 1110.XX. Not open to students with credit for Engr 1110 (Engineer 100), FABEng 1100 (100), ENR 1100 (100), and USAS 1100 (100).

120.08 Introduction to Ohio State and Engineering Physics II
Assessment of major / academic interests, advanced study skills, campus activities, program enrichment opportunities, engineering services, internships, and development of a personalized four-year curricular plan in an engineering major.
Prereq or concur: Engr 1110.XX. Not open to students with credit for Engr 1110 (Engineer 100), FABEng 1100 (100), ENR 1100 (100), and USAS 1100 (100).

120.09 Introduction to Ohio State and Environmental Engineering II
Assessment of major / academic interests, advanced study skills, campus activities, program enrichment opportunities, engineering services, internships, and development of a personalized four-year curricular plan in an engineering major.
Prereq or concur: Engr 1110.XX. Not open to students with credit for Engr 1110 (Engineer 100), FABEng 1100 (100), ENR 1100 (100), and USAS 1100 (100).

120.10 Introduction to Ohio State and Food, Agricultural, and Biological Engineering II
Assessment of major / academic interests, advanced study skills, campus activities, program enrichment opportunities, engineering services, internships, and development of a personalized four-year curricular plan in FABE.
Prereq or concur: 1110.xx. Not open to students with credit for Engr 1110 (Engineer 100), FAES 1100 (100), ENR 1100 (100), or EXP 1100 (USAS 100).

120.11 Introduction to Ohio State and Industrial and Systems Engineering II
Assessment of major / academic interests, advanced study skills, campus activities, program enrichment opportunities, engineering services, internships, and development of a personalized four-year curricular plan in an engineering major.
Prereq or concur: Engr 1110.XX. Not open to students with credit for Engr 1110 (Engineer 100), FABEng 1100 (100), ENR 1100 (100), and USAS 1100 (100).

120.12 Introduction to Ohio State and Materials Science and Engineering II
Assessment of major / academic interests, advanced study skills, campus activities, program enrichment opportunities, engineering services, internships, and development of a personalized four-year curricular plan in an engineering major.
Prereq or concur: Engr 1110.XX. Not open to students with credit for Engr 1110 (Engineer 100), FABEng 1100 (100), ENR 1100 (100), and USAS 1100 (100).
Introduction to Ohio State and Mechanical Engineering U %
Assessment of major / academic interests, advanced study skills, campus activities, program enrichment opportunities, engineering services, internships, and development of a personalized four-year curricular plan in an engineering major.
Prereq or conc: Engr 1110.XX. Not open to students with credit for Engr 1100 (Engineer 100), FABEng 1100 (100), ENR 1100 (100), and USAS 1100 (100).

Introduction to Ohio State and Welding Engineering II U %
Assessment of major / academic interests, advanced study skills, campus activities, program enrichment opportunities, engineering services, internships, and development of a personalized four-year curricular plan in an engineering major.
Prereq or conc: Engr 1110.XX. Not open to students with credit for Engr 1100 (Engineer 100), FABEng 1100 (100), ENR 1100 (100), and USAS 1100 (100).

1121 Graphic Presentation U 2
Presentation of three-dimensional subjects by precise graphics: orthographic, sectional, pictorial, and introduction to computer graphics.
Prereq: Not open to students with credit for EnGraph 121.

1138 Fundamentals of Mathematics for Engineers U 4
This application-oriented, hands-on, introduction to engineering mathematics course will provide an overview of the salient math topics most heavily used in beginning engineering courses. All math topics will be presented within the context of an engineering application, and reinforced through extensive examples of their use in the core engineering courses.
Prereq: Math Placement Level N. Not open to students with credit for Math 1151. Cross-listed in Math.

1180 Spatial Visualization Practice and Development U 1
Provide instruction and exercises to develop spatial visualization skills in preparation for Fundamentals of Engineering and advanced coursework.

1181.01 Fundamentals of Engineering I U 2
Engineering problem solving utilizing computational tools such as Excel and Matlab; hands-on experimentation; modeling; ethics; teamwork; written, oral and visual communications.
Prereq or conc: Math 1140 or 1141; or Math 1150 or above. Not open to students with credit for Engineer 183.01, 183.02, Engr 1182.01, 1182.02, 1182.03, 1182.04, 1184.01, 1187, or 1188.

1181.02 Fundamentals of Engineering I - Scholars U 2
Engineering problem solving utilizing computational tools such as Excel and Matlab; hands-on experimentation; modeling; ethics; teamwork; written, oral and visual communications.
Prereq or conc: Math 1140 or 1141; or Math 1150 or above; and Scholar status. Not open to students with credit for Engineer 183.01, 183.02, Engr 1182.01, 1182.02, 1182.03, 1186.01, 1187, or 1188.

1182.01 Fundamentals of Engineering II U 2
Introduction to 3D visualization and CAD; engineering design-build process; teamwork; written, oral and visual communications; project management.
Prereq: 1181.01 or 1181.02 or 1281.01H or 1281.02H or 1281.03H. Prereq or Conc: Math 1141; or Math 1151 or above. Not open to students with credit for Engineer 181.01 or 181.02 or Engr 1186 or 1187 or 1188; not repeatable if credit earned for 1182.02 or 1182.03 or 1282.01H or 1282.03H or 1282.04H.

1182.02 Fundamentals of Engineering II - Scholars U 2
Introduction to 3D visualization and CAD; engineering design-build process; teamwork; written, oral and visual communications; project management.
Prereq: 1181.01 or 1181.02 or 1281.01H or 1281.02H or 1281.03H, and Scholars status. Prereq or conc: Math 1151 or above. Not open to students with credit for Engineer 181.01 or 181.02 or Engr 1186 or 1187 or 1188; not repeatable if credit earned for 1182.02 or 1182.03 or 1282.01H or 1282.03H or 1282.04H.

1182.03 Fundamentals of Engineering II - Nanotechnology U 2
Introduction to 3D visualization and CAD; engineering design-build process; teamwork; written, oral and visual communications; project management.
Prereq: 1181.01 or 1181.02 or 1281.01H or 1281.02H or 1281.03H. Concur: Math 1141; or Math 1151 or above. Not open to students with credit for Engineer 181.01 or 181.02 or Engr 1186 or 1187 or 1188; not repeatable if credit earned for 1182.01 or 1182.02 or 1282.01H or 1282.03H or 1282.04H.

1184.04 Fundamentals of Engineering 2 - Engineering Technology U 2
Introduction to 3D visualization and CAD; engineering design-build process; teamwork; written, oral and visual communications; project management. Regional campuses and Engineering Technology majors who are not currently enrolled in Engr/04 2550 Manufacturing Processes II.

1186.01 Fundamentals of Engineering for Transfer - CAD U 1½
Introduction to 3D visualization and CAD; written, oral and visual communications.
Prereq: Not open to students with credit for Engineer 186.

1187 Fundamentals of Engineering for Transfer - MATLAB U 1
Engineering problem solving utilizing computational tools such as Matlab.
Prereq or conc: Math 1150 or above. Not open to students with credit for Engr 1221 or Engineer 187.

1188 Fundamentals of Engineering for Transfer - Problem Solving and Design U 1½
Introduction engineering problem solving and design through a hands-on design build project; teamwork; written, oral and visual communications; project management.
Prereq: Engr 1186 and 1187, or 1187 and 1121. Concur: Math 1151 or above, or equiv. Not open to students with credit for Engineer 185.

1194 Group Studies in Engineering U 1 - 4
Special topics of general interest to engineering students.
Prereq: Permission of instructor. Repeatable to a maximum of 8 or 4 completions. This course is graded S/U.

1194H Group Studies in Engineering - Honors U 1 - 4
Special topics of general interest to engineering honors students.
Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 8 or 4 completions. This course is graded S/U.

1195 Women in Engineering Seminar U 1
Guest speakers share their knowledge and experience about the career options available in engineering; class discussions; activities for building professional awareness.
Prereq: First-year Women in Engineering learning community students (Autumn semester only), Repeatable to a maximum of 5 cr hrs. This course is graded S/U.

1195.02 Women in Engineering Second Year Seminar Course U ½
This Seminar Course will provide 2nd year students in the Women in Engineering Learning Community (WC) with information and content relative to second year engineering students in terms of professional development, undergraduate engineering research opportunities, faculty and professional engineering interactions.
Prereq: Soph or Jr standing, and enrollment in the College of Engineering. This course is graded S/U.

1196 Minority Engineering Program Seminar U 1
Course is designed to assist beginning engineering students in making a smooth and informed transition from high school to college. The goal is to aid each student in making a positive adjustment to his/her new environment while exploring and planning career opportunities in the broad field of engineering along with enhancing their personal growth and development.
Repeatable to a maximum of 5 cr hrs. This course is graded S/U.

1197.01 Green Engineering Scholars Seminar U 1
Scholars Program academic and co-curricular requirements and expectations; University procedures relative to the Scholars experience; resources and opportunities related to Scholars program theme; students rights, responsibilities, and expectations; overview of relevant major and careers.
Prereq: Enrollment in Green Engineering Scholars Program, or permission of instructor.
Repeatable to a maximum of 2 ch hrs.

1197.02 Humanitarian Engineering Scholars Seminar U 1
Scholars Program academic and co-curricular requirements and expectations; University procedures relative to the Scholars experience; resources and opportunities related to Scholars program theme; students rights, responsibilities, and expectations; overview of relevant major and careers.
Prereq: Enrollment in Humanitarian Engineering Scholars Program, or permission of instructor.
Repeatable to a maximum of 2 ch hrs.

1221 Introduction to Computer Programming in MATLAB for Engineers and Scientists U 2
Introduction to computer programming and problem solving techniques with MATLAB applications in engineering and the physical sciences; algorithm development; programming lab experience.
Prereq: Engr 1181.01 or 1181.02 or 1187 or 1281.01H or 1281.02H or 1281.03H. Not open to students with credit for Engineer 167 or CSE 205. This course is available for EM credit. Cross-listed in CSE.

1259 Fundamentals of Academic Success for Engineering Students U 3
Teaches time management and study skills to promote academic success. Students learn study skills and practice time management in relation to their engineering coursework.
Prereq: Enrollment in the College of Engineering.

1281.01H Fundamentals of Engineering for Honors I U 5
Engineering problem solving utilizing computational tools such as Excel and MATLAB; algorithm development; introduction to C++ programming for engineering; hands-on experimentation; modeling; ethics; teamwork; written, oral and visual communications.
Prereq: Honors standing, and enrollment in the College of Engineering; or permission of instructor. Prereq or conc: Math 1151, 1161.02, or 1181H. Not open to students with credit for 1181.01, 1181.02, Engineer 191.01H, 191.02H, or CSE/Engr 1222.

1281.02H Fundamentals of Engineering for Honors I - Advanced Programming U 5
Engineering problem solving utilizing computational tools such as Excel and MATLAB; algorithm development; introduction to C++ programming for engineering; hands-on experimentation; modeling; ethics; teamwork; written, oral and visual communications. This variant of the course is intended for students who are advanced in computer programming skills.
Prereq: Honors standing, and enrollment in the College of Engineering; or permission of instructor. Prereq or conc: Math 1151, or 1181H. Not open to students with credit for 1181.01, 1181.02, Engineer 191.01H, 191.02H, or CSE/Engr 1222.
Fundamentals of Engineering for Honors II - Robotics
Introduction to 3D visualization and CAD; engineering design-build process; teamwork; written, oral and visual communications; project management. Standard course incorporating a robot design-build project.
Preprq: Honors standing, and 1281.01H or 1281.02H or 1281.03H, and enrollment in the College of Engineering; or permission of instructor. Not open to students with credit for 1182.01, 1182.02, 1182.03, Engineer 193.01H, or 193.02H.

Fundamentals of Engineering for Honors II - Nanotechnology
Introduction to 3D visualization and CAD; engineering design process; teamwork; written, oral and visual communications; project management. Alternative course with an emphasis on a nanotechnology research and development project.
Preprq: Honors standing, and 1281.01H or 1281.02H or 1281.03H, or permission of instructor, and enrollment in the College of Engineering; or permission of instructor. Not open to students with credit for 1182.01, 1182.02, 1182.03, Engineer 193.01H, or 193.02H.

Fundamentals of Engineering for Honors 2 - Integrated Business & Engineering
Introduction to 3D visualization and CAD; engineering design process; teamwork; written, oral and visual communications; project management. An alternative to the standard 1282.01H course with an emphasis on a product design project within the Integrated Business and Engineering (IBE) Honors program.
Preprq: Honors standing, and 1281.01H or 1281.02H or 1281.03H or permission of instructor, and enrollment in the Integrated Business and Engineering (IBE) program. Not open to students with credit for 1182.01 or 1182.02 or 1182.03.

1510 Metacognitive Engineering Problem Solving Strategies
The course teaches students the concept of metacognition and informs its application to problem solving in engineering courses. Student engage in guided problem solving practice that hones their thinking and helps them make informed decisions about mastering engineering course concepts.
Concur: Math 1151, and permission of instructor. Repeatable to a maximum of 4 cr hrs. This course is graded S/U.

Individual Studies in Engineering
Special topics of general interest to engineering students not otherwise offered.
Preprq: Permission of instructor. Repeatable to a maximum of 8 cr hrs or 4 completions. This course is graded S/U.

Groups Studies in Engineering
Special topics of general interest to engineering students.
Preprq: Permission of instructor. Repeatable to a maximum of 8 cr hrs or 4 completions.

Groups Studies in Engineering
Special topics of general interest to engineering honors students not otherwise offered.
Preprq: Honors standing, and permission of instructor. Repeatable to a maximum of 8 cr hrs or 4 completions.

American Attitudes About Technology
Discussion, analysis, and intensive writing in a technical and professional context based on study of American attitudes about technology.
Preprq: English 1110 (110), and Soph standing or above. Not open to students with credit for Engineer 367. GE writing and comm: level 2 and diversity soc div in the US course.

Honors American Attitudes About Technology
Discussion, analysis, and intensive writing in a technical and professional context based on study of American attitudes about technology.
Preprq: Honors standing; and English 1110.01 or 1110.02H or 1110.03H; and Soph standing or above. Not open to students with credit for Engr 2367 (367). GE writing and comm: level 2 and diversity soc div in the US course.

Engineering Study Abroad in North America
Study abroad in North America. Repeatable to a maximum of 30 cr hrs or 4 completions.

Engineering Study Abroad in Central America
Study abroad in Central America. Repeatable to a maximum of 30 cr hrs or 4 completions.

Engineering Study Abroad in South America
Study abroad in South America. Repeatable to a maximum of 30 cr hrs or 4 completions.

Engineering Study Abroad in East Asia
Study abroad in East Asia. Repeatable to a maximum of 30 cr hrs or 4 completions.

Engineering Study Abroad in South Asia
Study abroad in South Asia. Repeatable to a maximum of 30 cr hrs or 4 completions.

Engineering Study Abroad in Central Asia
Study abroad in Central Asia. Repeatable to a maximum of 30 cr hrs or 4 completions.

Engineering Study Abroad Across Oceans
Study abroad in Oceania. Repeatable to a maximum of 30 cr hrs or 4 completions.

Engineering Study Abroad in Middle East
Study abroad in Middle East. Repeatable to a maximum of 30 cr hrs or 4 completions.

Engineering Study Abroad in Africa
Study abroad in Africa. Repeatable to a maximum of 30 cr hrs or 4 completions.

Engineering Study Abroad in Europe
Study abroad in Europe. Repeatable to a maximum of 30 cr hrs or 4 completions.

Engineering Study Abroad in Central Asia
Repeatable to a maximum of 9 cr hrs.

Group Studies in Engineering
Special topics of general interest to engineering students not otherwise offered.
Preprq: Permission of instructor. Repeatable to a maximum of 8 cr hrs or 4 completions. This course is graded S/U.

Professional Practice in Engineering
Students complete a cooperative or internship assignment in private industry or for a government agency; assignments are supervised by the employer and monitored and evaluated by Co-op and Internship Program.
Preprq: Permission of instructor. Repeatable to a maximum of 8 completions. This course is graded S/U.

Individual Studies in Engineering
Special topics of general interest to engineering students not otherwise offered.
Preprq: Permission of instructor. Repeatable to a maximum of 8 cr hrs or 4 completions. This course is graded S/U.

Groups Studies in Engineering
Special topics of general interest to engineering students not otherwise offered.
Preprq: Permission of instructor. Repeatable to a maximum of 8 cr hrs or 4 completions.

Groups Studies in Engineering
Special topics of general interest to engineering honors students not otherwise offered.
Preprq: Honors standing, and permission of instructor. Repeatable to a maximum of 8 cr hrs or 4 completions.

Computer Graphics Using AutoCad
An advanced course in graphics with emphasis on the application on computer generated graphics to the solution of engineering problems. AutoCad and Civil 3D to be used.
Preprq: Engr 1182, 1185, or 1282. Not open to students with credit for EnGraph 410.

Computer Graphics Using SolidWorks
An advanced course in graphics with emphasis on the application on computer generated graphics to the solution of engineering problems. SolidWorks to be used.
Preprq: Engr 1121 or 1162 or 1185 or 1282. Not open to students with credit for EnGraph 410.

Service Learning in Engineering
Students translate a prior engineering research experience through developing and delivering and documenting mini-design challenges for an underserved K-8 school partner.
Preprq: 1182, 1186, or 1282; and permission of instructor.

Translating Engineering Research to K-8 (TEK8)
Students translate a prior engineering research experience through developing and delivering and documenting mini-design challenges for an underserved K-8 school partner.
Preprq: 1182, 1186, or 1282; and permission of instructor.

Colloquia, Workshops, and College Seminars
Special colloquias, workshops or seminars of general interest to engineering students.
Repeatable to a maximum of 4 cr hrs or 4 completions. This course is graded S/U.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Description</th>
<th>Prerequisites</th>
<th>Repeatable Maximum Credits</th>
<th>Graded S/U</th>
</tr>
</thead>
<tbody>
<tr>
<td>5797.01</td>
<td>College Seminar - Perspectives on Sustainability</td>
<td>U 1</td>
<td>A broad view of sustainability and the environment, with the opportunity to see sustainability through different perspectives. Speakers from different areas of expertise will present on a variety of sustainability topics so students can better understand why sustainability is both important and complex. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.</td>
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<tr>
<td>5797.02</td>
<td>College Seminar - Promoting Creativity and Innovation</td>
<td>U 2</td>
<td>Tools to refine creative motivation and to encourage multidisciplinary innovation. Fostering an appreciation for the processes of innovative design and prototyping by enabling students to explore the concept of creativity through a variety of speaker experiences. Repeatable to a maximum of 4 cr hrs.</td>
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<tr>
<td>4910</td>
<td>Tools for Engineering Career Success</td>
<td>U 1</td>
<td>Designed to prepare students for an effective internship/co-op and job search. Covers a range of topics including: self-assessment, goal setting, time management, communication and correspondence, resumes, and interviewing. Course will also feature experienced guest speakers from industry. Must be registered with Engineering Career Services. Prereq: Enrollment in the College of Engineering. This course is graded S/U.</td>
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<tr>
<td>4998.01</td>
<td>Undergraduate Research in Engineering Education</td>
<td>U 1 - 4</td>
<td>Opportunity for undergraduates to conduct research in engineering education. Prereq: Permission of Instructor. Repeatable to a maximum of 10 cr hrs or 4 completions. This course is graded S/U.</td>
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<tr>
<td>4998.02</td>
<td>Undergraduate Research in Engineering</td>
<td>U 1 - 4</td>
<td>Opportunity for undergraduates to conduct research in engineering. Prereq: Permission of Instructor. Repeatable to a maximum of 10 cr hrs or 4 completions. This course is graded S/U.</td>
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<tr>
<td>4999H</td>
<td>Engineering Education Research for Thesis</td>
<td>U 1 - 5</td>
<td>Honors program students are offered the opportunity to pursue independent project/research. Student presentation and thesis writing included. Prereq: Honors standing, and Sr standing, and CPHR 3.4 or above; or permission of instructor. Repeatable to a maximum of 5 cr hrs or 5 completions. This course is graded S/U.</td>
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<tr>
<td>5081.01</td>
<td>Engineering Capstone Collaboration I</td>
<td>U G 3</td>
<td>Students contract to collaborate with an engineering capstone design team for two semesters and contribute their disciplinary expertise. Prereq: Permission of Instructor. Not open to Engineering Majors.</td>
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<tr>
<td>5081.02</td>
<td>Engineering Capstone Collaboration II</td>
<td>U G 3</td>
<td>Students contract to collaborate with an engineering capstone design team for second semester and contribute their disciplinary expertise. Prereq: Permission of Instructor. Not open to Engineering Majors.</td>
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<tr>
<td>5194</td>
<td>Group Studies in Engineering</td>
<td>U G 1 - 4</td>
<td>Special topics of general interest to engineering students not otherwise offered. Repeatable to a maximum of 8 cr hrs or 4 completions. This course is graded S/U.</td>
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<tr>
<td>5695</td>
<td>Engineering Teamwork Seminar</td>
<td>U G 1</td>
<td>Interactive training seminar that teaches communications and interpersonal skills vital to success as an engineer in industry. Sponsored by Tau Beta Pi National Engineering Honor Society. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.</td>
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<tr>
<td>5710</td>
<td>Engineering Research Communications</td>
<td>U G 3</td>
<td>Engineering technical communications for academic writing and professional presentations, including authoring refereed journal articles and authoring and presenting conference papers in engineering disciplines. Prereq: Sr or Grad standing.</td>
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<tr>
<td>5797.01</td>
<td>Engineering Study Abroad in North America</td>
<td>U G ½ - 12</td>
<td>Study abroad in North America. Repeatable to a maximum of 30 cr hrs or 4 completions. This course is graded S/U.</td>
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<tr>
<td>5797.02</td>
<td>Engineering Study Abroad in Central America</td>
<td>U G ½ - 12</td>
<td>Study abroad in Central America. Repeatable to a maximum of 30 cr hrs or 4 completions. This course is graded S/U.</td>
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<tr>
<td>5797.03</td>
<td>Engineering Study Abroad in South America</td>
<td>U G ½ - 12</td>
<td>Study abroad in South America. Repeatable to a maximum of 30 cr hrs or 4 completions. This course is graded S/U.</td>
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<tr>
<td>5797.04</td>
<td>Engineering Study Abroad in East Asia</td>
<td>U G ½ - 12</td>
<td>Study abroad in East Asia. Repeatable to a maximum of 30 cr hrs or 4 completions. This course is graded S/U.</td>
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<tr>
<td>5797.05</td>
<td>Engineering Study Abroad in South Asia</td>
<td>U G ½ - 12</td>
<td>Study abroad in South Asia. Repeatable to a maximum of 30 cr hrs or 4 completions. This course is graded S/U.</td>
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<tr>
<td>5797.06</td>
<td>Engineering Study Abroad in Central Asia</td>
<td>U G ½ - 12</td>
<td>Study abroad in Central Asia. Repeatable to a maximum of 30 cr hrs or 4 completions. This course is graded S/U.</td>
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<tr>
<td>5797.07</td>
<td>Engineering Study Abroad in Oceania</td>
<td>U G ½ - 12</td>
<td>Study abroad in Oceania. Repeatable to a maximum of 30 cr hrs or 4 completions. This course is graded S/U.</td>
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<tr>
<td>5797.08</td>
<td>Engineering Study Abroad in Middle East</td>
<td>U G ½ - 12</td>
<td>Study abroad in the Middle East. Repeatable to a maximum of 30 cr hrs or 4 completions. This course is graded S/U.</td>
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<tr>
<td>5797.09</td>
<td>Engineering Study Abroad in Africa</td>
<td>U G ½ - 12</td>
<td>Study abroad in Africa. Repeatable to a maximum of 30 cr hrs or 4 completions. This course is graded S/U.</td>
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<tr>
<td>5797.10</td>
<td>Engineering Study Abroad in Europe</td>
<td>U G ½ - 12</td>
<td>Study abroad in Europe. Repeatable to a maximum of 30 cr hrs or 4 completions. This course is graded S/U.</td>
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<tr>
<td>5797.11S</td>
<td>Engineering Service-Learning in Honduras</td>
<td>U G 3</td>
<td>During the Engineering Service-Learning in Honduras program, students will travel to Honduras and implement, test, and evaluate the technologies they developed through Spring Semester. In addition, the students will complete technical documentation and present their projects in a conference-style format once they have returned from spring break travel. Prereq: Jr, Sr, or Grad standing, or permission of instructor.</td>
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<tr>
<td>5797.12</td>
<td>Exploring Culture and Engineering in India</td>
<td>U G 3</td>
<td>Students will travel to Jaipur, Agra, and Delhi, India to focus on the culture, history, and religion of India. Students will implement a design project they created in spring semester. Prereq: 4692.01S in Sp Sem.</td>
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<tr>
<td>5797.13</td>
<td>Engineering the Castles and Cathedrals of England and Wales</td>
<td>U G 3</td>
<td>A study abroad trip to England and Wales for the purpose of understanding the importance of several iconic castles and cathedrals and the various methods used for their construction. Participants must be physical fit enough to walk an extended length of time, negotiate rough terrain, climb steep steps, and not be afraid of heights. GE historical study and diversify global studies course.</td>
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<td>5797.14</td>
<td>OSU - Colombia Collaboration</td>
<td>U G 3</td>
<td>This study abroad course is to focus on development of education in Colombia at the K-12 level via STEM education for students and collaborations with teachers to develop materials for students; and at the university level by collaboratively developing low-cost engineering experiments for laboratories, along with on-line instructional materials. Prereq: S500 or permission of instructor. Repeatable to a maximum of 15 cr hrs.</td>
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<td>5797.15</td>
<td>Korea Aerospace University International Summer Program</td>
<td>U G 3</td>
<td>This course allows students to enroll in the Korea Aerospace University's International Summer Program and earn credits towards a degree in Aviation. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.</td>
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<tr>
<td>5797.16S</td>
<td>Solar Engineering Service-Learning</td>
<td>U G 3</td>
<td>During the Solar Engineering Service-Learning program, students will travel abroad and collaborate with partner organizations and communities, to evaluate, assess, design, pilot, and implement various solar technologies. Must be admitted to the program through the Office of International Affairs before enrolling. Students will enroll in ENGR 4692.XXS (1 credit hour) for second session spring term. Repeatable to a maximum of 9 cr hrs.</td>
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<tr>
<td>5797.17S</td>
<td>Engineering Service-Learning Ghana In Country</td>
<td>U G 4</td>
<td>The Engineering Service-Learning in Ghana course takes place during autumn semester in preparation for winter break travel; Travel and service will be conducted during the break between autumn and spring semesters. Prereq: Enrollment in the College of Engineering, or permission of instructor. Repeatable to a maximum of 12 cr hrs.</td>
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<tr>
<td>5797.18</td>
<td>Engineering of Ancient Greece</td>
<td>U G 3</td>
<td>A study abroad trip to Greece for the purpose of understanding the importance of the influences and contributing contributions to society of Ancient Greece's Engineering and Technological advancements. Students will visit various significant engineering marvels and examine the tools used for their formulation and construction. GE cultures and ideas course.</td>
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<td>5797.19</td>
<td>Design Principles and Biomedical Research at Nanjing University</td>
<td>U G 3</td>
<td>Internationalized medical device design course. Introduction to design principles; needs finding, idea generation, and presentation of projects that focus on helping persons with medical based problems. Documentation and technical skills are developed throughout the course. Activities in team-building, cultural awareness and global engineering are emphasized throughout the course. Prereq: Math 2177, or 2174, or 2255 and 2568, or 2415 and 2568, or for CSE students 2568; Jr or Sr standing in the College of Engineering; and permission of instructor. Repeatable to a maximum of 6 cr hrs.</td>
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</table>
Sustainable and Resilient Infrastructure in Italy

5797.20 Sustainable and Resilient Infrastructure in Italy U G 3
During pre-travel lectures and assignments and a two-week in-country trip, eligible students will compare and contrast differences between Italy and US built infrastructure, explore historical and cultural reasons for differences between the countries, and envision more sustainable and resilient built infrastructure. Application to the College of Engineering Study Abroad Program required.
Prereq: EnvEng 3200 or CivilEn 3310.

5797.21S Sustainable and Resilient Tanzanian Communities - Engineering
Sustainable and Resilient Communities focuses on applied, service-learning projects around Kilimanjaro, Tanzania. Students will contribute to the sustainability of partnered community's long-term food, water, energy, and health systems. In addition to participating in service in a global context, students will explore the complex challenges and opportunities of sustainable development in rural TZN.
Prereq: CivilEn 4000.01, Concur: CivilEn 4000.02, or permission of instructor. Repeatable to a maximum of 4 or hrs or 2 completions.

5797.22S Guatemala Service-Learning
Participating students will: (i) learn about poverty challenges, needs, and potential technical solutions, (ii) complete technical design/evaluation challenges, (iii) learn about Guatemalan history, culture, and current events, and (iv) learn about trip logistics/rules, (v) travel to Guatemala and support group objectives. Repeatable to a maximum of 6 or hrs.

5797.23 Humanitarian Engineering and Culture in Guyana U G 3
This course offers an opportunity to be engaged in a humanitarian engineering project trip to Georgetown, Guyana to work on solar education projects. Students who are a part of this course will learn about Guinean history, culture, and current events; energy challenges, needs, and clean energy solutions; solar panel systems; complete technical design/evaluation challenges; and travel to Guyana.
Prereq: Jr, Sr, or Grad standing in Engr, and permission of instructor.

5797.24 Sustainable Community Development - Honduras U G 3
The course seeks to provide an opportunity for students to experience application of a broad range of engineering & non-engineering skillsets in a team-based environment working towards sustainable outcomes to humanitarian development challenges. Student teams from OSU & Zamorano University will work collaboratively with nonprofit Heart to Honduras to develop & support community-driven projects.
Prereq: Pre-major, major, or Grad standing in the College of Engineering, AgSysM, ConSysM, or Industrial Design; and Engr 5050 or FABEng 2220 or international study abroad experience; and permission of instructor.

5797.25 International Perspectives on Aviation U G 3
This course will explore the implications of the Aviation Industry on world as a whole. Content will be organized to consider the social, economic and environmental impacts of aviation in a global context. Classroom learning will be reinforced through international travel during the semester.
Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

5901.01 Multidisciplinary Engineering Capstone Design Project I U G 3
A multidisciplinary engineering capstone design experience which will utilize principles of multiple engineering disciplines for sponsored design projects. This course is full semester (14 week) course. Progress graded with Engr 5902.01.
Prereq: Sr or Grad standing, and permission of instructor. Not open to students with credit for 5901.01 or 5902.01. This course is progress graded.

5901.02H Multidisciplinary Engineering Capstone Design Project I - Honors IBE
This course is an honors version of ENGR 5901.01 and is required for the Integrated Business and Engineering (IBE) program. Students in multidisciplinary teams work on realistic and open-ended product development projects in conjunction with an industry sponsor. Teams practice modern development principles applying the concept of design thinking, user-focused design, and minimally viable product.
Prereq: Honors standing, and Sr standing in Engineering or Business, and enrollment in Integrated Business and Engineering (IBE) program; or permission of instructor.

5902.01 Multidisciplinary Engineering Capstone Design Project II U G 3
An integrated sequence constituting a multidisciplinary engineering capstone design experience which will utilize principles of multiple engineering disciplines for sponsored design projects. Sequenced with 5901.01.
Prereq: 5901.01, or permission of instructor. This course is progress graded.

5902.02H Multidisciplinary Engineering Capstone Design Project II - Honors IBE
This course is an honors version of ENGR 5902.01 and is required for the Integrated Business and Engineering (IBE) program. Students in multidisciplinary teams work on realistic and open-ended product development projects in conjunction with an industry sponsor. Teams practice modern development principles applying the concept of design thinking, user-focused design, and minimally viable product.
Prereq: 5901.02H, and Honors standing, and Sr standing in Engineering or Business, and enrollment in the Integrated Business and Engineering (IBE) program; or permission of instructor.

6193 Individual Studies in Engineering G 1 - 4
Opportunity for students to participate in supervised individual engineering experiences. Prereq: Permission of instructor. Repeatable to a maximum of 8 or hrs or 4 completions. This course is graded SU.

6194 Group Studies in Engineering G 1 - 4
Special topics of general interest to engineering students not otherwise offered.
Prereq: Permission of instructor. Repeatable to a maximum of 8 or hrs or 4 completions.

6210 Leadership and Team Effectiveness for Engineers G 3
Introduction to topics in leadership and team effectiveness with a focus on applications for engineers.
Prereq: Grad standing, and enrollment in MGEL degree program; or permission of instructor.

6220 Financial and Managerial Accounting for Engineers G 3
Provides an overview of the basic topics in financial and managerial accounting. The primary focus will be on helping engineering students understand the meaning of the numbers in financial statements, their relationship to one another, and learning how they are used in planning, decision-making and control towards achieving the objectives of an organization.
Prereq: Grad standing, or permission of instructor; and enrollment in MGEL degree program. Not open to students with credit for AcctMIS 5000.

6230 Technology Strategy & Innovation for Engineers G 3
How technology strategy may lead to creation/persistence of competitive advantage. In contrast to core strategy course, provides series of strategic frameworks for managing high-tech businesses.
Prereq: Grad standing, and enrollment in MGEL degree program; or permission of instructor.

6505S Translating Engineering Research to K-8 (TEK8) G 3
Guides graduate students through the development of design challenges inspired by prior research experiences. Develops the skills to teach engineering in under-resourced schools & recognize how to relay engineering skills to diverse populations. Design challenges are created to be age-appropriate for middle school, low cost, & facilitated by someone with little technical background in <90 minutes.

7100 MGEL Integrative Project G 1 - 5
Non-thesis research investigation; instructor-guided; comprehensive report required. Required course for MGEL program, in final or final two semesters of program. Total credits required: 5. Prereq: Enrollment in the Master Global Engineering Leadership program. Repeatable to a maximum of 5 or hrs or 2 completions.

7193 Individual Studies in Engineering G 1 - 4
Opportunity for students to participate in supervised individual engineering experiences. Prereq: Permission of instructor. Repeatable to a maximum of 8 or hrs or 4 completions. This course is graded SU.

7194 Group Studies in Engineering G 1 - 4
Special topics of general interest to engineering students.
Prereq: Permission of instructor. Repeatable to a maximum of 8 or hrs or 4 completions. This course is graded SU.

7200 Engineering Ethics and Professionalism G 1
To learn professionalism and ethical decision-making strategies; topics include codes of ethics, moral frameworks, engineering as social experimentation, assessment of safety and risk, employer and employee rights and responsibilities, confidentiality and conflict of interest, whistle-blowing, research integrity, consulting engineers, expert witnesses. Engineering ethics case studies in detail

7240 Education Research Methods in Engineering G 3
Designing engineering educational research projects including authoring proposals for funding agencies.
Prereq: Grad standing.

7710 Engineering Research Communications G 3
Students will practice skills related to scholarly and industry communications for engineering. Topics include reading and analyzing scholarly articles; organizing and writing abstracts and research papers; strategies for problem definition; citation conventions, preparing papers for publication, developing and delivering effective presentations appropriate to scholarly and industry audiences.
Prereq: Grad standing in Engineering. Repeatable to a maximum of 6 or hrs.

7881 Interdepartmental Seminar G 1 - 4
Seminars of general interest to engineering students.
Prereq: Permission of instructor. Repeatable to a maximum of 8 or hrs or 4 completions.

7891 Colloquia, Workshops, and Seminars G 1 - 4
Special colloquia, workshops or seminars of general interest to engineering students.
Prereq: Permission of instructor. Repeatable to a maximum of 8 or hrs or 4 completions.

8194 Group Studies in Engineering G 1 - 4
Special topics of general interest to engineering students.
Prereq: Permission of instructor. Repeatable to a maximum of 8 or hrs or 4 completions.
<table>
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<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit Hours</th>
<th>Prerequisites</th>
<th>Repeatable/Completable Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>8998</td>
<td>Research in Engineering Education</td>
<td>1 - 10</td>
<td>Opportunity to conduct research in engineering.</td>
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<tr>
<td></td>
<td>Permitted by instructor. Repeatable to a maximum of 15 cr hrs or 15 completions.</td>
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<td>This course is graded S/U.</td>
</tr>
<tr>
<td>8999</td>
<td>Research in Engineering Education for Dissertation</td>
<td>1 - 10</td>
<td>Opportunity to conduct dissertation research in engineering.</td>
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<tr>
<td></td>
<td>Permitted by instructor. Repeatable to a maximum of 15 cr hrs or 15 completions.</td>
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<td>This course is graded S/U.</td>
</tr>
<tr>
<td>4999</td>
<td>Undergraduate Thesis Research in Engineering Education</td>
<td>U 1 - 5</td>
<td>Undergraduate thesis research on topics in Engineering Education.</td>
<td>For students pursuing Research Distiction. Prereq: CPHR 3.0 or above, Sr standing in the College of Engineering, and permission of instructor. Repeatable to a maximum of 5 cr hrs or 5 completions.</td>
</tr>
<tr>
<td>4999H</td>
<td>Undergraduate Honors Thesis Research in Engineering Education</td>
<td>U 1 - 5</td>
<td>Undergraduate Honors Thesis research on topics of Engineering Education.</td>
<td>For student pursuing Honors Research Distiction. Prereq: Honors standing, CPHR 3.0 or above, Sr standing in the College of Engineering, and permission of instructor. Repeatable to a maximum of 5 cr hrs.</td>
</tr>
<tr>
<td>6100</td>
<td>Foundations and the Field of Engineering Education</td>
<td>G 3</td>
<td>This course is designed to prepare students for future courses, and careers in engineering education. Students will engage with literature focusing on theories and frameworks which highlight fundamental issues, questions, and approaches in engineering education. Prereq: Enrollment in EngrEdU Grad program, or permission of instructor. Repeatable to a maximum of 6 cr hrs.</td>
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<tr>
<td>6200</td>
<td>Learning Theory, Pedagogy, and Assessment in Engineering Education</td>
<td>G 3</td>
<td>This course is designed to provide foundational understandings of educational learning theory, pedagogy and assessment methods within engineering education. The processes learned will inform research and instructional practice decisions, approaches and analysis. Prereq: Enrollment in EngrEdU Grad program, or permission of instructor. Repeatable to a maximum of 6 cr hrs.</td>
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<tr>
<td>7189.01</td>
<td>Teaching Preparation and Support</td>
<td>G 2</td>
<td>This course supplements teaching content based training by exposing teachers to instructional pedagogies. It is a practical introduction to engineering education for instructors. Topics include using assessment for learning, best practices in instructional methods, techniques for self-reflection, etc. This version of the course is designed for new instructors. Prereq: Grad standing in the College of Engineering.</td>
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<tr>
<td>7189.02</td>
<td>Professional Development in College Teaching</td>
<td>G 1</td>
<td>This course supplements teaching content based training by exposing teachers to instructional pedagogies. It is a practical extension of ENGREDu 7189.01. Topics include developing new teaching modules, creating training materials for fellow instructors, furthering techniques for reflection, etc. This version of the course is designed for experienced instructors. Prereq: Grad standing in the College of Engineering.</td>
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<tr>
<td>7193</td>
<td>Individual Studies in Engineering Education</td>
<td>G 1 - 4</td>
<td>Individual Studies in Engineering Education for graduate students. Prereq: Grad standing in the College of Engineering, and permission of instructor. Repeatable to a maximum of 16 cr hrs or 16 completions.</td>
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<tr>
<td>7780</td>
<td>Research Design in Engineering Education</td>
<td>G 3</td>
<td>This course is designed to prepare students for productive research in engineering education throughout their graduate experience and professional careers. Research methods are highlighted and explored including quantitative, qualitative, and mixed methods. Prereq: Grad standing in the College of Engineering.</td>
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<tr>
<td>7881</td>
<td>Seminar in Engineering Education</td>
<td>G 1</td>
<td>This course is designed to provide students with the ability to maintain contemporary knowledge of the field of engineering education, understand how to communicate within the field, provide exposure to different stakeholders, and build community among engineering educators. Prereq: Grad standing in the College of Engineering. Repeatable to a maximum of 4 cr hrs.</td>
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<tr>
<td>7900</td>
<td>Career Exploration and Professional Development</td>
<td>G 3</td>
<td>This course is designed to prepare students for future careers and professional advancement at universities, colleges, community colleges, and technical colleges (both in tenure-track and clinical faculty appointments), government agencies, private industry, corporate training organizations, non-profits, and high schools challenged with incorporating engineering design into core science standards. Repeatable to a maximum of 6 cr hrs.</td>
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<tr>
<td>8998</td>
<td>Research in Engineering Education</td>
<td>G 1 - 5</td>
<td>This course offers graduate students an opportunity to conduct research in engineering education. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 15 completions.</td>
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</table>

### Engineering Technology

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit Hours</th>
<th>Prerequisites</th>
<th>Repeatable/Completable Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1201.01T</td>
<td>Exploring Engineering Technologies</td>
<td>U ½</td>
<td>Promotes student success in college and preparation for a career; explores personal and career interests, needs, goals, and the support services available for student success.</td>
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<tr>
<td>1201.02T</td>
<td>Exploring Construction Careers and Industry</td>
<td>U ½</td>
<td>Promotes student success in college and preparation for a career; explores personal and career interests, needs, goals, and the support services available for student success.</td>
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<tr>
<td>1201.03T</td>
<td>Exploring Agricultural Systems Management</td>
<td>U ½</td>
<td>Promotes student success in college and preparation for a career; explores personal and career interests, needs, goals, and the support services available for student success.</td>
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<tr>
<td>2011T</td>
<td>Small Engine Basics</td>
<td>U 4</td>
<td>A study of the theory of operation, service and maintenance and repair of small off-road gasoline and diesel engines. Prereq: Not open to students with credit for 240T and 247T. This course is available for EM credit.</td>
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<tr>
<td>2015T</td>
<td>Agricultural Equipment Operation and Maintenance</td>
<td>U 2</td>
<td>A study of tractors and other agricultural equipment with emphasis on operation, maintenance and adjustment for safe, efficient operation. Prereq: Not open to students with credit for 215.01T or 215.02T. This course is available for EM credit.</td>
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<tr>
<td>2016T</td>
<td>Tillage, Planting, Harvesting, and Storage Equipment</td>
<td>U 3</td>
<td>Principles and applications of safely operating, adjusting, and maintaining agricultural equipment and storing crops. Recommended prereq: Completion of tractor/mobile equipment safety certification process. Prereq: Not open to students with credit for 216T, 217T, and 231T. This course is available for EM credit.</td>
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<tr>
<td>2040T</td>
<td>Soil and Water Conservation Systems</td>
<td>U 4</td>
<td>Introduction to erosion control, irrigation, drainage, and wetland systems with an emphasis on land surveying and mapping, system selection, and design. Prereq: CrpSoil 2300T and CrpSoil 2301T (221T). Not open to students with credit for 224T. This course is available for EM credit.</td>
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<tr>
<td>2050T</td>
<td>Introduction to Geographic Information Systems</td>
<td>U 3</td>
<td>A study of spatial relationships using global positioning and geographic information systems in urban and rural landscapes. Prereq: GenMath 1040T or Math 1050 or Math placement level R or higher. This course is available for EM credit.</td>
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<tr>
<td>2092T</td>
<td>Problem Solving: Career and Society Applications</td>
<td>U 2</td>
<td>A multi-discipline, problem-solving course with emphasis on the application of problem solving and related topics in career and society settings. Prereq: Soph standing. Not open to students with credit for 292T. This course is available for EM credit.</td>
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<tr>
<td>2110T</td>
<td>Construction Drawings &amp; Basic Estimating</td>
<td>U 1</td>
<td>Reading and interpretation of various types of construction drawings, as well as an introduction to material quantity calculations and estimate development. Prereq: GenMath 1030T or Math placement level S or higher. This course is available for EM credit.</td>
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<tr>
<td>2120T</td>
<td>Building Science: Methods &amp; Materials</td>
<td>U 4</td>
<td>A study of materials science and installation methods used in residential and commercial construction. Emphasizes structural and architectural systems, moisture managed designs, air sealing, and thermal design for energy efficient structures. Prereq or concur: English 1110.01; GenMath 1145T or Math 1148 or higher. This course is available for EM credit.</td>
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<tr>
<td>2121T</td>
<td>Drafting &amp; Computer-Aided Design</td>
<td>U 2</td>
<td>Principles and applications of technical drawing utilizing proper drafting techniques for creating two dimensional, scaled drawings both by hand and by using current computer-aided design software. Basic computer skills required. Recommended prereq: Previous experience with mechanical drawing, engineering graphics, drafting, or equivalent. This course is available for EM credit.</td>
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<tr>
<td>2160T</td>
<td>Estimating and Scheduling</td>
<td>U 2</td>
<td>Estimating complete projects and developing project schedules for standard construction projects in the residential or commercial sectors of the industry. Prereq: 2110T, 2120T, 2440T, and Soph standing. This course is available for EM credit.</td>
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<tr>
<td>2170T</td>
<td>Construction Project Management</td>
<td>U 2</td>
<td>Principles and practices of construction project and construction business management. Prereq or concur: 2160T, and Soph standing. This course is available for EM credit.</td>
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182 Engineering Technology

2191.01T Construction Management Internship U 2 - 3
Construction Management occupational internship, structured to provide occupational experiences; supervised by an industry employer and coordinated by faculty. A grade of C or better is required to meet graduation requirements. Prereq: 2110T and 2120T (253T, 256T, and 257T), and 2600T, and CPHR 2.0 or above, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 2 completions.

2191.02T Hydraulic Power and Motion Control Internship U 3
Employment in fluid power industries; structured to provide varied occupational experiences; supervised by an industry employer and coordinated by faculty. A grade of C or better is required to meet graduation requirements. Prereq: 2224T (247T), 2226T (271T), and 2232T (202T); CPHR 2.0 or above; permission of instructor. Repeatable to a maximum of 6 cr hrs.

2191.03T Power Equipment Internship U 3
Employment in power equipment industries; structured to provide varied occupational experiences; supervised by an industry employer and coordinated by faculty. A grade of C or better is required to meet graduation requirements. Prereq: 2314T (241T), 2332T (252T), and 2334T (245T), and CPHR 2.0 or above, and permission of instructor. Repeatable to a maximum of 6 cr hrs.

2191.04T Agricultural Systems Technology Internship U 2
Agricultural Systems Technology occupational internship structured to provide occupational experiences; supervised by an industry employer and coordinated by faculty. A grade of C or better is required to meet graduation requirements. Prereq: CPHR 2.0 or above, and permission of instructor. Repeatable to a maximum of 4 cr hrs.

2193T Individual Studies U 1 - 3
Designed to give an individual student an opportunity to pursue special studies not offered in other courses. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

2194T Group Studies U 1 - 3
Designed to give groups of students an opportunity to pursue special studies not offered in other courses. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

2214T Fundamentals of Fluid Power and Components U 4
An introduction to the fluid power industry and the principles of fluid power system operation. Characteristics of operation and performance are investigated for pumps, motors, and valves. A grade of C or better is required to meet graduation requirements for Hydraulic Power and Motion Control. Prereq: GenMath 1030T, or Math placement level S or higher. This course is available for EM credit.

2221T Component Rebuilding U 2
Supervised laboratory experience with emphasis on developing and improving hydraulic component service competencies related to classroom and career activities. Prereq: 2214T (262T or 270T), Prereq or concur: 2224T (247T) and 2336T (273T). Not open to students with credit for 2693T.

2224T Fluids, Filtration, and Fluid Conveyance U 2
Characteristics of hydraulic fluids; methods of filtering oils and of conveying pressurized fluids. Prereq: 2224T (262T or 270T). Not open to students with credit for 2743T. This course is available for EM credit.

2226T Components and Hydraulic Circuits U 2
A study of advanced hydraulic component topics and of how fluid power components are integrated into a complete system, including performance characteristics and energy efficiency. A grade of C or better is required to meet graduation requirements for Hydraulic Power and Motion Control. Prereq: 2214T. Prereq or concur: GenMath 1145T. This course is available for EM credit.

2234T Basic Pneumatic Systems U 2
Principles, operation, maintenance, service, and application of pneumatic components and systems used for control and automation on industrial equipment. Prereq or concur: GenMath 1145T. This course is available for EM credit.

2238T Electrohydraulics and System Design U 3
A study of the interface and design applications of electricity and electronics with fluid power components integrated into a complete system, including performance characteristics and energy efficiency. A grade of C or better is required to meet graduation requirements for Hydraulic Power and Motion Control. Prereq: 2226T (272T). Not open to students with credit for 2783T. This course is available for EM credit.

2240T Welding Technology U 3
A study of basic welding including materials, equipment, and techniques. Prereq: Not open to students with credit for 2501T. This course is available for EM credit.

2242T Metals and Metal Manufacturing U 2
Introduction to metals and metal manufacturing; including materials, equipment, processes, and products. Prereq: GenMath 1040T or Math 1050 or Math placement level R or higher. This course is available for EM credit.

2244T Instrumentation and Control Systems U 4
Techniques and equipment used for instrumentation of fluid power systems for the purposes of data acquisition and control. Prereq: 2238T (278T). Not open to students with credit for 2793T. This course is available for EM credit.

2310T Building Science: Electrical and Lighting Systems U 3
Principles, equipment, and applications of building electrical and lighting systems with emphasis on energy and resource conservation and sustainability. Prereq: TecPhys 1150T. Not open to students with credit for 2150T.

2312T Engineering Technology Fundamentals U 3
An introduction to basic scientific and engineering concepts commonly encountered by engineering technicians emphasizing calculations, measurements, and instrumentation. This course is available for EM credit.

2314T Introduction to Power Equipment U 3
An introduction to the off-road machinery industries, their past and future, and the application of engineering principles to the associated equipment. Prereq: GenMath 1030T, or Math placement level S or higher. This course is available for EM credit.

2322T Basic Electricity and Electronics U 3
Principles of AC and DC electricity and electronics with emphasis on components, operations, and applications. Prereq: GenMath 1040T, Math 1050, or Math placement level R or higher. This course is available for EM credit.

2324T Engine Diagnosis and Repair U 3
An advanced study of multiple cylinder diesel engine diagnostic techniques including repair and rebuilding procedures. A grade of C or better required to meet graduation requirements for Power Equipment. Prereq: 2111T (240T) or 2314T (241T). Not open to students with credit for 2453T. This course is available for EM credit.

2325T Analog and Digital Electronics U 3
An introduction to analog and digital electronics with emphasis on industry applications. A grade of C or better required to meet graduation requirements for Hydraulic Power and Motion Control. Prereq: 2322T (202T). Not open to students with credit for 2033T. This course is available for EM credit.

2331T Distributor Management U 2
Organization and operation of distributor marketing of mobile equipment and fluid power components and systems; emphasis on service and parts distribution. Prereq or concur: BusTec 1151T or AEDEcon 2001. This course is available for EM credit.

2332T Mobile Heating and Air Conditioning U 1
Principles, operation, maintenance, service, and repair of mobile heating and air conditioning components and systems. Prereq: GenMath 1030T, or Math placement level S or higher. This course is available for EM credit.

2334T Vehicle Electrical and Electronic Systems U 2
A study of electrical and electronic systems utilized in off-road machinery. A grade of C or better required to meet graduation requirements for Power Equipment. Prereq: 2322T. This course is available for EM credit.

2336T Methods of Power Transmission U 2
Comparison and evaluation of power transmission by mechanical, electrical, and fluidic means. Prereq: GenMath 1030T, or Math placement level S or higher. Prereq or concur: EngTech 2012T. This course is available for EM credit.

2338T Diesel Engine Systems U 3
A study of the principles, operation, and service of diesel engine systems with emphasis on fuel systems and engine controls. Prereq: 2334T. Prereq or concur: 2334T and TecPhys 1150T. This course is available for EM credit.

2345T Building Science: Mechanical Systems U 3
Principles, equipment, and applications of building mechanical systems with emphasis on energy and resource conservation and sustainability. Prereq: TecPhys 1150T. Not open to students with credit for 2150T. This course is available for EM credit.
2348T Performance of Mobile Power Units U 2
A study of operator comfort and safety, ballast, traction, stability, hitching, engine power ratings, fuel efficiency and other factors affecting the performance and application of mobile power units. A grade of C or better required to meet graduation requirements for Power Equipment. Prereq: Completion of tractor/mobile equipment safety certification process. Prereq: 2336T (237T), 2338T (248T), TechPhys 1105T (102T). Not open to students with credit for 249T. This course is available for EM credit.

2440T Site Development and Surveying U 4
Principles of hydrology, soil mechanics, and surveying as applied to residential and commercial construction. Prereq or concor: 2110T or HortTec 2307T (235T); GenMath 1145T (145T) or Math Placement Level L, M, or N. Not open to students with credit for 253T. This course is available for EM credit.

2600T Construction Safety & Health U 2
Health and safety awareness; focusing on OSHA 30-hour training and certification, OSHA mandated recordkeeping, and corporate health plan development. Prereq: English 1110.01.

Engineering Technology (BS) U 1

1200 Introduction to Engineering Technology U 1
Introduction to the roles available in engineering technology, professional development planning for students pursuing this degree, and exposure to common elements in engineering technology. Course work will emphasize written and verbal communication skills. Prereq: Enrollment in the BSET program.

1500 Manufacturing Processes I U 3
History of manufacturing, tools and machines, and operations of the machine shop equipment. Opportunity to function individually and on teams, and communicate effectively to learn to work in groups to accomplish a task. The skills learned from this class are transferable to all areas of day to day professional life which makes it valuable in other contexts.

1600 Engineering Graphics U 3
Develop skills in graphic design and visualization through experience creating and interpreting 2D Computer Aided Drawings in AutoCAD. Explore various forms of technical graphics used in the field of Engineering Technology including facility layouts, piping and instrumentation diagrams, and electrical schematics. Emphasis on utilizing technical graphics to solve Engineering Technology problems.

2300 Electrical Circuits for Engineering Technology U 3
Fundamentals of electrical circuits, measuring & analyzing data, & troubleshooting those circuits. Analysis of Direct Current (primarily) & Alternating Current circuits (less content) & effects of different components- resistors, capacitors, inductors, and other components in electrical circuits. DC/AC circuit dynamics that will be used in studies of industrial & electronic control applications. Prereq Math 1155 or 1172, and Physics 1211 or 1251. Not open to students with credit for ECE 2300.

2500 Manufacturing Processes II U 2
Modern manufacturing processes. Design, create, and assembly of structure/objects by combining the manufacturing and graphical design knowledge. Opportunity to function individually and on teams and communicate effectively to learn to work in groups to accomplish a task. The skills are transferable to all areas of day-to-day professional life which makes it valuable in other contexts. Prereq: 1500.

3800 Project Management for Engineering Technology U 3
Project Management is a course that focuses on waterfall (PMBOK) and Agile methodologies for managing projects in the manufacturing industry. Emphasis is placed on project initiation, planning, executing, monitoring & controlling, and closing processes. This course will provide students with an overview of leadership roles and responsibilities, as well as interpersonal skills, conflict resolution. Prereq: 2500 and ISE 2040, or permission of instructor. Not open to students with credit for ISE 3800.

English U 1

1109 Intensive Writing and Reading U 4
Provides intensive practice in integrating academic reading and writing. Credit may not count toward graduation in some degree programs. Prereq: English Placement Test score of 6. Not open to students with credit for 1110.01 (110.01), 1110.01H (110.01H), 1110.02 (110.02), 1110.02H (110.02H), 052, 060, or 110.03, or equiv.

1110.01 First-Year English Composition U 3
Practice in the fundamentals of expository writing, as illustrated in the student’s own writing & in the essays of professional writers. May be available as a service learning course with five hours community service required at the Lima campus only. Prereq: EdTL 1902 (108.01) or 1902.04 (108.01), or English Placement Level 4. Not open to students with credit for 1109 (109.01 or 109.02), 1110.01 (non-DL version), 1110.01H (110.01H), 1110.02 (110.02), 1110.02H (110.02H), 1110.03 (110.03), 1167H (167H). 1110.01. This course is available for EM credit. GE writing and comm course: level 1.

1110.01H Honors First-Year English Composition U 3
Provides intensive practice in the fundamentals of expository writing, as illustrated in the student’s own writing and in the essays of professional writers. Prereq: Honors standing, and 28 or above on the English section of the ACT or 660 on the verbal section of the SAT; or permission of instructor. Not open to students with credit for 1101.01 (101.01), 1110.02 (110.02), 1110.02H (110.02H), 110.01H, 1110.03 (110.03), or 1167H (167H). This course is available for EM credit. GE writing and comm course: level 1.

1110.02 First-Year English Composition U 3
Practice in the fundamentals of expository writing, as illustrated in the student’s own writing and in the essays of professional writers. Taught with an emphasis on literary texts. Prereq: EdTL 1902 or 1902.04, or English Placement Level 4. Not open to students with credit for 1109, 1110.01, 1110.01H, 1110.02 (non-DL version), 1110.02H, 1110.03, 1167H, or equiv. This course is available for EM credit. GE writing and comm course: level 1.

1110.02H Honors First-Year English Composition U 3
Provides intensive practice in the fundamentals of expository writing, as illustrated in the student's own writing and in the essays of professional writers. Taught with an emphasis on literary texts. Prereq: Honors standing, and 28 or above on the English section of the ACT or 660 on the verbal section of the SAT; or permission of instructor. Not open to students with credit for 1101.01 (101.01), 1110.01H (110.01H), 1110.02 (110.02), 1110.02H, 1110.03 (110.03), or 1167H (167H). GE writing and comm course: level 1.

1110.03 First-Year English Composition U 3
Intensive practice in fundamentals of expository writing illustrated in the student's own writing and essays of professional writers: offered in a small class setting and linked with an individual tutoring component in its concurrent course, 1193. This course is available for EM credit only through the AP program. Prereq: 1109, or English Placement Level 5 (Placement Level 4 allowed if student requests service). Concurs: 1109. Not open to students with credit for 1110.01 (110.01), 1110.01H (110.01H), 1110.02 (110.02), 1110.02H (110.02H), 1167H (167H), or 110.03, or equiv. GE writing and comm course: level 1.

1167H First-Year Writing Seminar in the Humanities U 3
Intensive critical reading and writing concerning central issues in the humanities. Prereq: Honors standing, and a 4 or 5 on the Advanced Placement Test; or permission of instructor. Not open to students with credit for 167H. GE cultures and ideas course.

1193 Individual Studies U 1 - 4
Intensive practice in the fundamentals of expository writing. Prereq: Permission of Director of First-Year Writing. Concurs: 1110.03. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

2150 Career Preparation for English and Related Majors U 3
This general elective course helps English majors and students from other Humanities disciplines to explore and prepare for careers after graduation. Students will analyze texts to gain a practical and theoretical understanding of the world of work. They will learn to identify their own strengths and preferences to guide their job activity and career choices.

2194 Group Studies U 1 - 3
Topic varies from semester to semester on subjects not otherwise covered by English courses. Prereq: 1110.01 (110.01), or equiv. Not open to students with 30 qtr cr hrs or 26 cr hrs. Repeatable to a maximum of 18 cr hrs or 16 completions.

2201 Selected Works of British Literature: Medieval through 1800 U 3
An introductory critical study of the works of major British writers from 800 to 1800. Prereq: 1110.01, or equiv. Not open to students with credit for 2201H (201) or 201. GE lit and diversity global studies course.

2201H Selected Works of British Literature: Medieval through 1800 U 3
An introductory critical study of the works of major British writers from 800 to 1800. Prereq: Honors standing, and 1110.01 (110.01) or equiv. Not open to students with credit for 2201 (201) or 201H. GE lit and diversity global studies course.

2202 Selected Works of British Literature: 1800 to Present U 3
An introductory critical study of the works of major British writers of the 19th and 2oth centuries. Prereq: 1110.01, or equiv. Not open to students with credit for 2202H (202H) or 202. GE lit and diversity global studies course.

2202H Selected Works of British Literature: 1800 to Present U 3
An introductory critical study of works of major British writers of the 19th and 20th centuries. Prereq: Honors standing, and 1110.01 (110.01) or equiv. Not open to students with credit for 2202 (202) or 202H. GE lit and diversity global studies course.

2220 Introduction to Shakespeare U 3
Study of selected plays designed to give an understanding of drama as theatrical art and as an interpretation of fundamental human experience. Prereq: 1110.01 (110.01), or equiv. Not open to students with credit for 2220H (220H) or 220. GE lit and diversity global studies course.
184 English

220H Introduction to Shakespeare U 3
Study of selected plays designed to give an understanding of drama as theatrical art and as an interpretation of fundamental human experience. Prereq: Honors standing, and 1110.01 (110.01) or equiv. Not open to students with credit for 2220 (220) or 222H. GE lit course and diversity global studies course.

2260 Introduction to Poetry U 3
Designed to help students understand and appreciate poetry through an intensive study of a representative group of poems. Prereq: 1110.01 (110.01) or equiv. Not open to students with credit for 2260 (260) or 260H. GE lit course.

2260H Introduction to Poetry U 3
Designed to help students understand and appreciate poetry through an intensive study of a representative group of poems. Prereq: Honors standing, and 1110.01 (110.01) or equiv. Not open to students with credit for 2260 (260) or 260H. GE lit course.

2261 Introduction to Fiction U 3
Examination of the elements of fiction -- plot, character, setting, narrative, perspective, theme, etc. -- and their various interrelations; comparisons with nonfictional narrative may be included. Prereq: 1110.01 (110.01) or equiv. Not open to students with credit for 2261H (261H) or 261. GE lit course.

2261H Introduction to Fiction U 3
Examination of the elements of fiction -- plot, character, setting, narrative, perspective, theme, etc. -- and their various interrelations; comparisons with nonfictional narrative may be included. Prereq: Honors standing, and 1110.01 (110.01) or equiv. Not open to students with credit for 2261 (261) or 261H. GE lit course.

2262 Introduction to Drama U 3
A critical analysis of selected dramatic masterpieces from Greek antiquity to the present, designed to clarify the nature and major achievements of Western dramatic art. Prereq: 1110.01 (110.01) or equiv. Not open to students with credit for 2262H (262H) or 262. GE lit course.

2263 Introduction to Film U 3
Introduction to methods of reading film texts by analyzing cinema as technique, as system, and as cultural product. Prereq: 1110.01 (110.01) or equiv. Not open to students with credit for 263. GE VPA course.

2264 Introduction to Popular Culture Studies U 3
Introduction to the analysis of popular culture texts. Prereq: 1110.01 (110.01). Not open to students with credit for 264 or CompStd 2264 (264). GE cultures and ideas course. Cross-listed in CompStd.

2265 Introductory Fiction Writing U 3
An introduction to the fundamentals of technique, craft, and composition; practice in the writing of fiction; and analysis and discussion of student work as well as published stories by masters of the genre. Prereq: 1110.

2266 Introductory Poetry Writing U 3
An introduction to the fundamentals of technique, craft, composition, and prosody; practice in the writing of poetry; and analysis and discussion of student work as well as published poems by established poets. Prereq: 1110.

2267 Introduction to Creative Writing U 3
An introduction to the writing of fiction, poetry, and creative nonfiction. Analysis and discussion of student work, with reference to the general methods and scope of all three genres. Prereq: 1110.01 or equiv.

2268 Introductory Creative Nonfiction Writing U 3
An introduction to the fundamentals of technique, craft, and composition; practice in the writing of creative nonfiction; and analysis and discussion of student work as well as published essays by masters of the many forms of creative nonfiction. Prereq: 1110.

2269 Digital Media Composing U 3
A composition course in which students analyze and compose digital media texts while studying complex forms and practices of textual production. Prereq: 1110.01 (110.01) or equiv. Not open to students with credit for 269. GE VPA course.

2270 Introduction to Folklore U 3
Folklore theory and methods explored through engagement with primary sources: folklore, legend, joke, folksong, festival, belief, and art. Folklore Minor course. Prereq: 1110.01 (110.01) or equiv. Not open to students with credit for 2270 (270), CompStd 2350, or 2350H. GE cultures and ideas course. Cross-listed in CompStd 2350H.

2275 Thematic Approaches to Literature U 3
An introduction to literature through the examination of a major theme as treated in different genres and periods; topic varies by semester. Prereq: 1110.01 (110.01) or equiv. Not open to students with 10 cr hrs for 275. Repeatable to a maximum of 6 cr hrs. GE lit course.

2276 Arts of Persuasion U 3
Introduces students to the study and practice of rhetoric and how arguments are shaped by technology, media, and cultural contexts. Prereq: 1110.01 (110.01) or equiv. Not open to students with credit for 276. GE cultures and ideas course.

2277 Introduction to Disability Studies U 3
Foundational concepts and issues in disability studies; introduction to the sociopolitical models of disability. Prereq: 1110.01 or equiv. GE cultures and ideas course.

2280 The English Bible U 3
The Bible in English translation, with special attention to its literary qualities, conceptual content, and development within history. Prereq: 1110.01 (110.01) or equiv. Not open to students with credit for 2280H (280H) or 280. GE lit course.

2280H The English Bible U 3
The Bible in English translation, with special attention to its literary qualities, conceptual content, and development within history. Prereq: Honors standing, and 1110.01 (110.01) or equiv. Not open to students with credit for 2280 (280) or 280H. GE lit course.

2281 Introduction to African-American Literature U 3
A study of representative literary works by African-American writers from 1760 to the present. Prereq: 1110.01 (110.01) or equiv. Not open to students with credit for 281 or AfrAmSt 2281 (281). GE lit and diversity soc div in the US course. Cross-listed in AfrAmSt.

2282 Introduction to Queer Studies U 3
Introduces and problematizes foundational concepts of the interdisciplinary field of queer studies, highlighting the intersections of sexuality with race, class, and nationality. Prereq: 1110.01 (110.01) or equiv. Not open to students with credit for 282 or WGSSt 2282 (282). GE cultures and ideas and diversity soc div in the US course. Cross-listed in WGSSt.

2290 Colonial and U.S. Literature to 1865 U 3
Introductory study of significant works of U.S. literature from its Colonial origins to 1865. Prereq: 1110.01 (110.01) or equiv. Not open to students with credit for 290. GE lit course.

2291 U.S. Literature: 1865 to Present U 3
Introductory study of significant works of U.S. literature from 1865 to the present. Prereq: English 1110.01 (110.01), or equiv. Not open to students with credit for 291. GE lit course.

2367.01 Language, Identity, and Culture in the U.S. Experience U 3
Extends & refines expository writing & analytical reading skills, emphasizing recognition of intertextuality & reflection on compositional strategies on topics pertaining to education & pop culture in America. Only one 2367 (367) decimal subdivision may be taken for credit. Prereq: 1110.01 (110.01), and Soph standing; or EM credit for 1110.01 (110.01) or equiv; or a declared major in English. Not open to students with credit for 2367.01 (367.01), 210, 267, 267H, 301, 303, or equiv. GE writing and comm: level 2 and diversity soc div in the US course.

2367.01H Language, Identity, and Culture in the U.S. Experience U 3
Extends & refines expository writing & analytical reading skills emphasizing recognition of intertextuality & reflection on compositional strategies on topics pertaining to education & pop culture in America. Only one 2367 (367) decimal subdivision may be taken for credit. Prereq: Honors standing; and 1110.01 (110.01), and Soph standing; or EM credit for 1110.01 (110.01) or equiv; or a declared major in English; or permission of instructor. Not open to students with credit for 2367.01 (367.01), 210, 267, 267H, 301, 303, or equiv. GE writing and comm: level 2 and diversity soc div in the US course.

2367.01H Language, Identity, and Culture in the U.S. Experience U 3
Extends & refines expository writing & analytical reading skills emphasizing recognition of intertextuality & reflection on compositional strategies on topics pertaining to education & pop culture in America. Only one 2367 (367) decimal subdivision may be taken for credit. Prereq: 1110.01 (110.01), and Soph standing; or EM credit for 1110.01 (110.01) or equiv; or a declared major in English; or a declared major in English. Not open to students with credit for 2367.01 (367.01), 210, 267, 267H, 301, 303, or equiv. GE writing and comm: level 2 and diversity soc div in the US course.

2367.02 Language, Identity, and Culture in the U.S. Experience U 3
Discussion & practice of the conventions, practices, & expectations of scholarly reading of literature & expository writing on issues relating to diversity within the U.S. experience. Only one 2367 (367) decimal subdivision may be taken for credit. Prereq: 1110.01 (110.01) or equiv, and Soph standing; or EM credit for 1110.01 (110.01) or equiv; or a declared major in English; or open to students with credit for 2367.01 (367.01), 210, 267, 267H, 301, 303, or equiv. GE writing and comm: level 2 and lit (BS only) and diversity soc div in the US course.
An introduction that extends and refines skills in critical reading and expository writing through analysis of written texts, video, and documentaries. Only one 2367 (367) decimal subdivision may be taken for credit.

Prereq: Honors standing; and 1110.01 (110.01) or equiv; and Soph standing; or EM credit for 1110.01 (110.01) or equiv; or a declared major in English; or permission of instructor. Not open to students with credit for 2367.01 (367.01), 210, 267, 267H, 301, 303, or equiv. GE writing and comm course: level 2.

2367.03 Documentary in the U.S. Experience

An intermediate course that extends and refines skills in critical reading and expository writing through analysis of written texts, video, and documentaries. Only one 2367 (367) decimal subdivision may be taken for credit.

Prereq: Honors standing; and 1110.01 (110.01) or equiv; and Soph standing; or EM credit for 1110.01 (110.01) or equiv; or a declared major in English; or permission of instructor. Not open to students with credit for 2367.01 (367.01), 210, 267, 267H, 301, 303, or equiv. GE writing and comm course: level 2.

2367.04 Technology and Science in the U.S. Experience

Explores how technological changes impact our culture & relationships; students build & expand skills in rhetorical analysis & composition through experimentation with new forms of communication. One 2367 (367) subdivision may be taken for credit.

Prereq: 1110.01 (110.01) or equiv; and Soph standing; or EM credit for 1110.01 (110.01) or equiv; or a declared major in English. Not open to students with credit for 2367.01 (367.01), 210, 267, 267H, 301, 303, 367.04H, or equiv. GE writing and comm course: level 2.

2367.05 The U.S. Folk Experience

Concepts of American folklore & ethnography; folklore groups, tradition, & fieldwork methodology; how these contribute to the development of critical reading, writing, & thinking skills. Only one 2367 (367) decimal subdivision may be taken for credit.

Prereq: Honors standing; and 1110.01 (110.01) or equiv; and Soph standing; or EM credit for 1110.01 (110.01) or equiv; or a declared major in English. Not open to students with credit for 2367.01 (367.01), 210, 267, 267H, 301, 303, or equiv. GE writing and comm course: level 2.

2367.06 Composing Disability in the U.S.

Extends & refines expository writing & analytical reading skills, emphasizing recognition of intertextuality & reflection on compositional strategies on topics pertaining to education & pop culture in America. Only one decimal subdivision of English 2367 may be taken for credit.

Prereq: English 1110; and Soph standing, or a declared major in English. GE writing and comm: level 2 and diversity soc div in the US course. Cross-listed in AHANIAS.

2367.07S Literacy Narratives of Black Columbus

This service-learning course focuses on collecting and preserving literacy narratives of Columbus-area Black communities. Through engagement with community partners, students refine skills in research, analysis, and composition; students synthesize information, create arguments about discursive/visual/cultural artifacts, and reflect on the literacy & life-history narratives of Black Columbus.

Prereq: 1110 or equiv.; and Soph standing, or a declared major in English. Not open to students with credit for AfrAmASt 2367.07S. GE writing and comm course: level 2.

2367.08 The U.S. Experience: Writing About Video Games

Emphasizes persuasive and researched writing, revision, and composing in various forms and media. Focusing on digital literacy, development of critical thinking skills and skill in producing analytical prose, students explore key conversations in the field of games and analyze a variety of types of video game writing. No prior knowledge of video games or game studies is required.

Prereq: 1110 or equiv; and Soph standing, or a declared major in English. GE writing and comm course: level 2.

2463 Introduction to Video Games Analysis

An introduction to humanities-based methods of analyzing and interpreting video games in terms of form, genre, style, and theory. No background in video game play is necessary. All students will have regular opportunities for hands-on experience with different game types and genres in both the computer-based classroom and the English Department Video Game Lab.

Prereq: English 1110. GE VPA course.
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<th>Course Number</th>
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<td>3465</td>
<td>Special Topics in Intermediate Fiction Writing</td>
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<td>3466</td>
<td>Special Topics in Intermediate Poetry Writing</td>
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<td>Issues and Methods in Tutoring Writing</td>
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<td>Special Topics in Intermediate Creative Nonfiction Writing</td>
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<td>An Introduction to Literary Publishing</td>
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<td>Cultures of Professional Writing</td>
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<td>Professional Writing Minor: Capstone Internship</td>
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<td>Environmental Literatures, Cultures, and Media</td>
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<td>Healthcare Experiences: Observing, Reading, Writing</td>
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<td>Capstone Course for Integrated Major in Mathematics</td>
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<td>Nineteenth-Century British Poetry</td>
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**Notes:**
- Prereq: Grade of C or above in 2266. Repeatable to a maximum of 6 cr hrs.
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- The Early British Novel: Origins to 1830
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- Special Topics in Intermediate Poetry Writing
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- Environmental Citizenship
- An Introduction to Literary Publishing
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- Chaucer
- Shakespeare
- Renaissance Drama
- Renaissance Poetry
- Special Topics in Renaissance Literature and Culture
- The Early British Novel: Origins to 1830
- Special Topics in Restoration and Eighteenth Century
- Nineteenth-Century British Poetry
- The Nineteenth-Century British Novel
4547 20th-Century Poetry
A study of twentieth-century British and American poetry, with emphasis on such major figures as Frost, Yeats, Stevens, Eliot, Williams, Auden, Bishop, and Langston Hughes.
Prereq: 10 qtr cr hrs or 6 cr hrs of English at 2000-3000 level, or permission of instructor. 5 qtr cr hrs in 367 or 3 cr hrs in 2367 in any subject is acceptable towards the 6 cr hrs. Not open to students with credit for 547.

4549 Modern Drama
An historical and critical examination of the major developments, personalities, and achievements in the drama of Europe and America since the advent of Ibsen.
Prereq: 10 qtr cr hrs or 6 cr hrs of English at 2000-3000 level, or permission of instructor. 5 qtr cr hrs in 367 or 3 cr hrs in 2367 in any subject is acceptable towards the 6 cr hrs. Not open to students with credit for 549 or 649.

4550 Special Topics in Colonial and Early National Literature
Focuses on themes and problems in literature and culture of colonial and early national U.S. Literature.
Prereq: 10 qtr cr hrs or 6 cr hrs of English at 2000-3000 level, or permission of instructor. 5 qtr cr hrs in 367 or 3 cr hrs in 2367 in any subject is acceptable towards the 6 cr hrs. Not open to students with 10 qtr cr hrs or 550. Repeatable to a maximum of 6 cr hrs.

4551 Special Topics in 19th-Century U.S. Literature
Focuses on themes and problems in U.S. literature and culture of the 19th century.
Prereq: 10 qtr cr hrs or 6 cr hrs of English at 2000-3000 level, or permission of instructor. 5 qtr cr hrs in 367 or 3 cr hrs in 2367 in any subject is acceptable towards the 6 cr hrs. Not open to students with 10 qtr cr hrs or 551. Repeatable to a maximum of 6 cr hrs.

4551E Special Topics in 19th-Century U.S. Literature
Honors embedded experience. Focuses on themes and problems in literature and culture of the 19th-century U.S.
Prereq: Honors standing, and 10 qtr cr hrs or 6 cr hrs of English at 2000-3000 level, or permission of instructor. 5 cr hrs in 367 or 3 cr hrs in 2367 in any subject is acceptable towards the 6 cr hrs. Not open to students with 10 qtr cr hrs for 551. Repeatable to a maximum of 6 cr hrs.

4552 Special Topics in American Poetry Through 1915
This course focuses on themes and problems in the history of American poetry.
Prereq: 10 qtr cr hrs or 6 cr hrs of English at 2000-3000 level, or permission of instructor. 5 qtr cr hrs in 367 or 3 cr hrs in 2367 in any subject is acceptable towards the 6 cr hrs. Not open to students with 10 qtr cr hrs for 552. Repeatable to a maximum of 6 cr hrs.

4553 20th-Century U.S. Fiction
A study of American fiction after 1914, with emphasis on such major figures as Anderson, Fitzgerald, Hemingway, and Faulkner.
Prereq: 10 qtr cr hrs or 6 cr hrs of English at 2000-3000 level, or permission of instructor. 5 qtr cr hrs in 367 or 3 cr hrs in 2367 in any subject is acceptable towards the 6 cr hrs. Not open to students with credit for 553.

4554 English Studies and Global Human Rights
Covers key human rights concepts and the role that humanities-based methods of analysis can play in the study of human rights. Examines how human rights are described in legal texts, cultural narratives, public discourses, and artistic representations. Also considers conflicting and contested representations, how they work, and how they are used in particular contexts.
Prereq: 2367. GE diversity global studies.

4555 Rhetoric and Legal Argumentation
Examines legal argumentation as a specialized type of rhetorical discourse; considers the relationship between rhetoric and legal discourse from historical, theoretical, and practical perspectives; covers key concepts in rhetorical theory and explores their relevance for analyzing and producing legal arguments; students apply theory in analysis and production of spoken and written legal arguments.
Prereq: Any version of 2367.

4559 Introduction to Narrative and Narrative Theory
Study of narrative in its different manifestations, e.g., novel, autobiography, film, legal testimony, and of theories of its form and significance.
Prereq: 10 qtr cr hrs or 6 cr hrs of English at 2000-3000 level, or permission of instructor. 5 qtr cr hrs in 367 or 3 cr hrs in 2367 in any subject is acceptable towards the 6 cr hrs. Not open to students with credit for 559.

4560 Special Topics in Poetry
Focuses on special topics in the study of poetry. Examples include the dramatic monologue; epic and mock epic; the religious lyric; narrative poetry.
Prereq: 10 qtr cr hrs or 6 cr hrs of English at 2000-3000 level, or permission of instructor. 5 qtr cr hrs in 367 or 3 cr hrs in 2367 in any subject is acceptable towards the 6 cr hrs. Not open to students with 10 qtr cr hrs for 560. Repeatable to a maximum of 6 cr hrs.

4561 Studies in Fictional and Nonfictional Narrative
Focused study of specific subgenres of fiction, nonfiction, or relations between such subgenres.
Prereq: 10 qtr cr hrs or 6 cr hrs of English at 2000-3000 level, or permission of instructor. 5 qtr cr hrs in 367 or 3 cr hrs in 2367 in any subject is acceptable towards the 6 cr hrs. Not open to students with 10 qtr cr hrs for 561. Repeatable to a maximum of 6 cr hrs.

4552 Studies in Literature and the Other Arts
Studies in English literature in an interdisciplinary context. Period and context will vary. Possible topics: modernism and music, romanticism and painting, Elizabethan literature and iconography.
Prereq: 10 qtr cr hrs or 6 cr hrs of English at 2000-3000 level, or permission of instructor. 5 qtr cr hrs in 367 or 3 cr hrs in 2367 in any subject is acceptable towards the 6 cr hrs. Not open to students with 10 qtr cr hrs for 596. Repeatable to a maximum of 6 cr hrs.

4563 Contemporary Literature
A study of poetry and prose written since approximately 1960.
Prereq: 10 qtr cr hrs or 6 cr hrs of English at 2000-3000 level, or permission of instructor. 5 qtr cr hrs in 367 or 3 cr hrs in 2367 in any subject is acceptable towards the 6 cr hrs. Not open to students with credit for 563.

4564.01 Major Author in Medieval and Renaissance British Literature
Intensive study of one of the major authors of the period.
Prereq: 10 qtr cr hrs or 6 cr hrs of English at 2000-3000 level, or permission of instructor. 5 qtr cr hrs in 367 or 3 cr hrs in 2367 in any subject is acceptable towards the 6 cr hrs. Not open to students with credit for 564.01.

4564.02 Major Author in 18th- and 19th-Century British Literature
Intensive study of one of the major authors of the period.
Prereq: 10 qtr cr hrs or 6 cr hrs of English at 2000-3000 level, or permission of instructor. 5 qtr cr hrs in 367 or 3 cr hrs in 2367 in any subject is acceptable towards the 6 cr hrs. Not open to students with credit for 564.02.

4564.03 Major Author in American Literature to 1900
Intensive study of one of the major authors of the period.
Prereq: 10 qtr cr hrs or 6 cr hrs of English at 2000-3000 level, or permission of instructor. 5 qtr cr hrs in 367 or 3 cr hrs in 2367 in any subject is acceptable towards the 6 cr hrs. Not open to students with credit for 564.03.

4564.04 Major Author in 20th-Century Literature
Intensive study of one of the major authors of the period.
Prereq: 10 qtr cr hrs or 6 cr hrs of English at 2000-3000 level, or permission of instructor. 5 qtr cr hrs in 367 or 3 cr hrs in 2367 in any subject is acceptable towards the 6 cr hrs. Not open to students with credit for 564.04.

4565 Advanced Fiction Writing
Advanced workshop in the writing of fiction. This is a class for serious students of creative writing. Admission is by portfolio submission to the instructor.
Prereq: 2265 and permission of instructor. Repeatable to a maximum of 9 cr hrs.

4566 Advanced Poetry Writing
Advanced workshop in the writing of poetry. This is a class for serious students of creative writing. Admission is by portfolio submission to the instructor.
Prereq: 2265 and permission of instructor. Not open to students with 9 sem cr hrs of 4566 and/or 4566E. Repeatable to a maximum of 9 cr hrs.

4567S Rhetoric and Community Service: A Writing Seminar
Service learning course. Critical examination of organizational rhetorics; production of texts in various media for various purposes and audiences as indicated by host organizations. Prereq: 110.01 (110.01) or equiv, and a 2367 (367) second writing course. Not open to students with 10 qtr cr hrs for 567. Repeatable to a maximum of 6 cr hrs. GE service learning course.

4568 Advanced Creative Nonfiction Writing
Advanced workshop in the writing of creative nonfiction. This is a class for serious students of creative writing. Admission is by portfolio submission to the instructor.
Prereq: 2265 and permission of instructor. Repeatable to a maximum of 9 cr hrs.

4569 Digital Media and English Studies
Critical examination of the intersections between specific areas or problems in English studies and the emergent technologies used to acquire and create knowledge in the discipline. Prereq: 10 qtr cr hrs or 6 cr hrs of English at 2000-3000 level, or permission of instructor. 5 qtr cr hrs in 367 or 3 cr hrs in 2367 in any subject is acceptable towards the 6 cr hrs. Not open to students with 10 qtr cr hrs for 569. Repeatable to a maximum of 6 cr hrs.

4571 Special Topics in English Linguistics
Special topics vary, including American English; the sociology of American dialects; language and style.
Prereq: 6 cr hrs of English at 2000-3000 level, or permission of instructor. 3 cr hrs in 2367 in any subject is acceptable towards the 6 cr hrs. Repeatable to a maximum of 6 cr hrs.

4572 English Grammar and Usage
An examination of terminology and structures traditionally associated with the study of English grammar and usage rules, especially problematic ones, governing edited written American English.
Prereq: 6 cr hrs of English at 2000-3000 level, or permission of instructor. 3 cr hrs in 2367 in any subject is acceptable towards the 6 cr hrs.
4576H Special Topics in Film

Examination of particular topics, themes, genres, or movements in cinema; topics may include particular directors (Orson Welles), periods (The Sixties), genres (horror).

Prereq: 10 qtr cr hrs or 6 cr hrs of English at 2000-3000 level, or permission of instructor. 5 qtr cr hrs or 3 cr hrs in 2367 in any subject is acceptable towards the 6 cr hrs. Not open to students with credit for 4578H.

Repeatable to a maximum of 9 cr hrs.

4580 Special Topics in LGBTQ+ Literatures and Cultures

Focuses on themes and issues in LGBTQ+ literature and culture.

Prereq: 10 qtr cr hrs or 6 cr hrs of English at 2000-3000 level, or permission of instructor. 5 qtr cr hrs or 3 cr hrs in 2367 in any subject is acceptable towards the 6 cr hrs. Not open to students with 15 qtr cr hrs for 578 or 9 sem cr hrs for 4578 or 4578H. Repeatable to a maximum of 9 cr hrs.

4581 Special Topics in U.S. Ethnic Literatures

Study of selected issues or forms in U.S. ethnic literatures and cultures. Topic varies. Examples: Native American autobiography, Asian American poetry, Latino/a novel.

Prereq: 10 qtr cr hrs or 6 cr hrs of English at 2000-3000 level, or permission of instructor. 5 qtr cr hrs or 3 cr hrs in 2367 in any subject is acceptable towards the 6 cr hrs. Not open to students with 15 qtr cr hrs for 581 or 6 sem cr hrs for 4581. Repeatable to a maximum of 6 cr hrs.

4582 Special Topics in African-American Literature

Focuses on themes in African American literature. Topic varies. Examples: Neo-slave narratives, the Harlem Renaissance, literature by African-American women.

Prereq: 5 qtr cr hrs or 6 cr hrs of English at 2000-3000 level, or permission of instructor. 5 qtr cr hrs or 3 cr hrs in 2367 in any subject is acceptable towards the 6 cr hrs. Not open to students with 10 qtr cr hrs or 6 sem cr hrs of 4582 (582) or AfAmASt 4582 (582). Repeatable to a maximum of 6 cr hrs. Cross-listed in AfAmASt.

4583 Special Topics in World Literature in English

Study of literatures written in English and produced outside of the U.S. and Britain; topics may include colonial/postcolonial writing, regional literature, theoretical and historical approaches, genres.

Prereq: 10 qtr cr hrs or 6 cr hrs of English at 2000-3000 level, or permission of instructor. 5 qtr cr hrs or 3 cr hrs in 2367 in any subject is acceptable towards the 6 cr hrs. Not open to students with 10 qtr cr hrs for 583. Repeatable to a maximum of 6 cr hrs.

4584 Special Topics in Literacy Studies

Foundational study of the history, theory, and issues of a special topic in literacy studies; topics may include race, popular culture, gender, or globalization.

Prereq: 10 qtr cr hrs or 6 cr hrs of English at 2000-3000 level, or permission of instructor. 5 qtr cr hrs or 3 cr hrs in 2367 in any subject is acceptable towards the 6 cr hrs. Not open to students with 15 qtr cr hrs or 9 sem cr hrs of 4586 (586.01) or CompStd 4564 (586.01). Repeatable to a maximum of 9 cr hrs. Cross-listed in CompStd 4564.

4586 Studies in American Indian Literature and Culture

Focused study of a topic in American Indian literary and cultural studies.

Prereq: 1110 (110) or equiv. Not open to students with 10 qtr cr hrs of 586. Repeatable to a maximum of 6 cr hrs.

4587 Studies in Asian American Literature and Culture

Focused on problems and themes in Asian American literature and culture from the late nineteenth century to the present. Topic varies. Examples: Asian American Literature and Popular Culture; Empire and Sexuality in Asian American Literature.

Prereq: 1110 (110) or equiv. Not open to students with 10 qtr cr hrs or 6 sem cr hrs for English 4587 (587) or CompStd 4503 (483). Repeatable to a maximum of 6 cr hrs. Cross-listed in CompStd 4503.

4588 Studies in Latino/a Literature and Culture

Focused study of a topic in Latino/a literary and cultural studies. Novels, short stories, plays, poetry, graphic novels, and films by and about US Latinos in their specific social and historical contexts.

Prereq: 1110 (110) or equiv. Not open to students with 10 qtr cr hrs or 6 sem cr hrs for English 4588 (588) or CompStd 4804 (544). Repeatable to a maximum of 6 cr hrs. Cross-listed in CompStd 4804.

4589 Studying the Margins: Language, Power, and Culture

English 4589 will provide students a chance to hear the voices and study the cultural expressions of those groups that have been systematically underrepresented. Students will study the marginalization and subjugation of particular groups in the context of historical, ideological, and political forces, paying due attention to power relations within the nation-state.

Prereq: 6 cr hrs or 10 qtr cr hrs of English at the 2000-3000 level. Additionally, 3 cr hrs of 2367 or 5 qtr cr hrs of 2367 in any subject is acceptable towards the total hours; or permission of instructor.

4590.01H The Middle Ages

Intensive study of the middle ages.

Prereq: Honors standing, or permission of instructor. Not open to students with credit for 590.02H.

4590.02H The Renaissance

Intensive study of the Renaissance.

Prereq: Honors standing, or permission of instructor. Not open to students with credit for 590.02H.
4590.03H The Long Eighteenth Century U 3
An intensive study of major British authors and works 1660-1820, their role in literary history, and the theory/criticism that illuminates them. Prereq: Honors standing, or permission of instructor. Not open to students with credit for 590.03H.

4590.04H Romanticism U 3
Intensive study of Romanticism. Prereq: Honors standing, or permission of instructor. Not open to students with credit for 590.04H.

4590.05H The Later 19th Century U 3
Intensive study of the later 19th century. Prereq: Honors standing, or permission of instructor. Not open to students with credit for 590.05H.

4590.06H The Modern Period U 3
Intensive study of The Modern Period. Prereq: Honors standing, or permission of the instructor. Not open to students with credit for 590.06H.

4590.07H Literature in English after 1945 U 3
Intensive study of literature in English after 1945. Prereq: Honors standing, or permission of instructor. Not open to students with credit for 590.07H.

4590.08H U.S. and Colonial Literature U 3
Intensive study of a topic in colonial and U.S. literature. Prereq: Honors standing, or permission of instructor. Not open to students with credit for 590.08H.

4591.01H Special Topics in the Study of Creative Writing U 3
A seminar in literary forms and themes, with a significant creative writing component. Prereq: Honors standing, and 2265 (265) or 2266 (266) or 2268 (268); or permission of instructor. Not open to students with 10 qr cr hrs for 591.01H. Repeatable to a maximum of 6 cr hrs.

4591.02H Special Topics in the Study of Rhetoric U 3
Study of rhetorical theories and practices through examination of social communities, texts, movements, and periods both past and present. Prereq: Honors standing, and 10 qr cr hrs or 6 cr hrs of English at 2000-3000 level, or permission of instructor. Not open to students with 10 qr cr hrs for 591.02H. Repeatable to a maximum of 6 cr hrs.

4592 Special Topics in Women in Literature and Culture U 3
Using feminist perspectives, students will learn to analyze literature and other cultural works (film, television, digital media) written by or about women. Time period and topic vary. Prereq: 6 cr hrs of English at 2000-3000 level, or permission of instructor. 3 cr hrs in 2367 in any subject is acceptable towards the 6 cr hrs. Repeatable to a maximum of 6 cr hrs.

4595 Literature and Law U 3
Exploration of some fundamental questions underlying the cultural representation of legal order, particularly the nature of legal authority and of individual resistance to it. Prereq: 10 qr cr hrs or 6 cr hrs of English at 2000-3000 level, or permission of instructor. 5 qr cr hrs in 367 or 3 cr hrs in 2367 in any subject is acceptable towards the 6 cr hrs. Not open to students with credit for 593.

4597.01 The Disability Experience in the Contemporary World U 3
Global, national, and local issues of disability in the contemporary world; interdisciplinary approach combines historical, literary, philosophical, scientific, and service-oriented analysis of experience of disability. Prereq: 1110.01 (110.01) or equiv, and Jr or Sr standing. Not open to students with credit for 597.01. GE cross-disciplinary seminar course.

4597.02 American Regional Cultures in Transition U 3
Explores American regional cultures to consider the relationship between tradition and change, how to compare cultures, and how politics and economics shape conceptions of culture. Folklore Minor course. Prereq: 1110.01 (110.01) or equiv, and Jr or Sr standing. Not open to students with credit for 597.02. GE cross-disciplinary seminar course.

4597.04H Interdisciplinary Approaches to Narrative in the Contemporary World U 3
Interdisciplinary study of narrative's role in contemporary culture. Prereq: Honors standing, and 1110.01 (110.01) or equiv, and Jr or Sr standing; or permission of instructor. Not open to students with credit for 597.04H. GE cross-disciplinary seminar course.

4800 Story Development for Film and Television U 3
In this course, students will harness their pre-existing critical thinking skills and historical knowledge to develop a personal statement-of-purpose that enables them to generate and refine their own original film and television concepts for subsequent production projects. Prereq: Permission of instructor. Not available for students with credit for FilmStd 4194 (Au14) or FilmStd 4803. Cross-listed in FilmStd.

4998 Undergraduate Research in English U 1 - 9
Undergraduate research in variable topics; independent study. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

4998H Honors Undergraduate Research in English U 1 - 9
Undergraduate research in variable topics; independent study. Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

4999 Undergraduate Research: Thesis U 1 - 18
A program of reading arranged for each student, with individual conferences, reports, paper and/or thesis. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs or 18 completions. This course is graded S/U.

4999H Honors Research U 1 - 18
A program of reading arranged for each student, with individual conferences, reports, and honors thesis. Open only to candidates for distinction in English. Prereq: Honors standing, and Sr standing, and permission of the professor under whose supervision the work is to be completed. Repeatable to a maximum of 18 cr hrs or 18 completions. This course is graded S/U.

5189S Comparative Studies Field School U 3
Introduction to ethnographic field methods (participant-observation, writing field notes, photography, interviewing), archiving, and public humanities. An introduction to fieldwork is followed by a field experience (where students will reside together in local housing) followed by accessioning, exhibition planning and reflection. Maximum credit hours include those for CompStd 5189S.

5191 Internship in English Studies U 1 - 3
Students may receive credit for internships across a wide variety of career fields including, but not limited to, the arts and nonprofit administration; creative, business, and technical writing; communications, marketing and public relations; consulting; education; human resources; law and politics; media production; publishing; sales; social services and counseling; and technology services.

4592 Special Topics in Women in Literature and Culture U 3
Using feminist perspectives, students will learn to analyze literature and other cultural works (film, television, digital media) written by or about women. Time period and topic vary. Prereq: 6 cr hrs of English at 2000-3000 level, or permission of instructor. 3 cr hrs in 2367 in any subject is acceptable towards the 6 cr hrs. Repeatable to a maximum of 6 cr hrs.

5193 Individual Studies U 1 - 3
Students may register for individual directed study under this number for work not normally offered in courses.

5194 Group Studies U 1 - 3
Group studies. Prereq: Permission of instructor. Not open to students with 10 qr cr hrs for 693. Repeatable to a maximum of 9 cr hrs or 9 completions.

5612 The History of the Book in Modernity U 3
This course explores books and other printed matter as material objects rather than neutral containers for texts, literally judging books by their covers, examining production, design, and materials as well as the myriad uses to which books have been put in the world over the past two centuries. The course is embedded in the collections of OSU's Rare Books and Manuscripts Library.

5662.02 Literary Publishing U 3
Theory and practice of editing and publishing literature. Prereq: 2265 (265), 2266 (266), or 2268 (268), and permission of instructor. Not open to students with credit for 5662 (662). This course is graded S/U.

5664 Studies in Graphic Narrative U 3
Introduction to advanced study in graphic narrative and theory; thematic topics include the contemporary graphic novel, graphic autobiography, the history of comics, and comics journalism.

5710.01 Introduction to Old English Language and Literature U 3
Introduction to Old English language, followed by selected readings in Anglo-Saxon prose and verse texts. Prereq: 5 cr hrs at the 3000, 4000, or 5000 level, or equiv work in allied departments, or permission of instructor. Not open to students with credit for 5710.01 (710) or 5710.02.

5710.02 Introduction to Old English Language and Literature U 3
Introduction to Old English language, followed by selected readings in Anglo-Saxon prose and verse texts.

4590.03H The Long Eighteenth Century U 3
An intensive study of major British authors and works 1660-1820, their role in literary history, and the theory/criticism that illuminates them. Prereq: Honors standing, or permission of instructor. Not open to students with credit for 590.03H.

4590.04H Romanticism U 3
Intensive study of Romanticism. Prereq: Honors standing, or permission of instructor. Not open to students with credit for 590.04H.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites/Restrictions</th>
</tr>
</thead>
<tbody>
<tr>
<td>5720.01</td>
<td>Graduate Studies in Shakespeare</td>
<td>U G 3</td>
<td>Study of topics, themes, and problems in advanced studies of Shakespeare. Prereq: 10 qtr cr hrs of 300, 400, or 500 level, or 9 sem cr hrs of 3000, 4000, or 5000 level, or Grad standing, or permission of instructor. Not open to students with 5 qtr cr hrs for 720 or 6 sem cr hrs for 5720.01 or 5720.02. Repeatable to a maximum of 6 cr hrs.</td>
</tr>
<tr>
<td>5720.02</td>
<td>Graduate Studies in Shakespeare</td>
<td>U G 3</td>
<td>Study of topics, themes, and problems in advanced studies of Shakespeare. Prereq: 10 qtr cr hrs at the 300, 400, or 500 level, or 9 sem cr hrs at the 3000, 4000, or 5000 level, or Grad standing, or permission of instructor. Not open to students with more than 5 qtr cr hrs for 720 or 6 sem cr hrs for 5720.01 or 5720.02. Repeatable to a maximum of 6 cr hrs.</td>
</tr>
<tr>
<td>5721.01</td>
<td>Graduate Studies in Renaissance Drama</td>
<td>U G 3</td>
<td>Study of topics, themes, and problems in advanced studies of English drama from the early sixteenth century to 1660. Prereq: 10 qtr cr hrs at the 300, 400, or 500 level, or 9 sem cr hrs at the 3000, 4000, or 5000 level, or Grad standing, or permission of instructor. Not open to students with more than 5 qtr cr hrs for 720 or 6 sem cr hrs for 5721.01 or 5721.02. Repeatable to a maximum of 6 cr hrs.</td>
</tr>
<tr>
<td>5721.02</td>
<td>Graduate Studies in Renaissance Drama</td>
<td>U G 3</td>
<td>Study of topics, themes, and problems in advanced studies of English drama from the early sixteenth century to 1660. Prereq: Grad standing, or permission of instructor. Not open to students with more than 5 qtr cr hrs for 720 or 6 sem cr hrs for 5721.01 or 5721.02. Repeatable to a maximum of 6 cr hrs.</td>
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<tr>
<td>5722.01</td>
<td>Graduate Studies in Renaissance Poetry</td>
<td>U G 3</td>
<td>Study of topics, themes, and problems in advanced studies of English poetry from the early sixteenth century to 1660. Prereq: 10 qtr cr hrs in English at the 300, 400, or 500 level, or 9 sem cr hrs at the 3000, 4000, or 5000 level, or permission of instructor. Not open to students with 6 sem cr hrs for 5722.01 or 5722.02. Repeatable to a maximum of 6 cr hrs.</td>
</tr>
<tr>
<td>5722.02</td>
<td>Graduate Studies in Renaissance Poetry</td>
<td>U G 3</td>
<td>Study of topics, themes, and problems in advanced studies of English poetry from the early sixteenth century to 1660. Prereq: Grad standing, or permission of instructor. Not open to students with 6 cr hrs for 5722.01 or 5722.02. Repeatable to a maximum of 6 cr hrs.</td>
</tr>
<tr>
<td>5723.01</td>
<td>Graduate Studies in Renaissance Literature and Culture</td>
<td>U G 3</td>
<td>Study of topics, themes, and problems in advanced studies of the literature and culture of sixteenth- and seventeenth-century England. Prereq: 10 qtr cr hrs in English at the 300, 400, or 500 level, or 9 sem cr hrs at the 3000, 4000, or 5000 level, or Grad standing, or permission of instructor. Not open to students with 6 qtr cr hrs for 5723.01 or 5723.02. Repeatable to a maximum of 6 cr hrs.</td>
</tr>
<tr>
<td>5723.02</td>
<td>Graduate Studies in Renaissance Literature and Culture</td>
<td>U G 3</td>
<td>Study of topics, themes, and problems in advanced studies of the literature and culture of sixteenth- and seventeenth-century England. Prereq: Grad standing, or permission of instructor. Not open to students with 6 qtr cr hrs for 5723.01 or 5723.02. Repeatable to a maximum of 6 cr hrs.</td>
</tr>
<tr>
<td>5797.00</td>
<td>Study at a Foreign Institution</td>
<td>U G 1 - 27</td>
<td>An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Arranged. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs. Prereq: Permission of instructor. Not open to students with 45 qtr cr hrs for 6797.01 or 5797.02. Repeatable to a maximum of 27 cr hrs or 27 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>5804.00</td>
<td>Analyzing Language in Social Media</td>
<td>U G 3</td>
<td>Course gives students experience analyzing language in social media. It covers theoretical issues arising in digital communication and provides hands-on practice at computational data analysis, applicable across fields. Students gain an understanding of the sociolinguistic dynamics of online communication and the technical skills to conduct research on them. Team-taught w/ faculty in Linguistics. Prereq: Not open to students with credit for Ling 5804. Cross-listed in Ling.</td>
</tr>
<tr>
<td>5892.00</td>
<td>Workshop</td>
<td>U G 1 - 3</td>
<td>Workshop Prereq: Permission of instructor. Not open to students with 12 cr hrs for 5892 (692). Repeatable to a maximum of 12 cr hrs or 12 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>6194.00</td>
<td>Group Studies</td>
<td>G 1 - 3</td>
<td>Group Studies Prereq: Grad standing, or permission of instructor. Not open to students with 9 sem cr hrs or 15 qtr cr hrs for 6194 (684). Repeatable to a maximum of 9 cr hrs or 9 completions.</td>
</tr>
<tr>
<td>6410.00</td>
<td>Introduction to Graduate Study in Medical Humanities and Social Sciences</td>
<td>G 3</td>
<td>Study of medicine from the perspective of the humanities and social sciences; emphasis on how these perspectives complicate an understanding of medicine as pure science. Prereq: Grad standing.</td>
</tr>
</tbody>
</table>
6750.02 Introduction to Graduate Study in Literacy  
Introduction to advanced study of the development of reading and writing, the study of literacy; attention to historical, theoretical, ideological, and technological issues and change. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 6750.01 (750) or 6750.02. This course is graded S/U.

6751.01 Intro to Graduate Study in Folklore I: The Philology of the Vernacular  
Introduction to the canonical folklore genres and the history of folklore as a discipline. Why and how do we examine the vernacular? Folklore GIS course. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 6751.11, 770.01, or CompStd 6750.01 (770.01). Cross-listed in CompStd 6750.01.

6751.02 Intro to Graduate Study in Folklore II: Fieldwork and the Ethnography of Communication  
Intro to fieldwork & ethnology in humanities; interviewing, participant observation, ethics, ethnographic representation. Ethnography of communication as an approach to community-based expressive forms. Folklore GIS course. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 770.02, 770.03, 6751.22, CompStd 770.02, 770.03, or 6750.02. Cross-listed in CompStd 6750.02.

6751.11 Intro to Graduate Study in Folklore III: The Philology of the Vernacular  
Introduction to the canonical folklore genres and the history of folklore as a discipline. Why and how do we examine the vernacular? Prereq: Grad standing, or permission of instructor. Not open to students with credit for 6751.01 (770.01) or CompStd 6750.01 (770.01). This course is graded S/U.

6751.22 Intro to Graduate Study in Folklore II: Fieldwork and the Ethnography of Communication  
Introduction to fieldwork and ethnology in the humanities: interviewing, participant observation, ethics, ethnographic representation. The ethnography of communication as an approach to community-based expressive forms. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 770.02, 770.03, 6751.02, CompStd 770.02, 770.03, or 6750.02. This course is graded S/U.

6755.01 Introduction to Graduate Study in American Literature, Origins to 1840  
Introduction to advanced study and current scholarship and criticism in early American literature. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 6755.01 (755) or 6755.02.

6755.02 Introduction to Graduate Study in American Literature, Origins to 1840  
Introduction to advanced study and current scholarship and criticism in early American literature. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 6755.01 (755) or 6755.02. This course is graded S/U.

6756.01 Introduction to Graduate Study in American Literature, 1840-1914  
Introduction to advanced study and current scholarship and criticism in American literature, 1840-1914. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 6756.01 (756) or 6756.02.

6756.02 Introduction to Graduate Study in American Literature, 1840-1914  
Introduction to advanced study and current scholarship and criticism in American literature, 1840-1914. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 6756.01 (756) or 6756.02. This course is graded S/U.

6757.01 Introduction to Graduate Study in African-American Literature, 1746-1900  
A survey of creative texts and critical interpretations representing and reflecting black culture and literary expression in the United States from 1746 to 1900. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 6757.01 (757.01) or AfAmASt 6757.01 (757.01). This course is graded S/U.

6757.22 Introduction to Graduate Study in African-American Literature, 1900 to Present  
A survey of creative texts and critical interpretations representing and reflecting black culture and literary expression in the United States from 1900 to the present. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 6757.22 (757.02) or AfAmASt 6757.02 (757.02). This course is graded S/U.

6758.01 Introduction to Graduate Study in U.S. Ethnic Literature and Culture  
Introduction to graduate study of representative literature and culture of a U.S. ethnic group, such as American-Indian, Jewish-American, Latino/a. Prereq: Grad standing, or permission of instructor. Not open to students with 6 sem cr hrs or 10 qtr cr hrs for 6758.01 (758) or 6758.02. Repeatable to a maximum of 6 cr hrs.

6758.02 Introduction to Graduate Study in U.S. Ethnic Literature and Culture  
Introduction to graduate study of representative literature and culture of a U.S. ethnic group, such as American-Indian, Jewish-American, Latino/a. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 6758.02. This course is graded S/U.

6760.01 Introduction to Graduate Study in Postcolonial Literature and Theory  
Introduction to graduate-level study of representative examples of the literary, cultural, and theoretical texts that inform postcolonial studies. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 760, 6760.01, or 6760.02.

6760.02 Introduction to Graduate Study in Postcolonial Literature and Theory  
Introduction to graduate-level study of representative examples of the literary, cultural and theoretical texts that inform postcolonial studies. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 6760.02. This course is graded S/U.

6761.01 Introduction to Graduate Study in Narrative and Narrative Theory  
Study of narrative in its different manifestations, e.g., novel, autobiography, film, legal testimony, and of theories of its form and significance. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 6761.02 or 761.

6761.02 Introduction to Graduate Study in Narrative and Narrative Theory  
Study of narrative in its different manifestations, e.g., novel, autobiography, film, legal testimony, and of theories of its form and significance. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 6761.02 or 761. This course is graded S/U.

6763.01 Graduate Workshop in Poetry  
A graduate-level workshop in the writing of poetry. Prereq: MFA standing, or permission of instructor. Not open to students with 20 qtr hrs for 763 or equivalent. Repeatable to a maximum of 12 cr hrs.

6763.02 Graduate Workshop in Poetry  
A graduate-level workshop in the writing of poetry for MFA students in fiction or creative non-fiction with limited experience as poets. Prereq: Grad standing, or permission of instructor. Not open to students with 20 qtr hrs for 763 or equivalent. Repeatable to a maximum of 12 cr hrs.

6764 Graduate Workshop in Screenwriting  
Students with expertise in fiction- or creative nonfiction-writing or poetry will learn the art and craft of screenwriting and complete their first full-length screenplays. Prereq: English MFA standing, or permission of instructor. Repeatable to a maximum of 6 cr hrs.

6765.01 Graduate Workshop in Fiction  
A graduate-level workshop in the writing of fiction. Prereq: MFA standing, or permission of instructor. Not open to students with 20 qtr hrs for 765 or equivalent. Repeatable to a maximum of 12 cr hrs.

6765.02 Graduate Workshop in Fiction  
A graduate-level workshop in the writing of fiction for MFA students in poetry or creative non-fiction with limited experience as fiction writers. Prereq: Grad standing, or permission of instructor. Not open to students with 20 qtr hrs for 765 or equivalent. Repeatable to a maximum of 12 cr hrs.

6766.01 Introduction to Graduate Study in 20th Century Literature, 1900-1945  
Introduction to advanced study and current scholarship and criticism in literature written in English 1900-1945. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 6766.02 or 766.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Panel</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6766.02</td>
<td>Introduction to Graduate Study in 20th Century Literature, 1900-1945</td>
<td>G</td>
<td>3</td>
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<tr>
<td>6767.01</td>
<td>Introduction to Graduate Study in 20th Century Literature, 1945-Present</td>
<td>G</td>
<td>3</td>
</tr>
<tr>
<td>6767.02</td>
<td>Introduction to Graduate Study in 20th Century Literature, 1945-Present</td>
<td>G</td>
<td>3</td>
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<tr>
<td>6768</td>
<td>Graduate Workshop in Creative Nonfiction</td>
<td>G</td>
<td>3</td>
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<tr>
<td>6769</td>
<td>Graduate Workshop in Creative Writing (Special Topics)</td>
<td>G</td>
<td>3</td>
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<tr>
<td>6767.02</td>
<td>From 1900 to the Contemporary Period</td>
<td>G</td>
<td>3</td>
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<tr>
<td>6767.22</td>
<td>From 1900 to the Contemporary Period</td>
<td>G</td>
<td>3</td>
</tr>
<tr>
<td>6778.01</td>
<td>Introduction to Graduate Study in Film and Film Theory</td>
<td>G</td>
<td>3</td>
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<tr>
<td>6778.02</td>
<td>Introduction to Graduate Study in Film and Film Theory</td>
<td>G</td>
<td>3</td>
</tr>
<tr>
<td>6779.01</td>
<td>Introduction to Graduate Study in Rhetoric: Classical to Early Renaissance</td>
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<td>3</td>
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<td>6779.02</td>
<td>Introduction to Graduate Study in Rhetoric: Renaissance to 20th Century</td>
<td>G</td>
<td>3</td>
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<td>6779.11</td>
<td>Introduction to Graduate Study in Rhetoric: Classical to Early Renaissance</td>
<td>G</td>
<td>3</td>
</tr>
<tr>
<td>6779.22</td>
<td>Introduction to Graduate Study in Rhetoric: Renaissance to 20th Century</td>
<td>G</td>
<td>3</td>
</tr>
<tr>
<td>6780.01</td>
<td>Current Theory and Practice in the Teaching of Writing</td>
<td>G</td>
<td>3</td>
</tr>
<tr>
<td>6781</td>
<td>Introduction to the Teaching of First-Year English</td>
<td>G</td>
<td>3</td>
</tr>
<tr>
<td>6788.01</td>
<td>Studies in the Theory and Practice of Imaginative Writing</td>
<td>G</td>
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<tr>
<td>6789.01</td>
<td>Introduction to Graduate Study in Digital Media</td>
<td>G</td>
<td>3</td>
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<tr>
<td>6789.02</td>
<td>Introduction to Graduate Study in Digital Media</td>
<td>G</td>
<td>3</td>
</tr>
<tr>
<td>6798.01</td>
<td>Introduction to Research Methods in Rhetoric and Composition</td>
<td>G</td>
<td>3</td>
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<tr>
<td>6798.02</td>
<td>Introduction to Research Methods in Rhetoric and Composition</td>
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<td>6799</td>
<td>Graduate Research in English</td>
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<tr>
<td>7350.01</td>
<td>Theorizing Folklore I: Tradition and Transmission</td>
<td>G</td>
<td>3</td>
</tr>
<tr>
<td>7350.02</td>
<td>Theorizing Folklore II: The Ethnography of Performance</td>
<td>G</td>
<td>3</td>
</tr>
<tr>
<td>7350.03</td>
<td>Theorizing Folklore III: Differentiation, Identification, and the Folk</td>
<td>G</td>
<td>3</td>
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<tr>
<td>7350.11</td>
<td>Theorizing Folklore I: Tradition and Transmission</td>
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<td>3</td>
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<tr>
<td>7350.22</td>
<td>Theorizing Folklore II: The Ethnography of Performance</td>
<td>G</td>
<td>3</td>
</tr>
<tr>
<td>7350.3</td>
<td>Theorizing Folklore III: Differentiation, Identification, and the Folk</td>
<td>G</td>
<td>3</td>
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</tbody>
</table>

Modern theories of composition; topics include: invention, style, sentence combining, evaluation, and the composing process.

Prereq: Grad standing, or permission of instructor. Not open to students with credit for 6760.01 (870) or 6760.02. This course is graded S/U.

Modern theories of composition; topics include: invention, style, sentence combining, evaluation, and the composing process.

Prereq: Grad standing, or permission of instructor. Not open to students with credit for 6760.01 (870) or 6760.02. This course is graded S/U.

Introduction to Graduate Study in Digital Media enjoys the use of computer technologies and multiple media to make meaning, represent, and analyze information, teach, and conduct research.

Prereq: Grad standing, or permission of instructor. Not open to students with credit for 6769.01 (789) or 6769.02.

**Modern theories of composition; topics include: invention, style, sentence combining, evaluation, and the composing process.**

Prereq: Grad standing, or permission of instructor. Not open to students with credit for 6760.01 (870) or 6760.02. This course is graded S/U.
7840.01 Seminar in English Romantic Literature G 3
Literary romanticism in relation to contemporary intellectual and political movements; topic varies from year to year.
Prereq: Grad standing, or permission of instructor. Not open to students with 15 qtr cr hrs for 840 or 9 sem cr hrs for 7840.01 or 7840.02. Repeatable to a maximum of 9 cr hrs.

7840.02 Seminar in English Romantic Literature G 3
Literary romanticism in relation to contemporary intellectual and political movements; topic varies from year to year.
Prereq: Grad standing, or permission of instructor. Not open to students with 15 qtr cr hrs for 840 or 9 sem cr hrs for 7840.01 or 7840.02. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

7844.01 Seminar in Victorian Literature G 3
Topics include: Victorian poetry; nineteenth-century non-fictional prose; nineteenth-century novels.
Prereq: Grad standing, or permission of instructor. Not open to students with 15 qtr cr hrs for 840 or 9 sem cr hrs for 7844.01 or 7844.02. Repeatable to a maximum of 9 cr hrs.

7844.02 Seminar in Victorian Literature G 3
Topics include: Victorian poetry; nineteenth-century non-fictional prose; nineteenth-century novels.
Prereq: Grad standing, or permission of instructor. Not open to students with 15 qtr cr hrs for 840 or 9 sem cr hrs for 7844.01. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

7850.01 Seminar in U.S. Literatures before 1900 G 3
Topics include: American authors (Poe, Melville); history of genres, forms, and media (poetry, U.S. serial fiction); intensive study of "periods" (the early Republic, the 1890s).
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 850. Repeatable to a maximum of 12 cr hrs.

7850.02 Seminar in U.S. Literatures before 1900 G 3
Topics include: American authors (Poe, Melville); history of genres, forms, and media (poetry, U.S. serial fiction); intensive study of "periods" (the early Republic, the 1890s).
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 850. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

7851.01 Seminar in Critical Approaches to Black Literatures G 3
A close reading of major literary critical discourses that have shaped and determined the course of black literary production in Africa, North America, and the Caribbean.
Prereq: A course in AfAmASt literature, or permission of instructor. Not open to students with 6 sem hrs of 7851.01 or 7851.02, or 10 qtr hrs of 851, or AfAmASt 7851 (851). Repeatable to a maximum of 6 cr hrs. Cross-listed in AfAmASt 7851.

7851.02 Seminar in Critical Approaches to Black Literatures G 3
A close reading of major literary critical discourses that have shaped and determined the course of black literary production in Africa, North America, and the Caribbean.
Prereq: A course in AfAmASt literature, or permission of instructor. Not open to students with 6 sem hrs of 7851.01 or 7851.02, or 10 qtr hrs of 851, or AfAmASt 7851 (851). Repeatable to a maximum of 6 cr hrs. This course is graded S/U. Cross-listed in AfAmASt 7851.

7858.01 Seminar in U.S. Ethnic Literatures and Culture G 3
Advanced work in U.S. ethnic literatures and cultures through study of a specific issue, theme, or problem of central concern to the field. Topics vary.
Prereq: Grad standing, or permission of instructor. Not open to students with 6 sem hrs of 7858.01 or 7858.02, or 10 qtr hrs of 858. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

7860.01 Seminar in 20th Century British and/or American Literature G 3
Problems, forms, and themes in twentieth-century British and/or American literature; study of particular twentieth-century British and/or American writers.
Prereq: Grad standing, or permission of instructor. Not open to students with 15 qtr cr hrs for 860 or 9 sem cr hrs for 7860.01 or 7860.02. Repeatable to a maximum of 9 qtr hrs.

7860.02 Seminar in 20th Century British and/or American Literature G 3
Problems, forms, and themes in twentieth-century British and/or American literature; study of particular twentieth-century British and/or American writers.
Prereq: Grad standing, or permission of instructor. Not open to students with 15 qtr cr hrs for 860 or 9 sem cr hrs for 7860.01 or 7860.02. Repeatable to a maximum of 9 qtr hrs. This course is graded S/U.

7861.01 Studies in Narrative and Narrative Theory G 3
Seminar in narrative theory and practice; focus on an approach (e.g., feminist narratology), a problem (ethics), or subcategory of narrative (the graphic novel).
Prereq: Grad standing, or permission of instructor. Not open to students with 20 qtr cr hrs for 881 or 12 sem cr hrs for 7861.01 or 7861.02. Repeatable to a maximum of 12 cr hrs.
781.02 Studies in Narrative and Narrative Theory  
Seminar in narrative theory and practice; focus on an approach (e.g., feminist narratology), a problem (ethics), or subcategory of narrative (the graphic novel).
Prereq: Grad standing, or permission of instructor. Not open to students with 20 qtr hrs for 881 or 12 sem cr hrs for 7861.01 or 7861.02. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

7864.01 Postcolonial/Transnational Literatures  
Topics include postcolonial and transnational literature in English; theories of colonial, postcolonial, and transnational literature and culture.
Prereq: Grad standing, or permission of instructor. Not open to students with 15 qtr cr hrs for 864 or 9 sem cr hrs for 7864.01 or 7864.02. Repeatable to a maximum of 9 cr hrs.

7864.02 Postcolonial/Transnational Literatures  
Topics include postcolonial and transnational literature in English; theories of colonial, postcolonial, and transnational literature and culture.
Prereq: Grad standing, or permission of instructor. Not open to students with 15 qtr cr hrs for 864 or 9 sem cr hrs for 7864.01 or 7864.02. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

7871.01 Seminar in the Forms of Literature  
A graduate seminar in the forms of poetry, fiction, and/or creative nonfiction.
Prereq: Grad standing, or permission of instructor. Not open to students with 20 qtr hrs for 7871, or equiv. Repeatable to a maximum of 12 cr hrs.

7871.02 Seminar in the Forms of Literature  
A graduate seminar in the forms of poetry, fiction, and/or creative nonfiction.
Prereq: Grad standing, or permission of instructor. Not open to students with 20 qtr hrs for 871 or equiv. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

7872.01 Studies in the English Language  
Advanced English language study; topics vary.
Prereq: Not open to students with 6 sem cr hrs for 7872.01 or 7872.02. Repeatable to a maximum of 6 cr hrs.

7872.02 Studies in the English Language  
Advanced English language study; topics vary.
Prereq: Not open to students with 6 sem cr hrs for 7872.01 or 7872.02. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

7876.01 Seminar in Critical Theory  
A review of theory and practice in some of the principal forms of literary analysis; focus on a single theoretical movement or a single critical problem.
Prereq: Grad standing, or permission of instructor. Not open to students with 10 qtr cr hrs for 876 or 6 sem cr hrs for 7876.01 or 7876.02. Repeatable to a maximum of 6 cr hrs.

7876.02 Seminar in Critical Theory  
A review of theory and practice in some of the principal forms of literary analysis; focus on a single theoretical movement or a single critical problem.
Prereq: Grad standing, or permission of instructor. Not open to students with 10 qtr cr hrs for 876 or 6 sem cr hrs for 7876.01 or 7876.02. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

7878.01 Seminar in Film & Media Studies  
An intensive study of selected issues, themes, and forms in Film & Media Studies.
Prereq: Grad standing, or permission of instructor. Not open to students with 10 qtr cr hrs for 878 or 6 sem cr hrs for 7878.01 or 7878.02. Repeatable to a maximum of 6 cr hrs.

7878.02 Seminar in Film & Media Studies  
An intensive study of selected issues, themes, and forms in Film & Media Studies.
Prereq: Grad standing, or permission of instructor. Not open to students with 10 qtr cr hrs for 878 or 6 sem cr hrs for 7878.01 or 7878.02. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

7879.01 Seminar in Rhetoric  
Rhetoric of a particular period; major figures in rhetoric, rhetorical analysis of literature.
Prereq: Grad standing, or permission of instructor. Not open to students with 10 qtr cr hrs for 879 or 6 sem cr hrs for 7879.01 or 7879.02. Repeatable to a maximum of 6 cr hrs.

7879.02 Seminar in Rhetoric  
Rhetoric of a particular period; major figures in rhetoric, rhetorical analysis of literature.
Prereq: Grad standing, or permission of instructor. Not open to students with 10 qtr cr hrs for 879 or 6 sem cr hrs for 7879.01 or 7879.02. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

7880.01 Seminar in Composition  
Invention; the composing process and revision; evaluating and responding to writing; discourse analysis.
Prereq: Grad standing or permission of instructor. Not open to students with 10 qtr cr hrs for 880 or 6 sem cr hrs for 7880.01 or 7880.02. Repeatable to a maximum of 6 cr hrs.

7880.02 Seminar in Composition  
Invention; the composing process and revision; evaluating and responding to writing; discourse analysis.
Prereq: Grad standing or permission of instructor. Not open to students with 10 qtr cr hrs for 880 or 6 sem cr hrs for 7880.01 or 7880.02. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

7881.02 Teaching Basic Writing  
Theory and practice in the teaching of basic writing.
Prereq: 781 or equiv., or permission of instructor. Not open to students with credit for 881.02, 7881.02 or equiv. Repeatable to a maximum of 9 cr hrs.

7884.01 History of Literacy/Literacy Past and Present  
Advanced exploration of the history of literacy; its relationship to societies, cultures, and change; the acquisition, practice, and impacts of literacy in historical contexts.
Prereq: Grad standing, or permission of instructor. Not open to students with 6 sem hrs of 7884.01 or 7884.02, or 10 qtr hrs of 684 or History 775. Repeatable to a maximum of 9 cr hrs. Cross-listed in History 7884 and CompStd 7884.

7884.02 History of Literacy/Literacy Past and Present  
Advanced exploration of the history of literacy; its relationship to societies, cultures, and change; the acquisition, practice, and impacts of literacy in historical contexts.
Prereq: Grad standing, or permission of instructor. Not open to students with 6 sem hrs of 7884.01 or 7884.02, or 10 qtr hrs of 684 or History 775. Repeatable to a maximum of 9 cr hrs. This course is graded S/U. Cross-listed in History 7884 and CompStd 7884.

7888.01 Seminar in Digital Media Studies  
Advanced theoretical and practical approaches to digital media in English studies. Examines such intellectual questions as authorship, narrative, argument, and the nature of texts.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 10 qtr cr hrs for 888 or 6 sem cr hrs for 7888.01 or 7888.02. Repeatable to a maximum of 6 cr hrs.

7889.01 Seminar in Digital Media Studies  
Advanced theoretical and practical approaches to digital media in English studies. Examines such intellectual questions as authorship, narrative, argument, and the nature of texts.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 10 qtr cr hrs for 889 or 6 sem cr hrs for 7889.01 or 7889.02. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

7890.01 Seminar in Feminist Studies in Literature and Culture  
Analysis of literary and cultural texts through feminist methodologies. Time, period, and topic vary.
Prereq: Grad standing, or permission of instructor. Not open to students with 20 qtr cr hrs for 892 or 12 sem cr hrs for 7890.01 or 7890.02. Repeatable to a maximum of 12 cr hrs.
7890.02 Seminar in Feminist Studies in Literature and Culture G 3
Analysis of literary and cultural texts through feminist methodologies. Time, period, and topic vary.
Prereq: Grad standing, or permission of instructor. Not open to students with 20 qtr cr hrs for 892 or 12 sem cr hrs for 7890.01 or 7890.02. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

7891.01 Seminar in Disability Studies Theory G 3
Intensive study of disability-studies theory, with focus on a specific topic such as 'Disability and Materiality' or 'Mind and Brain.'
Prereq: Grad standing, or permission of instructor. Not open to students with 12-semester credits for 7891.01 or 7891.02. Repeatable to a maximum of 12 cr hrs.

7891.02 Seminar in Disability Studies Theory G 3
Intensive study of disability-studies theory, with focus on a specific topic such as 'Disability and Materiality' or 'Mind and Brain.'
Prereq: Grad standing, or permission of instructor. Not open to students with 12-semester credits for 7891.01 or 7891.02. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

7895.01 Seminar in Research Methods in Rhetoric and Composition G 3
Advanced study in a specific quantitative or qualitative research method in rhetoric and composition.
Prereq: 7195 (795), or permission of instructor. Not open to students with 10 qtr cr hrs for 895 or 6 sem cr hrs for 7895.01 or 7895.02. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

8193 Individual Studies G 1 - 9
Doctoral students may register for individual study in areas not normally covered by courses.
Prereq: Permission of grad committee. Not open to students with 30 qtr cr hrs for 993 or 18 sem cr hrs 8193. Repeatable to a maximum of 18 cr hrs or 18 completions. This course is graded S/U.

8858.01 Seminar in Folklore G 3
Advanced seminar on current or specialized topics in folklore studies.
Prereq: Grad standing, or permission of instructor. Not open to students with 9 sem cr hrs of English 8858.01 (can include equiv qtr cr hrs for 870), English 8858.02, or CompStd 8858. Repeatable to a maximum of 9 cr hrs. Cross-listed in CompStd 8858.

8858.02 Seminar in Folklore G 3
Advanced seminar on current or specialized topics in folklore studies.
Prereq: Grad standing, or permission of instructor. Not open to students with 9 sem cr hrs of English 8858.01 (can include equiv qtr cr hrs for 870), English 8858.02, or CompStd 8858. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

8903 Teaching College English G 1 - 3
Students work as apprentices to faculty members in the planning and execution of an undergraduate English course; 8903 (903) must be taken prior to the candidacy exam. Not open to ABD students.
Prereq: 8903 (903). Not open to students with 15 qtr cr hrs for 903 or 9 sem cr hrs for 8903. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

8904 Writing for Publication G 1 - 3
Assists students in English in learning to write publishable critical essays and in becoming familiar with publishing protocols.
Prereq: Not open to students with credit for 904, except by permission of director of Graduate Studies. Repeatable with permission of director of Graduate Studies. This course is graded S/U.

8982.01 Textual Criticism and Editing G 1 - 3
Evaluation of literary editorial methods, past and present; training in skills requisite to the textual critic and scholarly editor; practice in textual editing.
Prereq: 8980 (980) or equiv. Not open to students with credit for 982, 8982.01, or 8982.02.

8982.02 Textual Criticism and Editing G 1 - 3
Evaluation of literary editorial methods, past and present; training in skills requisite to the textual critic and scholarly editor; practice in textual editing.
Prereq: 8980 (980) or equiv. Not open to students with credit for 982, 8982.01, or 8982.02. This course is graded S/U.

8996 Research in English: Candidacy Examination G 1 - 18
Research in preparation for Ph.D. exams; arranged.
Prereq: Permission of director of Grad studies. Not open to students with 30 qtr cr hrs for 996 or 18 sem cr hrs for 8996. Repeatable to a maximum of 18 cr hrs or 18 completions. This course is graded S/U.

8997 The Dissertation Seminar G 1 - 3
Doctoral candidates present their research-in-progress to faculty and each other.
Prereq: Successful completion of candidacy exam. Not open to students with 15 qtr cr hrs for 997 or 9 sem cr hrs for 8997. Repeatable to a maximum of 9 cr hrs or 9 completions. This course is graded S/U.

8998 Research in English G 1 - 18
Research in English.
Prereq: Not open to students with credit for 998. Repeatable. This course is graded S/U.

8999 Research in English: Dissertation G 1 - 18
Research for dissertation purposes only.
Prereq: Not open to students with credit for 999. Repeatable. This course is graded S/U.

Entomology

1100 Exploring Entomology U ½
Basic understanding of the global trends within entomology, the diversity of career opportunities within the industry, planning for a career and opportunities for professional development.

1101 Insect Biology U 4
Acquaints people with the incredible biological diversity represented by the largest group of living animals, the insects. Insects will be used to illustrate important biological principles and functions as well as the scientific process.
Prereq: Not open to students with credit for 1111, 3000, 4000, or 4600. GE nat sci bio course.

1111 Biology of Insects, Animals & Fungi Affecting Buildings U 4
Acquaint construction engineers with the incredible biological diversity found on Planet Earth using insects as examples and biological models. Management of building attacking and inhabiting insects, animals and fungi will be covered.
Prereq: Not open to students with credit for 1101 (101), 3000 (500), 4000 (500), or 4600. GE nat sci bio course.

1260 Introductory Insect Field Biology U 2
Biology of insects and their relatives, with emphasis on behavior, ecology, and diversity; collection is required. Offered as one week summer course at Stone Lab.
Prereq: Course in high school biology. Not open to students with credit for Entomol 126.

1350 The Biology of Hope and Belief U 3
The underlying premise of this course is that the human mind and human behaviors have been shaped by the force of natural selection. Some of these behaviors are complex, longstanding and present in every human culture ever studied. This course explores the biological basis for two of them: the human capacity for hope and the human desire to believe in a supernatural deity.
Prereq: Not open to students with credit for Biology 1350. GE nat sci bio course.

2101 Insects and Human Affairs: Pests, Plagues, Poisons and Politics U 3
Insects are a daily fact of life, exerting major influence on human affairs over the course of history. The course analyses the extensive and sometimes uncomfortable relationships between insects and humans, including historical roots of insect/human interactions, impact of insects on development of scientific thought, use of insects as experimental models in drug design and military applications.
Prereq: Not open to students with credit for 102. GE nat sci bio course.

2200 Beekeeping U 3
This class presents general information on the biology, behavior and management of honey bee colonies, including pollination behavior and simple honey processing.

2400H Evaluating Evidence in Biology & Medicine U 3
Explores information and scientific literacies in biology and medicine, with emphasis on science as reported in the media and the use of insects and other organisms as model systems. We use evolutionary theory as the unifying framework for all life on earth. The ability to scrutinize science as reported in popular sources and to procure additional, credible information is emphasized.
Prereq: Honors standing. GE sci soc bio course.

3330 Social Insects U 3
Three hour general education course. Exploration of biological factors that permit ants, bees, wasps, and termites to maintain large and complex societies. Includes lecture and recitation.
Prereq: Entmtryg 1101 (101) or Biology 1101 (101), or equiv. Not open to students with credit for Entmtryg 4440H (Entomol 4440H) or Entomol 533. GE nat sci bio course.

3797.01E Evolution in Darwin's World and Ours: Context U 2
Practice historical thinking and research skills while exploring Darwin's life, intellectual development, and theory of species origin in broad historical context. Discussions will include modern evolutionary theory and its broad applications in biology, medicine, and other human endeavors. These themes will be explored during travels abroad in the post-requisite course Entmtryg 3797.02E.
Prereq: Fresh standing or above. Not open to students with credit for 3790H or 3797H. GE historical study course.
196 Entomology

3797.02E Evolution in Darwin's World and Ours: Abroad  U  1
Building on the context of the development of evolutionary theory explored during Entmgy 3797.01E, we will visit key museums and sights in London, Cambridge, and the village of Downe, England. Special visits with archivists, historians, scientists, and certified guides augment course readings and discussion.
Prereq: 3797.01E. Not open to students with credit for 3790H or 3797H. GE historical study course.

4000 General Entomology Lecture  U  3
The course serves both as a single, concise exposure to the subject and as a foundation for advanced work in entomology (systematics, evolution, ecology, management). Lectures cover all fundamental aspects but emphasize basic biological phenomena, including diversity, evolution, classification, structure, function, development, reproduction, behavior, and ecology.
Prereq: Biology 1113, 1113H, 1114, or 1114H. Not open to students with credit for 3000.

4001 General Entomology Laboratory  U  1
Laboratories will introduce the major patterns of diversity among insects and will provide experience and develop abilities in the identification of insects. We will explore insect and other arthropod diversity and evolution by collecting, identifying and curator invertebrate specimens. A personally collected and identified insect collection is a major component of the laboratory grade.
Prereq: Biology 1113, 1113H, 1114, or 1114H. Prereq or concour: Entmgy 4000. Not open to students with credit for 3000.

4191 Internship Experiences in Entomology  U  1 - 2
Ten or more weeks of an individualized experiential learning opportunity designed to link theoretical classroom knowledge with practical field application or research experience in an ongoing research environment.
Prereq: 3000 (500) or 4000 (500), and an additional Entmgy course at the 3000 (300) level or above, and Soph standing or above, and permission of advisor. Repeatable to a maximum of 4 hrs or 2 completions. This course is graded S/U.

4193 Individual Studies  U  1 - 3
Individual work in the field of entomology, involving laboratory, field, or library studies, appropriate for the student’s needs.
Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

4194 Group Studies  U  1 - 3
Special group study of a selected area in the field of entomology not provided in other courses. Repeatable to a maximum of 9 or 9 completions.

4440H Honors Social Insects  U  3
Exploration of biological factors that allow ants, bees, wasps, and termites to maintain large complex societies.
Prereq: Honors standing, and Entmgy 1101 (Entomol 101) or Biology 1101 (101), or equiv. Not open to students with credit for Entmgy 3330 (Entomol 333) or 444H.

4600 Introduction to Insect Science  U  1
This digital course provides basic information on insects to students intending to take additional coursework in entomology.
Prereq: Biology 1101 (101), 1113 (113), or 1115H (115H), or equiv. Not open to students with credit for 1101 (101), 1113 (113), 3000 (500), 4000 (500), 460, or 462.

4601 General Insect Pest Management  U  2
Exploration of insect pests that affect crops, landscapes, public health, and domestic animals, and the biological, cultural, and chemical tactics used to manage them.
Prereq: 1101, 1111, 3000, 4000, or 4600. Not open to students with credit for 462.

4602 Urban Landscape and Greenhouse Entomology  U  2
An economic entomology course covering the insect and mite pests of ornamental plants, turfgrass and greenhouse crops. Major pest groups are covered and control of the pests using Integrated Pest Management is emphasized. 
Prereq: 1101 (101), 1111, 3000 (500), 4000 (500) or 4600. Not open to students with credit for 462.

4603 Agricultural Entomology  U  2
An exploration of insect pests that affect grain, forage, vegetable, and fruit crops, and the biological, cultural, and chemical tactics used to manage them.
Prereq: 1101, 1111, 3000, 4000 or 4600. Not open to students with credit for Entmgy 460.

4607 Veterinary Entomology  U  2
The goal of this on-line course is to introduce students to the fascinating world of arthropod pests that impact the health and well-being of domesticated animals. The course will place an emphasis on understanding the remarkable biology of blood-feeding arthropods and the diseases that they transmit to companion and livestock animals.

4998 Undergraduate Research in Entomology  U  1 - 3
Undergraduate experience in entomological research in variable topics.
Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

4999 Research with Distinction  U  1 - 5
Conducting and reporting research with distinction.
Prereq: GPA 3.0 or above overall, GPA 3.0 or above in the major, and permission of project supervisor. Students are expected to present at the CFAES Undergraduate Research Forum and the Denman University Undergraduate Research Forum. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

4999H Honors Research with Distinction  U  1 - 5
Conducting and reporting Honors research with distinction. Students are expected to present at the CFAES Undergraduate Research Forum and the University's Denman Undergraduate Research Forum. Completion of online Honors Research Workshop required prior to enrollment.
Prereq: Honors standing, and CPRHR 3.40 or above, and GPA 3.40 or above in major, and permission of honors project supervisor. This course is graded S/U.

5001 Entomological and Environmental Approaches to Fly Fishing  U  G  3
Students will study the life histories and behaviors of the most common aquatic insects that serve as a primary food source for rainbow, brown and steelhead trout in Ohio streams. To enhance student success and enjoyment of fly fishing, the course content will include stream ecology, hydrology, and hydrodynamics, water quality, how to sample and identify macroinvertebrates, and fly tying. This course is grades S/U.

5060 Practical Experiences in Plant Health: Insects & Diseases of Plants  U  G  2
Plants are attacked by a multitude of pathogens and insects. Each plant in a production region has documented pests that can negatively impact plant health. Environment and production practices can influence the outcome of interactions between pathogens and pests. This is a beginning course for students to learn how to recognize signs and symptoms of economically important pathogens and insects. 
Prereq: 5600 or PlntPth 5603, or permission of instructor. Not open to students with credit for PlntPth 5606. Cross-listed in PlntPth.

5110 Ecology and Management of Pathogens and Insects Affecting Trees in Forest and Urban Environments  U  G  3
Overview of major pathogens and insects affecting health of forest and shade trees with emphasis on diagnosis, ecology, and management. Video-linked to Wooster. 
Prereq: Not open to students with credit for Entmgy 461 or PlntPth 610. Cross-listed in PlntPth.

5350.01 Taxonomy and Behavior of Aquatic Invertebrates  U  G  3
Taxonomy and behavior of the major groups of aquatic invertebrates, with an emphasis on North American freshwater macroinvertebrates. 1-2 required field trips. 
Prereq or concour: ENR 5280, or permission of instructor. Not open to students with credit for ENR 5350.01. Cross-listed in ENR.

5490 Insect Behavior: Mechanisms and Function  U  G  3
The behavior of insects mediates all aspects of their ecological interactions and evolution. This course describes the multitudes of behaviors expressed by insects and explores how behavior determines survivorship and fitness. We will discuss selective forces and constraints driving evolution of behaviors and mechanisms that make possible complex expression within simple insect nervous systems. 
Prereq: Jr standing or above. Not open to students with credit for 5420. Cross-listed in EEOB.

5500 Biological Control of Arthropod Pests  U  G  3
Covers philosophy, science, and application of biological control. Biology, mass-production, formulation, and application of various parasites, predators, and pathogens of pests will be discussed. 
Prereq: Jr standing or above. Not open to students with credit for 650.

5560 Principles and Applications of Integrated Pest Management  U  G  3
Overview of the principles of integrated pest management (IPM) of arthropod pests using an ecological approach, including examining how various management tactics can be used in an integrated manner. 
Prereq: Jr or Sr standing.

5604 Capstone Course: Problem-Based Studies in Plant Health  U  G  2
Students will be presented with a current plant health problem from the industry. They will gather diverse information from consultants, synthesize novel solutions, and develop implementation plans. 
Prereq: Jr, Sr or Grad standing in Entmgy, PlntPth, or Plant Hlth Mgmt. Not open to students with credit for PlntPth 5604. Cross-listed in PlntPth.

5605 Vector Biology and Vector Borne Diseases  U  G  3
An overview of the insect vectors that pose the greatest threats to human health. Learn about their basic ecology and behavior, the pathogens they transmit, the diseases caused by those pathogens, and the fascinating biology behind these vector-pathogen-host interactions. Learn about current methods being implemented around the globe to control vector borne disease transmission. 
Prereq: Biology 1101, 1113, or 1113H, or equiv.; or Grad standing.
5608 Turfgrass Insect and Mite Pests - Identification, Biology, and Management

This course provides information on the insect groups that attack managed turfgrass (lawns, grounds, sport fields, and golf courses) in such a manner that participants will learn how to diagnose and identify common pests, and be able to select appropriate methods of managing these pests.
Prereq: 1101 (101), 1111, 3000, 4000 (500), or 4600.

5609 Landscape Ornamental Plant Insect and Mite Pests - Identification, Biology and Management

This course covers insects and mites that attack landscape ornamental plants (trees, shrubs, perennials, annuals). Students learn to diagnose and identify common pests, and select appropriate management methods. Management strategies include monitoring techniques, pesticides, biocontrol, resistance, cultural/mechanical controls, in an Integrated Pest Management (IPM) approach.
Prereq: 1101, 1111, 3000, 4000, or 4600.

5610 Greenhouse Plant Health and Pest Management

Overview of the principles of plant health and pest management applied to the production of plants and other commodities in controlled environments, including greenhouses, urban vertical agriculture, high tunnels, hydroponic systems, and intercrops.
Prereq: Sr standing or above.

5797 Emerging Arthropods, Pathogens, and Challenges in Vector Biology

Provides students with immersive field and lab experiences that span the entire spectrum of vector biology. The course consists of a study abroad component in Xalapa, Mexico (INECOL) focused on the collection and identification of arthropod vectors (e.g., mosquitoes) in the field, and a local component in Wooster, OH (DARC) focused on molecular approaches used in vector biology. A prior introductory course in entomology or public health/infectious diseases is highly encouraged. Familiarity with the Spanish language is highly recommended for OSU students, and English is needed for INECOL students.
Prereq: J or Grad standing.

5800 Pesticide Science

Exploration of pesticide toxicity and practical use; modes of action in target organisms, regulations, application methods, environmental fate, resistance management, and use in integrated pest management programs.
Prereq: Jt standing or above.

6193 Individual Studies

Individual work in the field of entomology, involving laboratory, field, or library studies, appropriate for the student's needs.
Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

6194 Group Studies

Special group study of a selected area in the field of entomology not provided in other courses. Repeatable to a maximum of 9 cr hrs or 9 completions.

6210 Evolution and Diversity of Insects

The scope of this course extends from the molecular to at least the community and ecosystem levels. Elucidation of the pattern of insect evolution builds upon molecular, anatomical, and behavioral data. Students will study and learn about the evolutionary and developmental origins of anatomical structures and understand how those structures interact and function.
Prereq: 3000 or 4000 (500), or equivalent, or permission of instructor.

6310 Insect Physiology and Molecular Biology

Explores physiological and molecular mechanisms that regulate insect development and function.
Prereq: Credit for one Entmgy course, and Grad standing; or permission of instructor. Not open to students with credit for 631.

6320 Experimental Insect Physiology and Molecular Biology

This laboratory course uses both classical and cutting-edge experimental techniques to uncover aspects of insect biology. We will conduct a series of novel experiments on diapausing and non-diapausing model insects to show physiological and molecular mechanisms used to survive winter. The course goal is to create a student co-authored manuscript to submit to the Journal of Insect Physiology.
Prereq or concur: 6310.

6410 Insect Ecology and Evolutionary Processes

Overview of abiotic and biotic factors influencing the diversity, distribution, and abundance of insects with a focus on general ecological and evolutionary principles.
Prereq: Grad standing, or permission of instructor.

6501 Mentored Teaching in Entomology

Students will work with faculty members to gain intensive hands-on mentored experiences focused on direct interaction with students and on the scholarly aspects of effective teaching.
Prereq: Grad standing. Repeatable to a maximum of 12 cr hrs or 12 completions. This course is graded S/U.

6502 Mentored Extension Experience in Entomology

Students will work with faculty members to gain intensive hands-on mentored experiences focused on direct interaction with community stakeholders and on various aspects of extension work.
Prereq: Grad standing. Repeatable to a maximum of 12 cr hrs or 12 completions. This course is graded S/U.

6703 Molecular Techniques and Data Analysis

Deals with basic molecular biology techniques required to conduct genomics, proteomics and metabolomic studies. Hands-on experience in bioinformatics, functional genomics and metabolite analysis will be emphasized.

7300 Plant Health Management Seminar

This course is designed to cover current topics in plant health management for students in the Master in Plant Health Management program. Topics and guest speakers may differ from semester to semester and will depend on student interest.
Repeatable to a maximum of 6 cr hrs. This course is graded S/U. Cross-listed in PinPht.

7890 Special Topics in Entomology

Seminar on publications, current research, or research techniques. Repeatable to a maximum of 6 cr hrs or 6 completions.

7910 The Nature and Practice of Science

Analysis and application of logic underlying scientific reasoning, theory, hypothesis, and their integration with experimental design, discovery, ethics, and science as a human endeavor.
Prereq: Not open to students with credit for Entmol 790.

7920 Presentation Skills for Scientists

Professional development course for graduate students who are interested in developing and improving their presentation skills for communicating with peer scientists and the public, using a variety of media.

7930 Scientific Writing & Grant Proposal Development

For graduate students who wish to develop and improve their written skills for communicating with technical and nontechnical audiences.

7999 Research in Entomology, MS

Research for thesis purposes only. Research may take place in laboratory, greenhouse, and/or field resources at The Ohio State University in Columbus, Wooster and other associated research areas as determined by student and instructor. Research may include experimental studies, revisional studies, or studies that create original data or technology that contributes to the discipline.
Prereq: Grad standing in Entomology. Repeatable. This course is graded S/U.

8000 Entomology Seminar

Weekly departmental seminars given by experts in the field are used to give students insight into current trends in entomological research.
Prereq: Grad standing in Entmgy. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

8800 Research and Training Seminar

Presentation of procedures, resources, and faculty research in the Department of Entomology. Required of all graduate majors during the first year of registration.
Prereq: First year Grad standing in Entmgy. Not open to students with credit for Entmol 880. This course is graded S/U.

8999 Research in Entomology, PhD Pre-Candidacy

Research for dissertation purposes only. Research may take place in laboratory, greenhouse, and/or field resources at The Ohio State University in Columbus, Wooster and other associated research areas as determined by student and instructor. Research may include experimental studies, revisional studies, or other studies that create original data or technology that contributes to the discipline.
Prereq: PhD Grad student standing in Entomology without completion of a candidacy exam. Repeatable. This course is graded S/U.

8999 Research in Entomology, PhD Post-Candidacy

Research for dissertation purposes only. Research may take place in laboratory, greenhouse, and/or field resources at The Ohio State University in Columbus, Wooster and other associated research areas as determined by student and instructor. Research may include experimental studies, revisional studies, or other studies that create original data or technology that contributes to the discipline.
Prereq: PhD Grad student standing in Entomology having completed the candidacy exam. Repeatable. This course is graded S/U.

Environment and Natural Resources

1100 Environment and Natural Resources Survey

Survey course for ENR students. Covers academic requirements; university procedures, grading system, resources; student rights and responsibilities; overview of academic areas of study. Also covers career opportunities in Envnt and Nat Res.
Prereq: Not open to students with credit for 119 or FAES 100.

1100H Environment and Natural Resources Survey - Honors

Section
Survey course for ENR Honors students. Covers academic requirements; university procedures, grading system, resources; student rights and responsibilities; overview of academic areas of study. Also covers career opportunities in Envnt and Nat Res.
Prereq: Honors standing. Not open to students with credit for 119 or FAES 100H.

1150 ENR Scholars Seminar

Designed for first year Environment and Natural Resources Scholars students to explore personal interests, interdisciplinary opportunities, campus and local community resources, and issues and activities related to Environment and Natural Resources.
Prereq: Must be an ENR Scholar. Repeatable to a maximum of 2 cr hrs.
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<tr>
<th>Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1200</td>
<td>Exploring Sustainability: SUSTAINS LC Seminar</td>
<td>U 1</td>
<td>This seminar is designed for SUSTAINS Learning Community students to explore their interests within sustainability, learn about opportunities to be involved in campus and local community sustainability efforts, and connect with campus partners and faculty working and researching in the field. Students must be a part of the SUSTAINS Learning Community in order to take this seminar. Prereq: Must be in the SUSTAINS Learning Community. Repeatable to a maximum of 2 cr hrs. This course is graded S/U. Cross-listed in ADEEcon.</td>
</tr>
<tr>
<td>1500</td>
<td>Career Development and Success</td>
<td>U 1</td>
<td>Professional development course for SENR majors. The purpose of the course is to help students explore career options and next steps, develop career-specific skills such as interviewing, networking, and resume development, and to connect students with professionals in the field. Prereq: Soph standing or above, and enrollment in ENR major.</td>
</tr>
<tr>
<td>2000</td>
<td>Natural Resources Data Analysis</td>
<td>U 3</td>
<td>Introductory data analysis course that focuses on understanding and applying basic statistical concepts, problem solving, and interpreting the results of statistical analysis. Au, Sp Sem. GE data any course.</td>
</tr>
<tr>
<td>2100</td>
<td>Introduction to Environmental Science</td>
<td>U 3</td>
<td>Introduction to environmental science, the ecological foundation of environmental systems, the ecological impacts of environmental degradation by humans, and strategies for sustainable management of environment and natural resources. This course is available for EM credit. GE nat sci bio course.</td>
</tr>
<tr>
<td>2155</td>
<td>Energy and Environment</td>
<td>U 3</td>
<td>This course introduces and examines the fundamentals of energy sources, energy use, energy efficiency, and resulting environmental implications of the various energy supplies. Sp Sem. Prereq: Not open to students with credit for 155 or EarthSci 2155 (EarthSci 155). GE nat sci phy course. Cross-listed in EarthSci.</td>
</tr>
<tr>
<td>2191</td>
<td>Part-time Professional Practice in Environment and Natural Resources</td>
<td>U 1</td>
<td>Part-time practical professional experience in an environmental/natural resources field. Prereq or concur: 3191. Repeatable to a maximum of 4 cr hrs. This course is progress graded (S/U).</td>
</tr>
<tr>
<td>2300</td>
<td>Society and Natural Resources</td>
<td>U 3</td>
<td>Introduction to interactions between humans, natural resources, and ecosystems from a social science perspective. Au, Sp, Su Sem. Prereq: Not open to students with credit for 203. GE soc sci human, nat, and econ resources course.</td>
</tr>
<tr>
<td>2360</td>
<td>Ecology and Conservation of Birds</td>
<td>U 2-3</td>
<td>Introduction to the ecology and conservation of birds, with special emphasis on field ornithology and student research projects. Course integrates many concepts to build understanding of how research and management can support bird conservation. Prereq: Not open to students with credit for 230 or 231.</td>
</tr>
<tr>
<td>2367</td>
<td>Communicating Environmental and Natural Resources</td>
<td>U 3</td>
<td>Concepts, skills development, and practice in accessing and communicating information about the environment and natural resources to varied audiences; emphasis on written and oral communication. Prereq: English 1110, and Soph standing or above. GE writing and comm course. level 2.</td>
</tr>
<tr>
<td>2500</td>
<td>Introduction to Sustainability</td>
<td>U 3</td>
<td>Introduces students to principles from various disciplines related to social, economic and environmental sustainability. Students will evaluate key concepts and examine tradeoffs that are a part of sustainability action using case studies representing diverse perspectives. Prereq: Soph standing, or permission of instructor. Not open to students with credit for ADEEcon 2500. Cross-listed in ADEEcon.</td>
</tr>
<tr>
<td>3000</td>
<td>Soil Science</td>
<td>U 3</td>
<td>Introduction to soil physical, chemical, and biological properties related to land use, environmental quality, and crop production. Au, Sp Sem. Prereq: Not open to students with credit for 300.01. This course is available for EM credit. GE nat sci phy course. NS Admis Cond course.</td>
</tr>
<tr>
<td>3001</td>
<td>Soil Science Laboratory</td>
<td>U 1</td>
<td>Observation and quantitative determination of soil properties. Prereq or concur: 3000. GE nat sci phy course.</td>
</tr>
<tr>
<td>3005</td>
<td>Soil and Site Evaluation for Onsite Wastewater Treatment</td>
<td>U 3</td>
<td>This is a hybrid course (online &amp; field lab) in assessing sites and soils for designing environmentally responsible on-site wastewater treatment systems. It covers assessing soil conditions, description of soil horizons and properties, identification of limiting conditions, mapping methods to develop site plans, and understanding of soil hydrology relevant to onsite wastewater treatment.</td>
</tr>
<tr>
<td>3100</td>
<td>Introduction to Sustainable Agriculture</td>
<td>U 3</td>
<td>This course is an introduction to the issues, concepts and practices associated with sustainable agriculture. Since agriculture is a complex social-ecological system which integrates and connects a range of economic, environmental and social aspects, this course uses a multidisciplinary approach to enable students to assess the sustainability of agricultural systems.</td>
</tr>
<tr>
<td>3191</td>
<td>Conducting Your Internship in the School of Environment and Natural Resources</td>
<td>U 0</td>
<td>SENR strives to provide opportunities for students to develop the critical competencies and technical knowledge and skills that employers demand in the job market and that are necessary for student success in their chosen field. This class provides students the structure to complete the initial requirements of their internship experience and begin reflecting on that experience. Prereq: Internship approval, and permission of instructor. Repeatable to a maximum of 4 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>3200</td>
<td>Environmental and Natural Resources Policy</td>
<td>U 3</td>
<td>This course covers topics such as the constitutional foundations of environmental policy, the role of congress and the executive branch in designing policy and bureaucratic agencies in implementing them, and the courts system as the final arbiter for environmental disputes. It also covers some of the foundational legislation in the U.S. to protect the environment and natural resources. Prereq: 2100 and 2300. Not open to students with credit for 4000. GE soc sci orgs and polities course.</td>
</tr>
<tr>
<td>3280</td>
<td>Water Quality Management</td>
<td>U 2</td>
<td>Causes, consequences, and solutions of pollution in lakes, rivers, wetlands, and groundwater; analysis of the physical, chemical, and biological indicators of water quality.</td>
</tr>
<tr>
<td>3300</td>
<td>Introduction to Forestry, Fisheries, and Wildlife</td>
<td>U 3</td>
<td>This course is an introduction to the basic elements of forestry, fisheries, and wildlife (FFW) ecology and management for majors in environment and natural resources. This course has also been organized to provide an introduction to non-majors who may not have the opportunity to take further courses in these fields. Prereq: 2100 or EEOB 3410. Not open to students with credit for 3300.</td>
</tr>
<tr>
<td>3321</td>
<td>Biology and Identification of Woody Forest Plants</td>
<td>U 3</td>
<td>Field identification of trees, shrubs, and vines in temperate forest ecosystems; basic biological principles of morphology, reproduction, growth, genetics, and taxonomy of major woody species. Au Sem. Prereq: Not open to students with credit for 221.</td>
</tr>
<tr>
<td>3322</td>
<td>Forest Ecosystems</td>
<td>U 3</td>
<td>Structure and function of temperate forest ecosystems; field-oriented study of the relationships among ecosystem components, and of the composition and successional dynamics of forest communities. One or more all-day field trips. Au Sem. Prereq or concur: 2100 (210), 2300 (203), and 3321 (221), or permission of instructor. Not open to students with credit for 322.</td>
</tr>
<tr>
<td>3323</td>
<td>Forest Biometrics</td>
<td>U 3</td>
<td>A study of the quantitative decision tools necessary to measure the forest resource; confidence and probability measures of land area, timber, water, wildlife, and recreation. Sp Sem. Prereq: 2000 (222), Stat 1450 (145), HCS 2260 (260), or AnimSci 2260 (260). Not open to students with credit for 323.</td>
</tr>
<tr>
<td>3333</td>
<td>Silviculture</td>
<td>U 3</td>
<td>Ecological principles and practical applications of methods for controlling forest ecosystem structure and function; prescription of silvicultural practices in the field. One or more all-day field trips. Sp Sem. Prereq or concur: 2100 (201), 2300 (203), and 3321 (221), or permission of instructor. Not open to students with credit for 333.</td>
</tr>
<tr>
<td>3335.01</td>
<td>Introduction to Wildland Fire Management</td>
<td>U 2</td>
<td>Wildland fire behavior, fire safety, control of wildland fires, and the use of prescribed fire in management objectives. Meets S-100 and S-190 requirements for wildland firefighter certification. Au Sem. Prereq: Not open to students with credit for 350.01.</td>
</tr>
<tr>
<td>3335.02</td>
<td>Wildland Fire Management Laboratory</td>
<td>U 1</td>
<td>Teaches wildland firefighter skills and safety, and provides familiarity with tools and apparatus. Meets S-130 requirements for wildland firefighter certification. One weekend field work required. Au Sem. Prereq or concur: 3335.01. Not open to students with credit for 350.02.</td>
</tr>
<tr>
<td>3400</td>
<td>Psychology of Environmental Problems</td>
<td>U 3</td>
<td>The theory and psychology behind individual and group behavior as it relates to environmental problems. Au Sem. Prereq: 2300 (203) or Psych 1100 (100). Not open to students with credit for 615.</td>
</tr>
</tbody>
</table>
Environment and Natural Resources 199

4370 Religion and Environmental Values in America U 3
Examines development & influence of religious environmental values & their impact on environmental citizenship in America; Jewish, Muslim, Buddhist & Christian environmental perspectives; stewardship, eco-justice & creation spirituality.
Sp Sem. Prereq: Not open to students with credit for 347. GE cultures and ideas course.

4370E Religion and Environmental Values in America U 3
Examines development & influence of religious environmental values & their impact on environmental citizenship in America; Jewish, Muslim, Buddhist & Christian environmental perspectives; stewardship, eco-justice & creation spirituality.
Honor standing. Not open to students with credit for 3470. GE cultures and ideas course.

3500 Community, Environment and Development U 3
Social change related to natural resource and environmental issues. Includes a focus on community-level initiatives, environmental social movements, and issues of environmental justice.
Sp Sem. Prereq: 2300 (203), RurrSoc 1500 (105), or Social 1101 (101).

3530 Women, Environment and Development U 3
Interdisciplinary study of women's roles as environmental stewards and in resource-based development in global context. Attention given to gender differences in environmental and rural development practices.
Cross-listed in WGGSt.

3600 Management of Public Lands U 3
Examination of parks and recreation concepts including development, rationale, and frameworks for park and recreation systems in the United States.
Prereq or concour: 2100 and 2300.

3611 Foundations for Environmental Communications, Education and Interpretation U 2
Foundational course that prepares students for understanding the theoretical bases that relate to and differentiate between environmental communications, education, and interpretation.
Course includes required field trips.
Au Sem. Prereq: Not open to students with credit for 311.

3700 Introduction to Spatial Information for Environment and Natural Resources U 3
Introduction to methods of collecting and utilizing spatial information (GIS, RS and GPS) for Environmental and Natural Resources management.
Prereq: Not open to students with credit for 3750 or 324.

3800 Principles and Tools of Ecosystem Restoration U 2
The new Anthropocene era brings with it mass extinctions, climate change, and ecosystem degradation. Restoration provides us with hope for the future. We will examine the philosophical and practical basis for restoration, reviewing how decisions are made and implemented.
Prereq: 2100 or Biology 1114, or permission of instructor. Not open to students with credit for 5560.

3900 Sustainability Metrics U 4
Addresses the use of metrics, data, and indicators to measure sustainability and track progress. The course will survey a broad range of environmental challenges and evaluate the choices confronting public and private groups. Students will use software tools to quantify sustainability measures.
Prereq: 2000 or ADEcEcon 2005, or other GE Data Analysis course.

4191 Professional Practice in Environment and Natural Resources U 2
Full-time practical professional experience in an environmental/natural resources field.
Prereq or concour: 3191. Not open to students with 4 cr hrs of 4191. Repeatable to a maximum of 4 cr hrs. This course is graded S/U.

4193 Individual Studies in Environment and Natural Resources U 1 - 3
Individual Studies in Environment and Natural Resources.
Au, Sp Sem. May Term. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

4250 Soil Resource Management U 3
Degradation of the soil by erosion, compaction and salinity. Methods of preventing degradation and remediating existing problems. Special emphasis on conservation tillage, crop rotations, and irrigation management.
Prereq: 3000 (300.01), or permission of instructor. Not open to students with credit for 442.

4285 Watershed Hydrology U 3
Covers hydrologic processes in watersheds, including precipitation, evapotranspiration, infiltration, runoff, and streamflow. We will evaluate how watershed characteristics, climate, and land use control these processes. In addition, we will discuss and practice current physical, chemical, and computational techniques for characterizing the hydrologic functioning of watersheds.
Prereq: Chem 1210, and Math 1151 or 1156.
200 Environment and Natural Resources

4950 Wilderness Leadership Education
U 3
Affiliate program with the North Carolina Outward Bound School (NCOBS). Field studies and practice of wilderness expedition skills, leadership, group dynamics, safety, judgment, and environmental studies. Approval of NCOBS application required. Specific content, location, semester(s) of offering and prerequisites vary. Students will pay OSU fees and any fees in excess of OSU tuition, incl. travel. Prereq: Permission of instructor.

4998 Undergraduate Research
U 1 - 6
Conducting and reporting undergraduate research. Prereq: Permission of research project supervisor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

4999 Research with Distinction
U 1 - 6
Conducting and reporting undergraduate research. Students are expected to present at the CFAES Undergraduate Research Forum and the Denman Undergraduate Research Forum. Prereq: 3.0 CPHR or above, and permission of project supervisor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

4999H Honors Research With Distinction
U 1 - 6
Conducting and reporting honors research with distinction. Prereq: Honors standing, and CPHR 3.4 or above, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 3 completions. This course is graded S/U.

5194 Group Studies
U G 1 - 3
Group studies on the nature and management of environmental and natural resources encompassed in various developing and special topics. Au, Sp Sem. Prereq: Permission of instructor. Not open to students with maximum qtr cr hrs for 694. Repeatable to a maximum of 6 cr hrs or 2 completions.

5210 US Environmental Impact Assessment
U G 3
Study of impact of human activity in natural resources through evaluation of environmental impact. Prereq: Jr, Sr, or Grad standing.

5211 International Environmental Impact Assessment
U G 3
Fundamental concepts of international environmental impact assessment including the legal and institutional frameworks, practice and performance, and social and cultural contexts that shape EIA’s implementation worldwide. Prereq: Jr, Sr, or Grad standing, or permission of instructor.

5250.01 Wetland Ecology and Restoration
U G 3
Wetland hydrology, biogeochemistry, vegetation, biotic adaptations. Ecosystem services, classification, and management of wetlands. Fundamental concepts of ecological engineering applied to wetland creation and restoration and river restoration. Prereq: EEOB 503.01 or Grad standing. Not open to students with credit for 725 or 726.

5250.02 Wetland Field Laboratory
U G 1
Laboratory on wetland hydrology, vegetation, water quality, soils, and aquatic biota. Concur: 5250.01. Not open to students with credit for 725 or 726.

5260 Soil Landscapes: Morphology, Genes and Classification
U G 3
Course in soil genesis, classification and mapping. Au Sem. Prereq: 3000 (300.01) and 3001 (300.02); or Grad standing; or permission of instructor. Not open to students with credit for 650.

5261 Environmental Soil Physics
U G 3
Principally involves the state and transport of water, heat and gas within soil, and the associated soil physical properties. Sp Sem. Not open to students with credit for 655 or 671.

5262 Environmental Soil Chemistry and Remediation
U G 3
Environmental soil chemistry relevant to soil and contaminant remediation. Excessive phosphorus fertilizer, degraded coal mineral soils; salt degradation; heavy metal contamination; urban soils. Socioeconomic considerations including cost and community/regulatory agency acceptance. Laboratory focuses on hands-on soil investigation/problem solving using soil geochemical computer models. Prereq: One semester of Chemistry, or Grad standing.

5263 Biology of Soil Ecosystems
U G 3
A comprehensive study of microbial communities and their role in providing ecosystems services. Prereq: 3000, or Grad standing.

5265 Field Investigations: Microbial Ecology Methods for Environmental and Agricultural Applications
U G 2
Field soil observations; sampling across the landscape; GPS and GIS data acquisition systems and spatial statistical analysis; soil physical and water measurements in the field. Prereq: 3000 and 3001; or Grad standing.

5266 Field Soil Investigation: Soil Chemistry, Fertility and Biology
U G 3
A comprehensive overview of theory, principles and techniques of laboratory methods used for chemical analysis of soil, plant material, and environmental samples. Sp Sem. Not open to students with credit for 740.

5268 Soils and Climate Change
U G 3
This course is designed for students interested in learning basic soil and geologic processes as they impact climate change and are impacted by it. Topics covered include soil processes, abrupt climate change, trace gases and their properties, global C cycle, gaseous emissions, C-neutral fuels, carbon sequestration, Kyoto Treaty, and trading of C credits. Prereq: Not open to students with credit for EarthSc 5268. Cross-listed in EarthSc.

5270 Soil Fertility
U G 3
Provides a broad overview of the principles of soil fertility, plant nutrition, & nutrient management in managed ecosystems. Covers foundational information on the cycling of individual nutrients in soil, including the biotic and abiotic factors that influence these dynamics. Exposure to many contemporary issues around nutrient management and basic practical skills for managing nutrients. Prereq: 3000, or Grad standing, or permission of instructor.

5271 Soils of Forest Ecosystems
U G 3
Characteristics and processes of soils in natural and managed forests; interactions of forest communities and soils; mgmnt of soils in forest ecosystems. Designed for all students & practicing professionals in forestry & soil science. Au Sem. Prereq: 3000 (300.01), or Grad standing, or permission of instructor. Not open to students with credit for 540.

5272 Turfgrass Soils
U G 2
Soil properties and processes of specifically designed and constructed soils meeting the agronomic and playability requirements of golf course and athletic field venues. Sp Sem. Prereq: 3000 (300.01); or Grad standing; or permission of instructor. Not open to students with credit for 540.

5273 Environmental Fate and Impact of Contaminants in Soil and Water
U G 3
An overview of contaminant sources, transport through soil and water, and environmental fate and impact to human and ecosystem receptors. Prereq: Grad standing or two semesters of chemistry. Not open to students with credit for 675.

5274 Ecosystems Simulation
U G 3
A laboratory course in conducting computer simulations of agricultural, forest and aquatic ecosystems addressing both production and environmental protection issues. Prereq: 3000 (300.01) and 3001 (300.02), or Grad standing. Not open to students with credit for 730.

5279 Urban Soils and Ecosystem Services: Assessment and Restoration
U G 3
A comprehensive study focused on assessment and restoration of urban soil to provide essential ecosystem services. Urban soil laboratory provides hands-on experience with soil assessment and restoration.

5280 Stream Ecology
U G 4
Structure, function, and biota of streams and rivers. Emphasis on stream processes and community dynamics over space and time. Conservation, restoration, water policy, and environment/justice issues are also addressed. Prereq: 3300, or Grad standing, or permission of instructor.

5310 Ecological Engineering and Science
U G 4
Definition, classification, and practice of Ecological Engineering. Course explores ecological ecosystems, ecosystem restoration, and the utilization of natural processes to provide societal services and benefits to nature. Prereq: One course in Biology, Ecology, Engineering, or Geology, and Jr standing or above. Not open to students with credit for EnvEng 5310 or FABEng 5310. Cross-listed in EnvEng and FABEng.

5320 Forest Management
U G 3
Application of biological, economic, and planning principles to address the sustainable management of forest resources with emphasis on the timber resource and associated products. Sp Sem. Prereq: 3323 (323) and 3333 (333), or Grad standing, or permission of instructor. Not open to students with credit for 635.

5325 Forest and Public Lands Policy
U G 3
Explores important, relevant and leading-edge concepts in U.S. forest and public lands policy. Emphasizes political, legal, and administrative issues of federal and state lands, including forests, parks, rangelands, and wildlife refuges. Moderate proficiency with GIS expected. Prereq: 3200, or Grad standing.

5340 Forest Ecosystem Management
U G 3
Concepts and methods applied to managing forests across broad landscapes for biodiversity, multiple uses, and ecosystem integrity within the context of traditional forest management. Au Sem. Prereq: 2.15-hr cl. Prereq: Sr or grad standing, and permission of instructor. Not open to students with credit for 734.

5348 Aquatic Population Ecology & Management
U G 3
Applies concepts and principles from the fields of population ecology, demography and population genetics to current conservation and management problems facing populations of aquatic organisms. Prereq: 3300 or EEOB 3410, or Grad standing, or permission of instructor.
Environment and Natural Resources 201

5350.01 Taxonomy and Behavior of Aquatic Invertebrates U G 3
Taxonomy and behavior of the major groups of aquatic invertebrates, with an emphasis on North American freshwater macroinvertebrates. 1-2 required field trips. Prereq or concur: 5280, or permission of instructor. Not open to students with credit for Entmgy 5350.01. Cross-listed in Entmgy.

5350.02 Taxonomy and Behavior of Fishes U G 3
Taxonomy and behavior of the major groups of fishes, with an emphasis on North American freshwater fishes.

5355 Aquaculture U G 3
Overview of physical, biological, and economical factors influencing fish culture systems. World fish production practice comparisons. Emphasis on propagation and conservation efforts. 3 cl, 1-4 hr lab, 2 hatchery trips. Prereq: 2000, and 3300 or BIOCHEM 4511, and CHEM 1210, or grad standing. Not open to students with credit for 628.

5358 Applied Vertebrate Physiological Ecology U G 3
An examination of the physiological responses of vertebrate animals to human-induced environmental change, and the consequences of these responses for individuals and populations. This will be accomplished by an exploration of the current primary literature. SP semester only.
Prereq: EEOB 3410 or permission of instructor.

5360 Principles of Wildlife Ecology and Management U G 3
Principles of population and community ecology applied to conservation and management of terrestrial vertebrates. Principles of wildlife management including social and economic factors. Au Sem. Prereq: Not open to students with credit for 623.

5362 Wildlife Ecology Methods U G 3
Methods used by wildlife ecologists to measure population characteristics and habitat quality for wild terrestrial vertebrates. 1-2 Sat and 1 full weekend field trips required. Au Sem. Prereq: 2000, 3300, Stat 1450, or Grad standing. Not open to students with credit for 662.

5364.01 Mammalian Wildlife Biology and Management U G 3
Identification, ecology, and population management of North American mammals. 1-2 Sat field trips required. Au Sem. Prereq: 3300 (319) or equiv, or Grad standing, or permission of instructor. Not open to students with credit for 624.

5364.02 Avian Wildlife Biology and Management U G 3
Identification, ecology, and population management of North American birds. 1-2 Sat field trips required. Sp Sem. Prereq: 3300 (319) or equiv, or Grad standing, or permission of instructor. Not open to students with credit for 624.

5370 Management of Wildlife Habitat U G 3
Introduction to the principles of wildlife-habitat relationships, natural history of major North American ecosystems with an Ohio focus, and the conservation and management of wildlife habitats within those ecosystems. Prereq: 3300, or Grad standing.

5374 Landscape Ecology for Natural Resource Management U G 3
In this course, students will gain a practical working understanding of landscape ecology, with the goals of understanding how landscape processes operate at different scales, knowing how to assess spatial patterns and processes, and understanding how landscape ecology principles and theory apply to natural resource assessment and management. Prereq: Grad standing, or permission of instructor.

5400 Interventions to Promote Pro-environmental Behavior U G 3
This course focuses on using psychology to change human behavior in service of sustainability. We will explore a variety of approaches for promoting pro-environmental behavior. You will learn how to design and evaluate behavioral intervention programs. Prereq: 3400 or Psych 1100, or permission of instructor.

5451 Water Policy and Governance U G 3
This class examines institutions to manage water effectively at a variety of levels -state, federal, and international- and analyzes how they affect water access and use in different areas (agriculture, energy, etc.). Students in the class will also engage in a careful examination of the sources of conflict and cooperation among water stakeholders on a regional and global scale. Prereq: 3200 or 4000, or Grad standing.

5480 Local Peoples and International Conservation U G 3
Uses interdisciplinary thinking to explore the global environmental crises and the conflicts between indigenous/local peoples, conservationists, and policy makers regarding natural resource use. The course examines biodiversity conservation, protected areas, community-based conservation, global inequities, environmental history and politics, and sustainable development.

5560 The Dynamics of Ecosystem Restoration U G 3
Ecosystems undergoing restoration are dynamic and witness major changes in their species diversity, composition, and ecosystem function. This course develops an understanding of how biotic and abiotic conditions interact with management to influence ecosystems' development. EEOB 3410 is recommended for success in this course.
Prereq: 3800 and 4800; or Grad standing; or permission of instructor.

5600 Sustainable Agriculture and Food Systems U G 3
Integrative look at the social, economic, and production/environmental dimensions of sustainable agriculture and food systems. Particular attention to sociological, soil science and related disciplinary perspectives. Prereq: 3000 (300.01) and 3500, or grad standing.

5640 Natural Resources Program Planning U G 3
Inventory and evaluation of natural resources for program planning with consideration of goals, objectives and actions, budgeting, and planning documents. Prereq: 3600. Prereq or concur: 3200 and 3700; or Grad standing.

5642 Environment and Natural Resources Administration U G 3
Organization and administration of environment and natural resource agencies and non-governmental organizations. Sp Sem. Prereq: 4000 (400), or grad standing, or permission of instructor. Not open to students with credit for 642.

5649 Wildlife Conservation Policy U G 3
Overview of fish and wildlife policy in the US and key issues affecting wildlife conservation in North America. Sp Sem. Prereq: 4000 (400), or Grad standing. Not open to students with credit for 649.

5690 Workshop in Environmental Education U G 2
Problems of instruction in environmental education with consideration of both traditional approaches and current developments in content and methodology. Taught at F.T. Stone Lab. Su Sem. Prereq: Jr standing or above, and permission of Instructor. Repeatable to a maximum of 6 cr hrs.

5790.06 Iceland Education Abroad Seminar U G 1
Pre-departure preparation for Iceland Study Abroad. Provides a general introduction to the country so that learning opportunities in-country will be maximized. Prereq: Accepted and committed to participate in the SENR Study Abroad Program in Iceland.

5790.07 Dominican Republic Study Abroad Seminar U G 1
Pre-departure preparation for Dominican Republic Study Abroad. Prereq: Accepted and committed to participate in the SENR Study Abroad Program in Dominican Republic.

5790.08 China Research Abroad Seminar U G 1
Pre-departure seminar for students participating in the China Research Abroad trip. Students will develop a research project during this course with the guidance from the instructor, creating the protocols necessary to execute the project in China. Prereq: Students must be participating in the China Research Study Abroad program. This course is graded SU.

5790.10 Antarctica Study Abroad Seminar U G 1
Pre-departure preparation for Antarctica study abroad. Provides general introduction to the country so that learning opportunities in-country will be maximized. Prereq: Acceptance into the Antarctica Study Abroad. Not open to students with credit for EarthSc 5790.10. Cross-listed in EarthSc.

5790.11 Tanzania Study Abroad Seminar U G 3
Pre-departure preparation for Tanzania Study Abroad. Prereq: Acceptance into the Tanzania Study Abroad program.

5797.01 Study at a Foreign Institution: Australia U G 3
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Students pay OSU and other fees. Au, Sp, Su Sem. Prereq: Permission of dept chairperson. Not open to students with 30 cr hrs or 2 completions of 5797 (697). Repeatable to a maximum of 30 or hrs or 2 completions. This course is progress graded.

5797.02 Study at a Foreign Institution: Australia U G 3
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Students pay OSU and other fees. Prereq: Permission of resident director. Not open to students with 2 completions or 30 cr hrs of 5797 (697). This course is progress graded.

5797.03 Study at a Foreign Institution: New Zealand U G 3
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Students pay OSU and other fees. Prereq: Permission of resident director. Not open to students with 30 cr hrs or 2 completions of 5797 (697). This course is progress graded.

5797.04 Study at a Foreign Institution: New Zealand U G 3
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Students pay OSU and other fees. Prereq: Permission of resident director. Not open to students with 30 cr hrs or 2 completions of 5797 (697). This course is progress graded.

5797.05 Study at a Foreign Institution: Fiji U G 3
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Students pay OSU and other fees. Prereq: Permission of resident director. Not open to students with 2 completions of 5797 (697). This course is progress graded.
202 Environment and Natural Resources

5797.06 Study at a Foreign Institution: Iceland U G 3
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Students pay OSU and other fees. Prereq: Permission of department chairperson.

5797.07 Study at a Foreign Institution: Dominican Republic U G 3
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Students pay OSU and other fees. Prereq: Permission of the resident director. Not open to students with 2 completions of 5797 (697). This course is progress graded.

5797.08 Study at a Foreign Institution: China Research U G 3
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Students pay OSU and other fees. Prereq: Permission of the resident director. Not open to students with 2 completions of 5797 (697). This course is progress graded.

5797.09 Study at a Foreign Institution U G 1 - 15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Students pay OSU and other fees. Prereq: Permission of department chairperson. Not open to students with 2 completions or 30 cr hrs of 5797 (697). Repeatable to a maximum of 30 cr hrs or 2 completions. This course is progress graded.

5797.10 Study at a Foreign Institution: Antarctica U G 3
Two weeks of field studies in Antarctica and Ushuaia, Argentina. This course is a collaborative effort between Ohio State, American Universities International Programs, University of Canterbury, New Zealand, and Gateway Antarctica: Centre for Antarctic Studies and Research. Prereq: Acceptance into the Antarctica Study Abroad program. Concur: 5797.10. Not open to students with credit for EarthSc 5797.10. Cross-listed in EarthSc.

5797.11 Study at a Foreign Institution: Tanzania U G 3
Three weeks of field studies in Tanzania. Prereq: 5790.11.

6000 Research in Environment and Natural Resources G 2
The use of science and research to address natural resource problems; development of a thesis proposal. Au Sem. Prereq: Grad standing. Not open to students with credit for 800. This course is graded S/U.

6100 Advanced Principles in Environmental Science G 3
This course will cover principal concepts of environmental science including global environmental challenges. A major focus of the course will be to understand different global nutrient cycles and their linkages to pressing environmental issues. A special emphasis will be placed on the ecological and social science frameworks required to manage critical air, soil, and water resources.

6193 Individual Studies in Environment and Natural Resources G 1 - 3
Individual Studies in Environment and Natural Resources. Au, Sp, Su Sem. May Term. Prereq: Permission of instructor. Not open to students with 9 cr hrs for 6193 (693). Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

6194 Advanced Group Studies G 1 - 3
Group studies on the science and discipline of environmental and natural resources encompassed in various developing and special topics. Au, Sp Sem. Prereq: Permission of instructor. Not open to students with 6 cr hrs or 2 completions for 694. Repeatable to a maximum of 6 cr hrs or 2 completions.

6400 Theories in Environmental Social Sciences G 3
This course provides a broad, interdisciplinary overview of theories and frameworks for understanding and addressing environmental and natural resource management dilemmas. The primary goals of this course are to introduce graduate students to (1) theories that explain why/how human beings impact their environment, and (2) interdisciplinary frameworks for addressing environmental problems.

6510 Research Design for the Environmental Social Sciences G 3
Introduction to designing research for building and testing theory in environmental social science disciplines. Bridges qualitative and quantitative research approaches. Prereq: 6000, or permission of instructor. Not open to students with credit for 8510.

7004 Social-Ecological Systems G 3
This course provides an overview of frameworks, theories and methods used in the interdisciplinary study of social-ecological systems, including complex adaptive systems, resilience, institutional analysis, cultural evolution, ecosystem services, and coupled human and natural systems. Students will also learn how to effectively collaborate in interdisciplinary studies of social-ecological systems. Prereq: Grad standing. Not open to students with credit for Anthrop 7004. Cross-listed in Anthrop.

7150 Environment, Risk, and Decision Making G 3
Theory of individual and participatory decision making processes under risk and uncertainty and applications to improve decision making in environmental risk management contexts. Prereq: Not open to students with credit for 8150.

7191 MENR Internship G 3
Internship experience for Master of Environment and Natural Resources (MENR) program. Prereq: Enrollment in the Master of Environment and Natural Resources program.

7333 Successional Dynamics of Forests G 3
Analysis of past development of forest stands; examination of major processes causing changes over time in communities of trees. One or more all-day field trips. * Sp Sem (odd yrs). Prereq: Grad standing, and permission of instructor. Not open to students with credit for 733.

7380 Climate and Society G 3
Examines links between climatic changes and human societies and examines social influences on our current state of knowledge, impacts, and potential responses. Au Sem. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 838.

7400 Communicating Environmental Risk G 3
Introduction to the design and implementation of public-focused risk communication as it relates to environmental, agricultural and public health contexts.

7425 Collective Action in Environmental Governance G 3
Introduction to the theories and methods for evaluating collective action in environmental governance contexts. Prereq: Grad standing.

7430 Sustainability Psychology G 3
This course helps students expand their understanding of the psychological bases of environmental problems. It focuses on leveraging psychological tools to address such problems. Students learn about theories and methods relevant to behavior change, explore the applicability of these approaches to changing environmental behaviors, and gain practical experience doing this with real-world problems.

7450 Frameworks and Theories of Environmental Policy G 3
This course provides students with an in-depth look at the theories and frameworks that explain how governance systems in complex social-ecological systems (and the institutions that shape them) can successfully tackle environmental problems at the local, national, and international levels.

7480 Human Values and Nature Conservation G 3
This course makes a cross-disciplinary examination of theories of human values and related phenomena (e.g., value orientations, worldviews, moral foundations), explores their use in understanding conservation-related judgments, decisions, and behaviors, and discusses their implications for sustainability.

7520 Environmental Science and Law G 3
This course introduces students to the laws and legal systems that address environmental issues, with an emphasis on the significance of science and technology. Interdisciplinary case-studies will complement the coursework.

7530 Soils and Carbon: Stabilization and Permanence G 3
Soil carbon, globally, is larger than both atmospheric and terrestrial biomass carbon stocks, but how permanent is soil carbon and in what forms? Minerals play an important role in carbon stability and permanence. Students gain experience on methods to investigate soil carbon stabilization, mineralogy and soil carbon permanence, and mechanistic understanding of organo-mineral interactions.

7580 Root and Rhizosphere Ecology G 2
The rhizosphere mediates plant nutrient acquisition, sustains microbial communities, contributes to disease suppression, and regulates global nutrient cycles, directly impacting crop production and ecosystem services. This course will provide an overview of root morphology, root production and turnover, rhizosphere communities, nutrient cycling and rhizosphere responses to climate change.

7650 Applied Bayesian Hierarchical Models in Natural Resources G 3
This is an applied graduate-level course that will provide students with the skills to implement, diagnose, and interpret hierarchical models fit in a Bayesian framework.

7688 MENR Project G 1 - 3
Conducting and reporting MENR applied science project. Prereq: Grad standing, and permission of advisor. Not open to students with 9 cr hrs for 7688 (868). Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

7691 MENR Seminar G 1
Environmental professional practice-oriented seminars and forums. Prereq: Enrollment in the Master of Environment and Natural Resources (MENR) program. This course is graded S/U. Repeatable to a maximum of 4 cr hrs.

8375 Design of Natural Resource Studies G 3
This is a discussion-driven course that will emphasize student understanding of different types of study design, critical considerations when designing studies, and appropriate analytical approaches and inferential frameworks. The course is practical in that students can use this course as an opportunity to develop or flesh out the design of a study relevant to their graduate research.
Hands-on course intended to give students a broad overview and introduction to R, a language and environment for statistical computing and graphics.

Prereq: Chem 1220 (122) or 1250 (125), and enrollment in CivilEn major or EnvEng major or minor. Not open to students with credit for 620.

Provides groups of students opportunities to pursue special studies not otherwise offered.

Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

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Not open to students with credit for 620.

Supervised research and project work arranged individually for honors students.

Supervised undergraduate honors research on various topics in Environmental Engineering.

Culminating design course for the Environmental Engineering program. Must be taken as close to graduation as possible.

Friends of the Earth and other environmental organizations.

An overview of biotechnology methods for remediation of groundwater and soils. Overview of selection and design of unit operations and processes used in environmental engineering, which is the focus of the first portion of the course. In the second portion, students apply these concepts to develop predictive fate and transport models.

Opportunity for undergraduate students to conduct research in Civil and Environmental Engineering.

Limited to Civil and Environmental Engineering majors.

Selection and Design of Unit Operations and Processes used in Environmental Engineering. Prereq: Chem 1210 or 1250, and CivilEn or EnvEng major or EnvEng minor. Not open to students with credit for 6200.

Not open to students with credit for 520 or CivilEn 520.

Culminating design course for the Environmental Engineering program. Must be taken as close to graduation as possible.

Individual conferences, assigned readings, and reports on minor investigations.

Supervised research and project work arranged individually for honors students.

Supervised research and project work arranged individually for honors students.

Not open to students with credit for 620.

Prerequisite: Permission of instructor.

Provides groups of students opportunities to pursue special studies not otherwise offered.

Prerequisite: Permission of instructor.

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Environmental Engineering

5140 Air Quality Engineering U G 3
This course introduces several concepts which will provide students with a basic knowledge of several air quality issues. We will first discuss sources and classifications of air pollutants followed by a brief primer on relevant atmospheric science. Following this, we will focus on two aspects related to atmospheric chemistry: troposphere ozone formation and secondary aerosol production.
PreReq: Chem 1220, 1260, or equiv, and Math 2171, 2174, or 2415, and enrollment in CivilEn or EnvEngr major; or Grad standing; or permission of instructor.

5170 Sustainability and Pollution Prevention Practices U G 3
An introduction to concepts of sustainability and pollution prevention with particular application to solid waste generation, disposal and management.
PreReq: 3200 (511), or Grad standing, or permission of instructor. Not open to students with credit for 717.

5194 Group Studies in Environmental Engineering U G 1 - 5
Provides groups of students opportunities to pursue special studies not otherwise offered.
PreReq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

5195 Engineering Design for Environmental Health U G 3
Students in this course will learn how to incorporate health information into the engineering design process. This material complements risk assessment by focusing on the design of engineering systems. Course will discuss balancing financial, health, performance, and other considerations. Quantitative analysis will be conducted in soil, water, air, buildings, and occupational health scenarios.
PreReq: Math 1151, 1151.01, or 1161.02, and Chem 1210 or 1250, and enrollment in the CivilEn, EnvEngr, or PubHlth major program; or Grad standing; or permission of instructor.

5210 Advanced Physical Chemical Treatment Processes U G 3
Principles and design of physical and chemical processes for water and wastewater treatment including mixing, mass transfer, chemical kinetics, oxidation-reduction, disinfection, emerging contaminants, and water reuse.
PreReq: 3210 (520) or CivilEn 520, or Grad standing in Engineering or EarthSc, or permission of instructor. Not open to students with credit for CivilEn 810.

5217 Applied Mathematical Ecology U G 3
Description and application of basic methods to model population, communities and the interactions between ecosystems and the earth system.
PreReq: CivilEn 2060 (406) or equivalent, and Engr 2121 or CSE 1211, and enrollment in CivilEn or EnvEngr major; or Grad standing; or permission of instructor. Not open to students with credit for CivilEn 817.

5410 Hazardous Waste Management and Remediation U G 2
Environmental regulations; handling of hazardous wastes; risk assessment; site remediation processes; remedial alternatives; implementation; case studies.
PreReq: 3200 and CivilEn 3130, or Grad standing; or permission of instructor. Not open to students with credit for 714.

5600 Science, Engineering, and Public Policy U G 3
Presents a history of the interactions between science, engineering, and public policy in the United States and in the context of global concerns (e.g. climate change, competitiveness), inquire into how various federal government, universities, & corporations conduct & fund science and engineering & explore how public sector interests & processes influence sci, engr & public policy.
PreReq: Jr, Sr, or Grad standing; or permission of instructor. Cross-listed in PubAffs.

5718 Aquatic Chemistry U G 3
Examination of the processes that control chemical equilibrium in natural waters: acid-base reactions, metal complexation/speciation and oxidation-reduction processes. Intended for students in EarthSc, CivilEn, and the Grad EnvSci program.
PreReq: Chem 1220 or above, and Math 1151 or above; or equivalents. Not open to students with credit for EarthSc 5718. Cross-listed in EarthSc.

5719 Environmental Organic Chemistry U G 3
Fate and distribution of organic pollutants in the environment including aqueous solubility, vapor pressure, environmental partition coefficients, and transformation reactions. Intended for students in EarthSc, CivilEn, and the Grad EnvSci program.
PreReq: 5718 and Chem 4200, or permission of instructor. Not open to students with credit for EarthSc 5719. Cross-listed in EarthSc.

5760 Design of Urban Stormwater Control Measures U G 3
Modification of hydrologic methods for urban systems, urban pollutants of concern, stormwater regulations, low impact development, green infrastructure, design of stormwater control measures (SCMs), also known as Best Management Practices (BMPs), and discussions of stormwater control performance. Design focused projects that offer real world challenges, diverse set of methods, and data.
PreReq: CivilEn 3160 or FABEng 2720, or Grad standing in Engineering, or permission of instructor. Not open to students with credit for FABEng 5760. Cross-listed in FABEng.

5850 Advanced Topics in Environmental Engineering U G 1 - 3
Exploration of advanced topics in Environmental Engineering.
PreReq: Permission of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions.

5880 Environmental Engineering Seminar U G 1
Seminar course which presents current research findings on Environmental Engineering and science.
PreReq: Jr, Sr, or Grad standing in Environmental Engineering, and permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

6020 Foundations of Data-Driven Sustainable Energy Systems U G 3
Introduction to issues impacting sustainable energy systems across technology, law and policy, business models, resilience, data, geospatial, and decision sciences.
PreReq: Enrollment in Data-Driven Sustainable Energy Systems Graduate Interdisciplinary Specialization, or permission of instructor. Not open to students with credit for AEDEcon 6500, FABEng 6020, Geog 6020, ISE 6020, or PubAffs 6020. Cross-listed in AEDEcon 6500, FABEng 6020, Geog 6020, ISE 6020, and PubAffs 6020.

6100 Environmental Engineering Analytical Methods U G 3
Application of analytical methods to calculate, measure and interpret characteristics of water, soil, and air.
PreReq: Chem 1220 (122) or 1250 (125), or Grad standing. Not open to students with credit for 2101 (610) or CivilEn 610.

6193 Individual Studies in Environmental Engineering G 1 - 5
Individual conferences, assigned readings, and reports on minor investigations.
PreReq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

6194 Group Studies in Environmental Engineering G 1 - 5
Provides groups of students opportunities to pursue special studies not otherwise offered.
PreReq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

6200 Fundamentals of Environmental Engineering G 3
Quantitative assessment of water quality, air quality, and solid/hazardous waste management, with an emphasis on minimizing human health and environmental impacts through sustainable design.
PreReq: Chem 1220 (122) or 1250 (125), or Grad standing, or permission of instructor. Not open to students with credit for 3210 (521) or CivilEn 511.

6210 Environmental Engineering Unit Operations G 3
Selection and Design of Unit Operations and Processes used in Environmental Engineering.
PreReq: 413 or CivilEn 3130 (413), and Chem 1220 (122) or 1250 (125); or Grad standing; or permission of instructor. Not open to students with credit for 3210 (520) or CivilEn 520.

6218 Measurement and Modeling of Climate Change for Graduate Students G 3
The course will focus on the science behind climate change, and specifically on physical processes at the earth surface, and the interactions between the ecosystem, human activities and climate change. Design of data analysis research project, testing hypotheses regarding climate change and its effects using observational data, hands-on climate data analysis experience through personal project.
PreReq: Grad standing in CivilEn or EnvEng, or permission of instructor.

6220 Data Analysis in Environmental Engineering G 3
Application of programming and statistical methods for engineering data analysis. Will explore distribution, variance, and multivariate methods. Will provide a deeper understanding of analysis theories in the space, time, and spectral domain. Students will develop computer programming toolboxes and theoretical skills for analyzing and modeling data in their own research.
PreReq: Stat 3450, 3460, 3470, or CivilEn 2305, or equiv; and Grad standing in the Civil Engineering or Environmental Science Graduate programs.

6400 Integrated Environmental Chemical Fate and Transport for Graduate Students G 3
Fate and transport of pollutants within and between air, water, and soil. Understanding this fate and transport requires an understanding of thermodynamics and mass transfer concepts related to environmental engineering, which is the focus of the first portion of the course. In the second portion, students apply these concepts to develop predictive fate and transport models.
PreReq: Grad standing in Engr, or permission of instructor.

6500 Assessment for Human Rights and Sustainability G 3
Foundational concepts of human rights and environmental impacts pertaining to global supply chains. Regulations and voluntary standards in engineering-intensive sectors, including infrastructure, biofuels, electronics. Case study analysis of corporate assessment practices for labor rights protection and environmental impacts.
PreReq: Grad standing, or permission of instructor. Not open to students with credit for 4600.

6610 Analytic Frameworks for Analysis of Science, Engineering, and Policy G 3
Introduces a number of analytic frameworks and tools that are used to address issues where science and engineering are important considerations for public policy. Complements Engr/EnvEng/PubAffs 5600 'Science, Engineering, and Public Policy', which is a survey of the interconnectedness of science, engineering, and public policy.
PreReq: Grad standing, or permission of instructor.

6999 Environmental Engineering Research Thesis G 1 - 15
Research for thesis purposes only.
PreReq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 15 completions. This course is progress graded (S/J).
Environmental Engineering 205

2220 Biodiversity of Ohio - Birds U 2
The general biology of birds with emphasis on their natural histories and field identification of local species.
Prereq: 4 sem cr hrs in Biological Sciences. Not open to students with credit for 322.
2250 Dynamics of Dinosaurs U 2
A review of current information on dinosaur biology, emphasizing scientific approaches to reconstructing dinosaurs as living, dynamic animals.
Prereq: 4 sem cr hrs in Biological Sciences or Historical Geology.
2270 Parasites and Evolution: How Worms, Mosquitoes, etc. Manage Their/Our World U 2
Introduction to life history of and pathogenic causes by a number of parasites of invertebrates and vertebrates (including humans). Parasites and disease vectors are used to illustrate broad evolutionary and ecological concepts.
Prereq: 4 sem cr hrs in Biological Sciences.
2410 Biological Invasions: The Ecology and Evolution of Species Introductions U 3
Invasion ecology is the study of introduced, non-native species and the factors that sometimes lead to their population explosions and negative ecological impacts in the new region. This course will make explicit connections between fundamental concepts in ecology and evolutionary biology, topics specific to invasion ecology, and the idiosyncratic details surrounding particular invasive species.
Prereq: One course in Life Sciences (or a related field), or permission of instructor.
2510 Human Anatomy U 3
An introduction to human anatomy; small mammal dissection.
Prereq: 3 sem cr hrs in Biological Sciences. Not open to students with credit for 235. GE nat sci bio course. NS Admis Cond course.
2520 Human Physiology U 3
A survey of the human nervous system, sense organs, muscle function, circulation, respiration, digestion, metabolism, kidney function, and reproduction.
Prereq: 3 sem cr hrs in Biological Sciences. Not open to students with credit for 232. GE nat sci bio course. NS Admis Cond course.
3189 Undergraduate Field Experience or Work U 1 - 3
Field work or experience.
Prereq: 8 cr hrs in Biological Sciences. Repeatable to a maximum of 12 cr hrs or 5 completions. This course is progress graded (S/U).
3191 Undergraduate Internship U 1 - 3
Internship held as undergraduate for credit.
Prereq: 8 cr hrs in Biological Sciences, and permission of instructor. Repeatable to a maximum of 12 cr hrs or 5 completions. This course is graded S/U.
3193 Undergraduate Individual Studies U 1 - 3
Individual work in the field of the chosen problem.
Prereq: 8 cr hrs in Biological Sciences. Repeatable to a maximum of 12 cr hrs or 5 completions. This course is graded S/U.
3194 Undergraduate Group Studies U 1 - 3
Study of selected topics in evolution, ecology and organismal biology.
Prereq: 8 cr hrs in Biological Sciences. Repeatable to a maximum of 12 cr hrs or 3 completions.
3270 Infectious Disease Ecology, Evolution, and Transmission U 3
This course will focus on innate and adaptive immunity, host-pathogen evolution, phenotypic plasticity, host jump, wild life ecology, the role of social behavior, diet, habitat, geography, and life history in disease transmission in human and nonhuman animals. It will also cover research methods, common statistical and geospatial analyses in investigations of infectious diseases.
Prereq: Soph standing or above.
3310.01 Evolution U 4
Basic conceptual issues and processes in evolution with an emphasis on the ecological basis of adaptation and consequences of natural selection. Also available summer term at Stone Lab.
Prereq: Biology 1114 or 1114H, or permission of instructor. Not open to students with credit for 3310 or 3310.02.
3310.02 Evolution (Hybrid Online) U 4
This course surveys the many processes that underlie biological evolution and illustrates the patterns they generate, with a focus on adaptation, types of selection, population genetics, species interactions and biodiversity. This course is presented in a hybrid online format.
Prereq: Biology 1114 or 1114H, or permission of instructor. Not open to students with credit for 3310 or 3310.01.
3320 Organismal Diversity U 3
A survey of organismal diversity and the evolutionary relationships between and within major groups of organisms. Class is laboratory based.
Prereq: 3310. Not open to students with credit for 405.01 and 405.02.

Environmental Science

6193 Individual Studies in Environmental Sciences G 1 - 12
Afford the qualified student the opportunity for independent reading, study, practical experience, or laboratory work in specialized field of interest.
Prereq: Completion of high school Biology course. Not open to students with credit for 125. GE nat sci bio course. NS Admis Cond course.
6194 Group Studies G 1 - 5
Group studies in environmental sciences.
Prereq: Completion of high school Biology course. Not open to students with credit for 126.
7899 Current Issues in Environmental Sciences G 1
Graduate seminar where faculty from within and outside the University and graduating students will present their research.
Prereq: Completion of high school Biology course. Not open to students with credit for 125.

Evolution, Ecology and Organismal Biology

1910 Introduction to Biological Studies - Local Plants (Stone Lab) U 2
Structures, processes, and stages of the plant life cycle; common families of flowering plants; plant geography, ecology, and conservation; and uses of plants. 1-wk course available summer session at Stone Lab.
Prereq: Completion of high school Biology course. Not open to students with credit for 110.
1911 Climate Change: Mechanisms, Impacts, and Mitigation U 4
Examination of the basic science of climate change, of the ability to make accurate predictions of future climate, and of the implications for global sustainability by combining perspectives from the physical sciences, the biological sciences, and historical study. Team-taught with faculty members in EarthSc and History.
Prereq: Not open to students with credit for History 1911 or EarthSc 1911. GE historical study and nat sci bio and nat sci phys course. Cross-listed in EarthSc and History.
1920 Introduction to Biological Studies - Birds (Stone Lab) U 2
An introductory course for students interested in ornithology including bird identification, behavior, and ecology, with an emphasis on field and laboratory techniques. 1-wk course available summer session at Stone Lab.
Prereq: Completion of high school Biology course. Not open to students with credit for 126.
1930 Introduction to Biological Studies - Aquatic Biology (Stone Lab) U 2
An introduction to the organisms of the ecosystem in freshwater aquatic environments. 1-wk course available summer session at Stone Lab.
Prereq: Completion of high school Biology course. Not open to students with credit for 125.
2210 Biodiversity of Ohio - Plants U 2
A lecture and field course in identifying common Ohio plants; emphasis on taxonomic principles, use of keys and manuals, and field recognition of plants; includes some Saturday field trips.
Prereq: 4 sem cr hrs in Biological Sciences. Not open to students with credit for 210. NS Admis Cond course.
206  Evolution, Ecology and Organismal Biology

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3410</td>
<td>Ecology</td>
<td>4</td>
</tr>
<tr>
<td>3420</td>
<td>Comparative Physiology</td>
<td>4</td>
</tr>
<tr>
<td>3420E</td>
<td>Comparative Animal Behaviors (Honors Embedded)</td>
<td>4</td>
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<tr>
<td>3494</td>
<td>Entering Independent Research</td>
<td>U 3</td>
</tr>
<tr>
<td>3498</td>
<td>Undergraduate Research in Behavioral Ecology</td>
<td>U 4</td>
</tr>
<tr>
<td>3510</td>
<td>Cellular and Developmental Biology</td>
<td>U 3</td>
</tr>
<tr>
<td>3520</td>
<td>Microscopic Anatomy</td>
<td>U 3</td>
</tr>
<tr>
<td>3798</td>
<td>Undergraduate Study Tour</td>
<td>U 1 - 12</td>
</tr>
<tr>
<td>4210</td>
<td>Focused Study of Ecology and Evolution - Vertebrates</td>
<td>U 2</td>
</tr>
<tr>
<td>4220</td>
<td>Focused Study of Ecology and Evolution - Mammals</td>
<td>U 3</td>
</tr>
<tr>
<td>4230</td>
<td>Focused Study of Ecology and Evolution - Invertebrates</td>
<td>U 2</td>
</tr>
<tr>
<td>4240</td>
<td>Focused Study of Ecology and Evolution - Plants and People</td>
<td>U 3</td>
</tr>
<tr>
<td>4410</td>
<td>Conservation Biology</td>
<td>U 3</td>
</tr>
<tr>
<td>4420H</td>
<td>Tropical Field Studies</td>
<td>U 3</td>
</tr>
<tr>
<td>4430</td>
<td>Ecological Methods I</td>
<td>U 2</td>
</tr>
<tr>
<td>4510</td>
<td>Comparative Vertebrate Anatomy</td>
<td>U 3</td>
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<tr>
<td>4520</td>
<td>Comparative Physiology</td>
<td>U 3</td>
</tr>
<tr>
<td>4550</td>
<td>Neurobiology of Behavior</td>
<td>U 3</td>
</tr>
<tr>
<td>4560</td>
<td>Comparative Endocrinology</td>
<td>U 2</td>
</tr>
<tr>
<td>4590</td>
<td>Field Ecology (Stone Lab)</td>
<td>U 2</td>
</tr>
<tr>
<td>4690</td>
<td>Undergraduate Seminar in Mathematical Biology Research</td>
<td>U 1</td>
</tr>
<tr>
<td>4699</td>
<td>Undergraduate Research</td>
<td>U 1 - 12</td>
</tr>
<tr>
<td>4999</td>
<td>Undergraduate Thesis Research</td>
<td>U 1 - 12</td>
</tr>
<tr>
<td>5110</td>
<td>Spider Biology - Stone Lab</td>
<td>U G 2</td>
</tr>
<tr>
<td>5310</td>
<td>Advanced Principles of Evolution</td>
<td>U 3</td>
</tr>
<tr>
<td>5320</td>
<td>Society and Evolution</td>
<td>U G 3</td>
</tr>
<tr>
<td>5330</td>
<td>Population Genetics &amp; Phylogeography</td>
<td>U G 3</td>
</tr>
<tr>
<td>5340</td>
<td>Evolution and Taxonomy of Vascular Plants</td>
<td>U G 4</td>
</tr>
</tbody>
</table>

Distribution and abundance of species, population dynamics, community ecology, ecosystem dynamics, and applied perspectives. Also available summer term at Stone Lab. Prereq: Biology 1114 or 1114H, or permission of instructor. Not open to students with credit for 503.01, 503.02, and 503.03.

Comparative study of animal behaviors, and analysis of their adaptive value, physiological mechanisms, development, and evolution, within their ecological and social context. Also available summer session at Stone Lab. Prereq: Biology 1114 or 1114H, or permission of instructor. Not open to students with credit for 440, 620, 730, or 740.

Comparative study of animal behaviors, and analysis of their adaptive value, physiological mechanisms, development, and evolution, within their ecological and social context. Prereq: Biology 1114 or 1114H, or permission of instructor. Not open to students with credit for 440, 620, 730, or 740.

Designed to equip students in the Natural and Mathematical Sciences with necessary skills to become independent researchers. The main emphasis is given to experimental methods, experimental and quasi-experimental design, hypothesis testing, sampling, research ethics, basic statistics, and presentation of data.

Supervised independent research opportunities in behavioral ecology for undergraduates considering careers in basic scientific research, secondary education, or graduate research programs in biological and behavioral sciences. Formal instruction on experimental research design, literature review, research ethics, and elementary statistical analyses. Prereq: Biology 1113, 1113H, 1114, 1114H, or Soph standing or above; or permission of instructor.

Introduction to the structure and function of animal cells, and to patterns of early development in vertebrates and invertebrates. Prereq: 3310, and Biology 1113 or 1113H. Not open to students with credit for 415 and MolGen 5602.

Examination and analysis of the functional morphology of cells and tissues of vertebrate animals, with emphasis on mammalian histology. Prereq: Biology 1113 (113), 1114 (114), 1113H (115H), or 1114H (116H).

Undergraduate study tour. Prereq: 8 sem cr hrs in Biological Sciences, and permission of instructor. Not open to students with credit for 868. This course is graded S/U.

Analysis of the anatomical, physiological, behavioral, and ecological characteristics of the major vertebrate groups. Prereq: 3410. Not open to students with credit for 470.

Mammals of the world, their natural history, distribution, taxonomy, and major anatomical and physiological adaptations; study of local species emphasized in lab. Prereq: 3310.

Analysis of the anatomical, physiological, behavioral and ecological characteristics of the major invertebrate groups. Prereq: 3310.

Overview of the importance of plants to humans. Students will gain an understanding of the interrelations between humans and plants, including plant domestication, history and uses of spices and flavorings derived from plants, as well as non-food uses of plants. Recommended prereq: previous or concurrent enrollment in EEOB 2210. Prereq: 1 course in Biological Sciences (Plant Biology Preferred). Not open to students with credit for 502.

Application of ecology, population genetics, and biogeography to the study and conservation of biodiversity, threatened communities, and endangered species. Prereq: 3310 and 3410, or permission of instructor. Not open to students with credit for 661.

This course will give students first-hand knowledge of tropical biology with an emphasis on evolutionary and behavioral ecology. This is an intensive foreign study tour in Panama, a country renowned for its biological diversity. The course includes travel to several tropical habitats and experiences with common field methods in ecology and animal behavior. Prereq: Honors standing, and 3310 or 3410; or permission of instructor.

Hands-on course for learning basic field and quantitative methods for ecological studies. Prereq: Biology 1114 or 1114H. Repeatable to a maximum of 8 cr hrs or 4 completions.
Evolution, Ecology and Organismal Biology 207

5350 Evolutionary Ecology U G 3
This course explores the interactions among evolutionary and ecological patterns and processes, including evolutionary approaches to understanding life histories, reproductive and social behavior, host-pathogen, predator-prey and other interspecific interactions, evolutionary conservation biology and eco-evolutionary dynamics.
Prereq: 3310.01, 3310.02, 3240, 3240H, or 3240E, or permission of instructor.

5410 Aquatic Ecosystems - Ocean Ecology U G 1½
Diversity and distribution of marine organisms; population dynamics, productivity, and structure of marine ecosystems; human impact on ocean resources.
Prereq: 3410; or Grad standing. Not open to students with credit for 505.

5420 Aquatic Ecosystems - Ecology of Inland Waters U G 1½ - 4
A study of the physical, chemical, and biological factors influencing the biological productivity of inland waters, and of techniques and equipment used in evaluating them. Also available summer session at Stone Lab.
Prereq: 3410; or Grad standing, or permission of instructor. Not open to students with credit for 647 and 655.

5430 Fish Ecology U G 3
Lecture emphasis on the behavior, migration, distribution, and evolution of fish; laboratory emphasis on ecological and systematic ichthyology. Lab fee required.
Prereq: 3410; or Grad standing, or permission of instructor. Not open to students with credit for 621 and 626.

5440 Plankton Ecology U G 3
Material in this course focuses on the ecology of freshwater plankton (both phytoplankton and zooplankton) and the advanced study of lake ecology. The study of plankton ecology is central to understanding lake food web structure and production, which is important to fisheries, biogeochemistry, and freshwater responses to anthropogenic activities.
Preq: 5420

5450 Population Ecology U G 3
Quantitative study of the concepts, methods, and applications of population ecology.
Prereq: 3410; or Grad standing. Not open to students with credit for 671.

5460 Physiological Ecology U G 3
Study of the physiological adjustment, tolerance, and acclimatization to the abiotic and biotic environment by animals and plants.
Prereq: 3410; or Grad standing. Not open to students with credit for 654.01 and 674.

5470 Community and Ecosystem Ecology U G 3
A quantitative and descriptive approach to the establishment, development, succession, and dynamics of communities and their interrelations with historic, climatic, soil, and biotic factors.
Preq: 3410; or Grad standing. Not open to students with credit for 700 or 720.

5480 Advanced Plant Ecology U G 3
Plants are central to many of the ecological and evolutionary dynamics that drive variation in community structure and ecosystem functioning. In this course we will learn about and critically appraise major themes in plant ecology, covering key topics from ecophysiology, population biology, interspecific interactions, community ecology, and biogeography.
Preq: 3410.

5490 Insect Behavior: Mechanisms and Function U G 3
Understanding the mechanisms and evolution of insect behavior and communication. Course will address behavioral physiology and ecology, socially, learning and cognition, as well as applied aspects of insect behavior.
Preq: Jr standing, or permission of instructor. Not open to students with credit for Entomol 5420 or 5480. Cross-listed in Entomol.

5510S Translating Evolution U G 3
Hands-on study of the theory and practice of informal science education, with an emphasis on the translation of concepts and research on evolutionary biology to non-specialist audiences.
Preq: 3310 or 3310.01 or 3310.02, or Biology 1114 or 1114H and 3 additional credit hours in Biological Sciences.

5798 Tropical Behavioral Ecology and Evolution U G 3
Focus on the evolutionary processes that shape the ecology and behavior of vertebrate systems in a diverse tropical forest with a special emphasis on symbiosis. Students will build skills in proposal writing, experimental design, and field research conducted at the world renowned Smithsonian Tropical Research Institute in Panama.
Preq: 3150 (Adams) or 8996.02 (Adams). Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

5910 Evolution and Ecology of Reptiles and Amphibians U G 2
Study of the evolution and ecology of reptiles and amphibians, with emphasis on the fauna of Ohio.
Preq: 12 sem cr hrs of Biological Sciences, and GPA 2.5 or above, and Jr standing or above, or permission of instructor. Not open to students with credit for 622.

5911 Tropical Herpetology U G 4
Field course on the study of reptiles and amphibians, with emphasis on tropical species identification, field techniques and methods, population ecology, and conservation strategies. Course will be conducted at a tropical field site such as the Biological Field Station El Zota, Tapeczco, Costa Rica.
Preq: GPA of 2.5 or above, completion of 12 semester cr hrs of biological sciences, and Jr standing or above by autumn of enrollment; permission of instructor.

5930 Ichthyology (Stone Lab) U G 3 - 4
Study of the distribution and classification of fishes, which includes methods of identification, collection, and preservation. Available summer session at Stone Lab.
Preq: GPA 2.5 or above, and Jr standing or above, and 12 sem cr hrs in Biological Sciences; or permission of instructor. Not open to students with credit for 621.

5940 Field Zoology (Stone Lab) U G 3 - 4
Field and laboratory identification of aquatic and terrestrial vertebrates and invertebrates of the region, in relation to habitats occupied. Available summer session at Stone Lab.
Preq: GPA 2.5 or above, and Jr standing or above, and 12 sem cr hrs in Biological Sciences; or permission of instructor. Not open to students with credit for 651.

5970 Larval Fish Identification Workshop (Stone Lab) U G ½
Workshop on the techniques involved with the collection and identification of common larval fishes of the Lake Erie drainage basin. 1-day course available summer session at Stone Lab.
Preq: 12 sem cr hrs of Biological Sciences, and GPA 2.5 or above, and Jr standing or above, or permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

6193 Graduate Individual Studies G 1 - 3
Individual work in the field of the chosen problem.
Preq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 8 completions. This course is graded SU.

6194 Graduate Group Studies G 1 - 3
Group work in the field of the chosen problem.
Preq: Grad standing, or permission of instructor. Repeatable to a maximum of 24 cr hrs or 8 completions.

6210 Ecotoxicology G 2 - 4
Technical examination of the environmental fate and toxicity of organic xenobiotics, inorganics, and metals; emphasis on chemistry of interactions with physical environment, fugacity models, risk assessment, and predictive toxicology.
Preq: 3410, or Chem 2510 and 2520 or equiv, or Grad standing, or permission of instructor.
Not open to students with credit for Entmol 762.

6310 Molecular Evolution G 3
The genetic basis of evolution and the molecular mechanisms of evolution.
Preq: 3310, 5310, MolGen 4500, 5060, or equiv. Not open to students with credit for 640 or MolGen 640.

6330 Phylogenetic Methods G 4
Methods for phylogenetic analysis: cladistics, maximum likelihood, Bayesian approaches; character coding and data management.
Preq: Permission of instructor. Not open to students with credit for 626.

6620 Scientific Writing in Evolution & Ecology: Manuscripts G 1½
This graduate-level course focuses on improving the scientific writing ability of students. This course will focus specifically on writing scientific manuscripts. During the course, students will learn how to approach the writing process, practice writing, and learn to effectively critique their own writing and that of others.
This course is graded SU.

6630 Scientific Writing in Evolution & Ecology: Proposals G 1½
This graduate-level course focuses on improving the scientific writing ability of students. This course will focus specifically on writing scientific proposals. During the course, students will learn how to approach the proposal writing process, practice writing, and learn to effectively critique their own writing and that of others.
This course is graded SU.

6999 Research for Thesis G 1 - 12
Research for masters thesis.
Preq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions. This course is graded SU.

7210 Molecular Methods in Evolution and Ecology G 1
Hands-on course for learning the use of molecular markers in evolutionary and ecological studies.
Preq: 3310 or 3410, and 8 additional sem cr hrs of coursework in EEOB; or Grad standing.
Not open to students with credit for 713.

7220 Modeling in Evolutionary Ecology G 4
Optimization models in evolutionary ecology, including dynamic optimization, evolutionary game theory, and adaptive dynamic models.
Preq: Permission of instructor. Not open to students with credit for 714.01 and 714.02.

7890 Agricultural Acarology G 4
An intensive review of mites associated with crops, ornamental plants, and stored food products with emphasis on taxonomy and ecology of these animals.
Preq: Permission of instructor. Repeatable to a maximum of 8 cr hrs.

7891 Medical-Veterinary Acarology G 4
The mites associated with humans, domestic animals, and wildlife, stressing their ecology and behavior in relation to transmission of viral, rickettsial, bacterial, and protozoan diseases.
Preq: Permission of instructor. Repeatable to a maximum of 8 cr hrs.
208 Evolution, Ecology and Organismal Biology

8194 Graduate Group Studies  G  1 - 3
Group work in the field of a chosen problem.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 24 cr hrs or 8 completions.

8894 EEOB Graduate Student Seminar  G  1 - 2
Required of all graduate students in evolution, ecology, and organismal biology during first Autumn semester of registration.
Repeatable to a maximum of 4 cr or 2 completions. This course is graded S/U.

8896.01 EEOB Graduate Seminar: Anatomy and Physiology  G  1 - 2
Current topics in anatomy and physiology as related to evolution, ecology, and organismal biology.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions. This course is graded S/U.

8896.02 EEOB Graduate Seminar: Behavior  G  1 - 2
Current topics in behavior as related to evolution, ecology, and organismal biology.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions. This course is graded S/U.

8896.04 EEOB Graduate Seminar: Ecology  G  1 - 2
Current topics in general ecology as related to evolution, ecology, and organismal biology.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions. This course is graded S/U.

8896.05 EEOB Graduate Seminar: Evolution  G  1 - 2
Current topics in evolution as related to evolution, ecology, and organismal biology.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions. This course is graded S/U.

8896.06 EEOB Graduate Seminar: Marine Biology  G  1 - 2
Current topics in marine biology as related to evolution, ecology, and organismal biology.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions. This course is graded S/U.

8896.07 EEOB Graduate Seminar: Wildlife Biology  G  1 - 2
Current topics in wildlife biology as related to evolution, ecology, and organismal biology.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions. This course is graded S/U.

8896.08 EEOB Graduate Seminar: Fisheries Biology  G  1 - 2
Current topics in fisheries biology as related to evolution, ecology, and organismal biology.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions. This course is graded S/U.

8896.09 EEOB Graduate Seminar: Ecotoxicology  G  1 - 2
Current topics in ecotoxicology as related to evolution, ecology, and organismal biology.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions. This course is graded S/U.

8896.10 EEOB Graduate Seminar: Systematics  G  1 - 2
Current topics in systematics as related to evolution, ecology, and organismal biology.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions. This course is graded S/U.

8896.11 EEOB Graduate Seminar: Population Ecology  G  1 - 2
Current topics in population ecology as related to evolution, ecology, and organismal biology.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions. This course is graded S/U.

8896.12 EEOB Graduate Seminar: Molecular Ecology  G  1 - 2
Current topics in molecular ecology as related to evolution, ecology, and organismal biology.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions. This course is graded S/U.

8896.13 EEOB Graduate Seminar: Physiological Ecology  G  1 - 2
Current topics in physiological ecology as related to evolution, ecology, and organismal biology.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions. This course is graded S/U.

8896.14 EEOB Graduate Seminar: Aquatic Ecology  G  1 - 2
Current topics in aquatic ecology as related to evolution, ecology, and organismal biology.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions. This course is graded S/U.

8896.15 EEOB Graduate Seminar: Population Genetics  G  1 - 2
Current topics in population genetics as related to evolution, ecology, and organismal biology.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions. This course is graded S/U.

8896.17 EEOB Graduate Seminar: Invertebrate Zoology  G  1 - 2
Current topics in invertebrate zoology as related to evolution, ecology, and organismal biology that vary with the interests of the students and instructor.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions. This course is graded S/U.

8896.18 EEOB Grad Seminar: Behavioral Ecology  G  1 - 2
Current topics in behavioral ecology as related to evolution, ecology, and organismal biology.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions. This course is graded S/U.

8896.19 EEOB Grad Seminar: Current Topics in Quantitative Methods  G  1 - 2
Current topics in quantitative methods as related to evolution, ecology, and organismal biology.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions. This course is graded S/U.

8999 Research for Dissertation  G  1 - 12
Research for dissertation.
Prereq: Grad standing, and permission of instructor. Repeatable to a maximum of 27 cr hrs or 12 completions. This course is graded S/U.

1100.01 University Exploration Survey  U  1
Introduction to the process of decision making and exploring majors at Ohio State; introduction to university community; strategies for successful transition to and participation in that community; university resources and procedures.
Prereq: Fresh standing in Exp, and permission of instructor. Not open to students with credit for 100.01, 100.01H, 100.02, or 100.03.

1100.01E University Exploration Honors Survey  U  1
Introduction to the process of decision making and exploring majors at Ohio State; introduction to university community; strategies for successful transition to and participation in that community; university resources and procedures.
Prereq: Transfer student in EXP, and permission of instructor. Not open to students with credit for a university survey course from another college or with credit for: 1100.01 (100.01), 1100.01H (100.01H), 1100.02, 1100.03, UASAT 100, 100.11, or 100.21.

1500 Student Tech for Academic Success  U  3
This course is designed to help students with the transition from high school to college level academics by improving study skills, regulating academic behaviors and continuing personal development. This course is designed to promote your self-awareness. This hands-on, active-learning course will also teach students how to engage with mobile technology for academic advancement and organization.
Prereq: Permission of instructor.

2000 Major Exploration for Continuing Students  U  1
The How to Re-decide course is a seven week, one credit hour course which meets once a week with one additional hour of online material per week. The course guides students through the re-deciding process and formulating a new academic plan at OSU by exploring potential majors through assessments, exposure to OSU degrees and various ways to explore and determine the best fit.
Prereq: Not open to students with credit for 1100.01 or 1100.02.

2100 Spring Forward Summer Experience: Strategies for Academic and Personal Success  U  1
EXP 2100 provides opportunities to strengthen academic resiliency, by focusing on skills and strategies in and out of the classroom that impact a student's academic success. Students work to better understand themselves and their goals and strengthen their connections to Ohio State and its resources. This course builds on prior strategies covered in learning strategies courses.
2271 Introduction to Film Studies for Majors U 3
An introduction to the field of Film Studies based on a survey of the major theories of film analysis, specifically geared for incoming majors.
Prereq: English 2260 (263), or HistArt 2901 (290). Not open to students with credit for 2270 (270). GE VPA course.

2367.01 The American Film Auteur U 3
An intermediate course centering around the work of one important US film maker that extends and refines expository writing and analytic reading / viewing skills.
Prereq: English 1110 (110) and Soph standing, or enrollment in Film Studies major. Repeatable to a maximum of 6 cr hrs. GE writing and comm course: level 2.

2367.02 The American Film Genre U 3
An intermediate course centering around the works of one important US film genre that extends and refines expository writing and analytic reading / viewing skills.
Prereq: English 1110 (110) and Soph standing, or enrollment in Film Studies major. Repeatable to a maximum of 6 cr hrs. GE writing and comm course: level 2.

3660 Documentary Film Studies U 3
An upper-level course in documentary geared toward film studies majors.
Prereq: 2270 or 2271, or permission of instructor. Repeatable to a maximum of 9 cr hrs.

4191 Film Studies Internship / Field Practicum U 1 - 2
An opportunity for work experience and on-the-job learning in film studies or film production related employment.
Prereq: Permission of program director, and enrollment in Film Studies major. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

4194 Group Studies U 1 - 3
Group studies for work in various fields of film studies not normally offered in courses.
Repeatable to a maximum of 6 cr hrs or 3 completions.

4640 Studies in Cinema History U 3
An upper-level course on aspects of film history geared toward film studies majors.
Prereq: 2270 or 2271, or permission of instructor. Repeatable to a maximum of 9 cr hrs.

4650 Studies in Regional Cinema U 3
An upper-level course on topics in a (sub-)national, geographic, or cultural region’s cinema conducted in English and geared toward film studies majors.
Prereq: 2270 or 2271, or permission of instructor. Repeatable to a maximum of 9 cr hrs.

4800 Story Development for Film and Television U 3
In this course, students will harness their pre-existing critical thinking skills and historical knowledge to develop a personal statement-of-purpose that enables them to generate and refine their own original film and television concepts for subsequent production projects.
Prereq: Permission of instructor. Not available for students with credit for FilmStd 4194 AU 14 or English 4800. Cross-listed in English.

4880 Screenwriting and the Business of Cinema U 3
This course examines screenwriting as both a literary art form and a challenging profession.
Prereq: Theatre 5331 (636), or permission of instructor. Not open to credit with credit for 680.

4881 Screenwriting and the Business of Television U 3
This course examines television writing from both a creative and business perspective. Each student will individually pitch, and then write the show’s bible, outline, and pilot. Students learn about teleplay structure, as well as ways to develop intriguing characters, realistic dialogue, and engaging episodes. In small groups students develop, write, and read others’ work collectively.
Prereq: Theatre 5331 or permission of instructor. Not available to students with credit for 5194 Sp15.

4890 Advanced Screenwriting U 3
An intensive writing course in which each student completes a feature-length screenplay based on work previously completed in Film Studies 680 or Film Studies 4860.
Prereq: 4880 (680), and permission of director. Not open to students with credit for 690.

4895 Advanced Seminar: Topics in Film Studies U 3
Selected problems (themes, movements, theories, genres, styles, etc.) in film studies; topics vary per semester.
Prereq: Enrollment in FilmSTD major, and Sr standing, or permission of instructor. Repeatable to a maximum of 15 cr hrs.

4998 Undergraduate Research U 1 - 9
Undergraduate research or creative activities in variable topics.
Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

4999 Distinction Project U 2 - 12
Completion of a distinction project developed in consultation with advisor.
Prereq: Sr Standing, and permission of instructor. This course is graded S/U.

4999H Honors Thesis U 2 - 12
Completion of an honors thesis. Should be scheduled in consultation with advisor. Topics vary.
Prereq: Honors, Sr standing, and permission of instructor. This course is graded S/U.

5193 Individual Studies U G 1 - 3
Students may register for individual directed study under this number for work in various fields of film studies not normally offered in courses.
Prereq: Permission of program director. Repeatable to a maximum of 6 cr hrs or 3 completions. This course is graded S/U.

5600 Pathways in Film Practice and Theory U G 3
Explorations of the rich interconnections between the understanding and the production of moving-image works. Students will be introduced to alternative modes of the moving image in the context of other modes of artistic expression and critical thought, with the aim of increasing intellectual breadth and production skills.
Prereq: 2271, or Grad standing; or permission of program. Repeatable to a maximum of 6 cr hrs.

7000 Graduate Studies in Film History G 3
Study of the social, industrial, technological, and intellectual history of cinema, including cinema's relationships to modernity and its transnational developments.
Prereq: Grad standing, or permission of instructor.

7001 Advanced Theory Seminar: Methods and Applications G 3
A theory and methods seminar which focuses on one scholarly approach to cinema (auteurism, formalism, historicism, feminism, etc).
Repeatable to a maximum of 9 cr hrs.

7191 Graduate Internship G 1 - 3
An opportunity for work experience and on-the-job learning in film studies or film production related employment.
Prereq: Permission of director of graduate studies or program director. Repeatable to a maximum of 12 cr hrs or 4 completions. This course is graded S/U.

7193 Graduate Independent Study G 1 - 3
Graduate independent study. Students may register to pursue study in various fields of film studies not normally offered in courses.
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 4 completions.

7999 MA Thesis Research G 1 - 3
Research for M.A. Thesis.
Prereq: Permission of instructor and director of graduate studies or program director. Repeatable to a maximum of 12 cr hrs or 4 completions.

Food Science and Technology

1100 Exploring Food Science and Technology U ½
Basic understanding of the global trends within food science and technology, the diversity of career opportunities within the industry, planning for a career and opportunities for professional development.

1110 Chocolate Science U 1
Introduction to science and business of chocolate. Students develop and market a chocolate product as part of a virtual company. Students taste commercial products.
Prereq: Not open to students with credit for 101.

1120 Wine and Beer in Western Culture U 2
The role of wine and beer in western culture with emphasis on the geographic origins, production techniques, and stylistic considerations.
Prereq: Not open to students with credit for 170.

1140 Kitchen Science U 2
Students will be introduced to sanitation rules, basic culinary/baking methods, fundamentals of cooking & the science behind its methodology. Students will also gain an understanding of common foods & their function in cooking. Class will provide demonstration & explanation of a number of cooking techniques & methodology of each formulation will be explained on a scientific basis.
Prereq: Chem 1110 or Biology 1101, or equiv.

1150 Caffeine Science U 1
Explore the science of caffeine and production of caffeinated products , how it affects the human body along with a study of the historical importance of some of today’s most popular caffeine sources.

2193 Individual Studies U 1 - 3
Individual study course to permit undergraduate students to explore in-depth selected areas of food science and nutrition.
Prereq: GPA 2.5 or above, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 2 completions. This course is progress graded (S/U).

2200 The Science of Food U 3
Food and nutrition in modern health; principles involved in digestion, metabolism and contribution of food to diseases processes, including food poisoning and the role of science, biotechnology and processing in meeting health and food needs.
Prereq: Biology 1101 (101) or 1113 (113). Not open to students with credit for 201. GE nat sci too course.
210 Food Science and Technology

2400 Introduction to Food Processing  U  3
Introductionary class applying chemistry, biology, and engineering to hands-on experience on the production and evaluation of foods. Includes basic food regulations, sanitation and formulation. Prereq: Biology 1101 (101) or 1113 (113), and Chem 1110 (101) or 1210 (121). Not open to students with credit for 401.

2410 Brewing Science  U  2
Science and practices of beer production including hop and barley cultivation, the science of malting and fermentation, flavor development and beer processing. Prereq: Biology 1101 (101) or 1113 (113), and Chem 1110 (101) or 1210 (121). Not open to students with credit for 411.

3400 Food Supply-Chain Equipment Operations  U  2
The focus of this course is description of equipment used throughout the food supply chain from harvesting/assembly to preparation for consumption. After completing this course, students will recognize how equipment systems are assembled within a facility and the role of sensing and control systems in operation of facilities for handling, manufacturing, storage, distribution and preparation of foods. Cross-listed in AgSysMt.

4191 Internship  U  1
Twelve weeks of structured in-depth industrial experience in selected food related subjects. Experience must be obtained with an organization approved by the department. Prereq: 12 cr hrs at the 5000-level or above in major field, and enrollment in FdsScTe, and permission of instructor. Not open to students with credit for 589. Repeatable to a maximum of 2 or hrs. This course is graded S/U.

4193 Individual Studies  U  1 - 3
Individual study course to permit undergraduate students to explore in-depth selected areas of food science and nutrition. Prereq: Permission of instructor. Not open to students with credit for 493. Repeatable to a maximum of 6 cr hrs or 2 completions. This course is progress graded (S/U).

4194 Group Studies  U  1 - 3
Group studies on selected topics in food science and nutrition. Prereq: Permission of instructor. Not open to students with credit for 494.

4410 Hazard Analysis and Critical Control Points (HACCP)  U  2
Teaches the basics of HACCP. Upon completion of the course, students will understand the relationship of GMPs (Good Manufacturing Practices), SSOPs (Sanitation Standard Operating Procedures), pre-HACCP steps and the Seven-Principles of HACCP. The students will select a food processing operation and develop a HACCP plan. Prereq: 2400.

4536 Food Safety and Public Health  U  2
Principles and practice of food safety; transmission, inactivation and control of foodborne pathogens, hazards, toxins and allergens; risk assessment, sanitation, and pest control in foods. Prereq: Micrbio 4000 (Micrbiol 509). Not open to students with credit for 536 or PubHEHS 4530 (530). Cross-listed in PubHEHS 4530.

4597.01 Alcohol and Society  U  3
The historical, nutritional, medical, social, technical, and economic aspects of the use of beverage and industrial alcohol. Prereq: Jr standing. Not open to students with credit for 597.01. GE cross-disciplinary seminar course.

4597.02 Food and Health Controversies in the 21st Century  U  3
Students will investigate such topics as food labeling and processing, including the natural and organic labels and science behind biotech foods. Other topics of discussion include diets and obesity in developed countries, relevant food ingredients such as sweeteners and caffeine and a global look at food aid and trade of agricultural goods. GE cross-disciplinary seminar course.

4600 Food Composition and Function  U  2
The purpose of this course will be to provide students a comprehensive introduction to the diverse and modern topics in Food Composition and Function. At the end of the course, students should have clear understanding of the macro-components of foods, understand basic food chemistry principles, and understand the composition-function relationship in foods. Prereq: Biology 1101 or 1113, and Chem 1110 or 1210.

4999 Research with Distinction  U  1 - 5
Conducting and reporting research with Distinction. Students are expected to present at the CFAES Undergraduate Research Forum and the Denman University Undergraduate Research Forum. Prereq: CPHR 3.0 or above, and GPA 3.0 or above in FdsScTe, and permission of project supervisor. Not open to students with credit for 638H. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is progress graded (S/U).

4999H Honors Research with Distinction  U  1 - 3
Conducting and reporting research with Distinction. Students are expected to present at the CFAES Undergraduate Research Forum and the Denman University Undergraduate Research Forum. Prereq: Honors standing, and FAsE 4500.01H (550H), and CPHR 3.4 or above, and GPA 3.4 or above in FdsScTe, and permission of honors project supervisor. Not open to students with credit for 638H. Repeatable to a maximum of 6 cr hrs or 3 completions. This course is graded S/U.

5310 Food Quality Assurance  U  3
Provides students with a knowledge of quality assurance concepts and procedures and tools for establishing quality control programs to produce high quality safe foods. Prereq: 2400 and Stat 1430 or 1450 or equiv., or Grad standing.

5320 Food Laws and Regulations  U  2
Major food laws/regulations, food regulatory agencies, good manufacturing practices, HACCP, ingredients, labeling regulations, adulteration and misbranding, compliance/investigations/enforcements, crisis management, recall, Ohio State food laws. Prereq: 2400 (401), or Grad standing, or permission of instructor. Not open to students with credit for 546.

5330 Food Plant Management  U  2
Covers the essentials of food plant operations from a business and management, rather than a scientific or technical, perspective. Prereq: 2400 and Stat 1350 or equivalent, or Grad standing. Not open to students with credit for 648.

5400 Unit Operations in Food Processing  U  3
Study of unit operations in preserving foods by thermal and alternative food processing methods through problem solving and experimentation. Interdependence of food engineering, chemistry, and microbiology principles in food preservation. Prereq: 2400, FABEng 3481 (481), and MicrBio 4000 (Micrbiol 509), or permission of instructor. Not open to students with credit for 630 or FABEng 4410 (584). Cross-listed in FABEng 4410.

5410 Fruit and Vegetable Processing  U  3
Composition of fruits and vegetables, how this affects quality during processing, principles, equipment and quality changes during common processing methods, including juicing, drying, freezing, canning, and jelly manufacture. Prereq: 2400, or Grad standing. Not open to students with credit for 613.

5420 Dairy Processing  U  3
Principles involved in the production, processing and safety of high quality milk and milk products. Prereq: 2400 (401) and MicrBio 4000 (509). Not open to students with credit for 610.

5430 Food Fermentations  U  3
Making fermented foods (dairy, alcoholic, meat, vegetable products, etc.) and understanding the microbiological and biochemical changes involved. Prereq: MicrBio 4000. Not open to students with credit for 611.

5450 Food Packaging  U  3
A discussion of terminology and literature of commercial packaging, principal methods of packaging, and principles of selecting packaging materials. Prereq: 2400 (401), or Grad standing. Not open to students with credit for 649.

5500 Measurement of Food Perception and Liking  U  3
Explores the principles and procedures for accurately assessing the sensory and hedonic properties of foods and consumer products. Appropriate test design, statistical analyses and data interpretation will be discussed and the physiological and psychological principles impacting sensory judgments will be explored. A proficiency in basic statistics and Excel is required. Prereq: ComLdr 3537, AEDEcon 2005, AnimSci 2260, HCS 2260, ENR 2000, or Stat 1450.

5536 Food Microbiology Lecture  U  3
Microbiology as applied to food. Students learn about microorganisms that spoil food or cause food-transmitted diseases, as well as beneficial microorganisms. Control of harmful microorganisms in food is discussed. Prereq: MicrBio 4000 (Micrbiol 509) or 4100 (520), or Grad standing. Not open to students with credit for 636.01 or MicrBio 5536 (Micrbiol 636.01). Cross-listed in MicrBio.

5546 Food Microbiology Laboratory  U  3
Microbiological analyses as applied to food. Students learn how to detect and quantify microorganisms that spoil food or cause food-transmitted diseases, as well as beneficial microorganisms. Prereq: 5536 (636.01) or MicrBio 5536, or Grad standing. Not open to students with credit for 636.02 or MicrBio 5546 (636.02). Cross-listed in MicrBio.

5600 Food Chemistry  U  3
Describe the sources and compositions of food components. Develop a relationship between the composition of the individual food components and their chemical and physical properties. Understanding the chemistry of food components during processing and storage. Prereq: 2400 and Chem 2510, or Grad standing. Prereq or concur: Biochem 4511.

5610 Food Analysis  U  3
Chemical, physical and functional properties of foods and effects of processing on those constituents using an array of chemical, biochemical and instrumental technologies in accordance with current food industry and regulatory agency practices. Prereq: 5600 (605), or Grad standing. Not open to students with credit for 601.

5710 Food Additives  U  2
Chemical and physical nature of food additives; functions and effects on chemical, rheological, microbiological, and nutritional properties of foods. Prereq: 10 cr hrs in FdScTe, or Grad standing. Not open to students with credit for 621.
### Food Science and Technology

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5720</td>
<td>Food Product Development</td>
<td>U G 3</td>
<td>Development of a new food product including generation of concepts, consumer panel testing, development of prototypes, process optimization and consumer testing. Prereq: 5000, or Sr standing, or Grad standing. Not open to students with credit for 650.</td>
</tr>
<tr>
<td>5721</td>
<td>Applied Food Product Development</td>
<td>G U 1</td>
<td>A problem-based interdisciplinary capstone learning experience designed to enhance career skills (critical thinking, decision making, team work, communication, etc.) in the context of industry's approach to developing new and improved food products. Prereq: 5720. Not open to students with credit for 650.</td>
</tr>
<tr>
<td>5730</td>
<td>Technical Problem Solving</td>
<td>G U 3</td>
<td>Analysis of technical problems in food science; fostering creative thinking to the approach and solution of problems; preparation and oral presentation of paper. Prereq: 5400 or 5710, or 5536 or 4536, or 5400, 5410, 5420, 5430, 5450, or MeatSci 4510, or Sr standing; or Grad standing.</td>
</tr>
<tr>
<td>5797.01</td>
<td>Food Science and Policy in Italy</td>
<td>U G 3</td>
<td>This 3 credit, 3 week education abroad course will integrate knowledge gained in the required course PubAfrs 5890 with real-world experience to enhance the student's understanding of food science and policy in Italy. Tours will include food production and processing facilities, wineries, traditional meat processors, various retail formats, restaurants and cultural venues. Prereq: PubAfrs 5890.</td>
</tr>
<tr>
<td>6320</td>
<td>Global Health and Environmental Microbiology</td>
<td>G 3</td>
<td>Fundamentals and emerging issues of health significant microorganisms (bacteria, viruses, protozoa) from water, air, soil and food, and their sources, transmission routes, treatments, detection methods and study tools. Prereq: Not open to students with credit for PubHEHS 730. Cross-listed in PubHEHS.</td>
</tr>
<tr>
<td>6400</td>
<td>Study Design and Quantitative Methods for Food Science</td>
<td>G 3</td>
<td>This graduate-level course is designed to introduce students to research study design and data analytic methods commonly used in food science. Since study planning is critical to the success of any research project, this course will focus primarily on appropriate study design. Prereq: Stat 1450, 1550, or 2450; or permission of instructor.</td>
</tr>
<tr>
<td>7193</td>
<td>Individual Study</td>
<td>G 1 - 3</td>
<td>Individual study course to permit graduate students to explore in-depth selected areas of food science and nutrition. Prereq: Permission of instructor. Not open to students with credit for 693. Repeatable to a maximum of 6 cr hrs or 2 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>7194</td>
<td>Group Studies</td>
<td>G 1 - 3</td>
<td>Selected topics in food science. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions.</td>
</tr>
<tr>
<td>7360</td>
<td>Water Contamination: Sources and Health Impact</td>
<td>G 3</td>
<td>Understanding the sources, the transport mechanisms and the fate of microbial and chemical contaminants, their exposure risks, tracking methods, linking to other environmental matrices and their public health impacts. Cross-listed in PubHtth 7360.</td>
</tr>
<tr>
<td>7430</td>
<td>Advanced Food Process Design</td>
<td>G 3</td>
<td>An integration of quantitative parameters describing changes in the quality attributes of foods with quantification of the physical changes occurring between the time of raw material harvest or assembly and the point of food consumption. Models to predict changes in quality attributes as a function of process parameters will be developed and demonstrated. Prereq: 5400, 5536, 5600, or FABEng 3481 or 4410, or permission of instructor. Not open to students with credit for FABEng 7430. Cross-listed in FABEng.</td>
</tr>
<tr>
<td>7550</td>
<td>Advanced Concepts in Sensory Science</td>
<td>G 2</td>
<td>This course explores advanced concepts in Sensory Science including flavor perception, food intake and sophisticated methodological and data analysis procedures. The structure of this course will involve open discussion of important concepts obtained from seminal readings. Prereq: 5500, or Stat 5500 or above.</td>
</tr>
<tr>
<td>7600</td>
<td>Metabolomics, Principles and Practice</td>
<td>G 3</td>
<td>Introduces students to the principles and practice of metabolomics. Metabolomics is the study of the totality of small molecules existing within a system. We will focus here on the application of metabolomics to plant, food, nutrition and health-related research, although concepts are applicable to other disciplines. Prereq: Permission of instructor. Cross-listed in BIM, HCS, and HumnNrr.</td>
</tr>
<tr>
<td>7610</td>
<td>Instrumental Analysis I: Spectroscopic and Chromatographic Techniques in Food Analysis</td>
<td>G 3</td>
<td>Theory and practice of analytical chemistry applied to the identification and quantitation of analytes in food. Emphasis on chromatography, optical spectroscopy, mass spectrometry as well as sample preparation techniques and statistical data treatment. Prereq: 5610 (601) or equiv.</td>
</tr>
<tr>
<td>7611</td>
<td>Instrumental Analysis II Molecular and Spectral Analysis Techniques</td>
<td>G 3</td>
<td>Methods of analysis of foods including thermal analysis, NMR, microscopy and theology. Prereq: Chem 2520 (250), or 2530 and 2540, or Biochem 4511 (511), or Grad standing; or permission of instructor. Not open to students with credit for 833.</td>
</tr>
<tr>
<td>7620</td>
<td>Food and Nutritional Toxicology</td>
<td>G 2</td>
<td>Basic principles of food and nutritional toxicology with emphasis on food components and food toxins including absorption, metabolism and excretion of xenobiotics, allergenic and toxic constituents, role of diet and nutrients in mutagenesis and carcinogenesis. Prereq: Biochem 4511 or 5613. Not open to students with credit for 830. AnimalSci 830, or HumnNrr 830.</td>
</tr>
<tr>
<td>7630</td>
<td>Food Colors and Pigments</td>
<td>G 3</td>
<td>Chemistry and reactivity of pigments and colors in foods. Prereq: 5600 (625), 5610, or Grad standing, or permission of instructor. Not open to students with credit for 724.</td>
</tr>
<tr>
<td>7640</td>
<td>Food Proteins</td>
<td>G 2</td>
<td>Chemical, physical, biological, and functional properties of food proteins and their interactions with other food components. Prereq: 2400 or equiv., 5600 or equiv., or permission of instructor.</td>
</tr>
<tr>
<td>7641</td>
<td>Food Carbohydrates</td>
<td>G 2</td>
<td>Chemical, physical, biological, and functional properties of food carbohydrates and their interactions with other food components. Prereq: 2400 or equiv., 5600 or equiv., or permission of instructor.</td>
</tr>
<tr>
<td>7650</td>
<td>Food Lipids</td>
<td>G 2</td>
<td>Provide the students with an understanding of the chemistry and physical properties of lipids and their effects on quality and functional properties of food systems. Prereq: Not open to students with credit for 820 and 821.</td>
</tr>
<tr>
<td>7660</td>
<td>Principles of Crystalization Processes in Food Systems</td>
<td>G 2</td>
<td>Discusses the principles of crystalization in food systems, particularly in dairy, frozen foods, confectionery, and baked products. This course would emphasize the importance of controlling the crystalization as a key factor in food quality, when some foods require the promotion of crystalization and others its prevention.</td>
</tr>
<tr>
<td>7670</td>
<td>Flavor Chemistry</td>
<td>G 2</td>
<td>This course will provide students with an understanding of the chemical stimuli that impact flavor perception, analytical approaches to characterize flavor stimuli, mechanisms of flavor formation, flavor-ingredient interactions, and industrial methods of flavor production.</td>
</tr>
<tr>
<td>7727</td>
<td>Interdisciplinary Colloquium in Food Safety</td>
<td>G 1</td>
<td>Weekly graduate seminar on current and emerging topics in food safety. Presentations from OSU faculty and invited external experts from industry, academia and government. The course is designed to expose graduate students to the wide range of topics and expertise needed to address food safety. Students will learn the role of the public sector in ensuring food safety. Prereq: Grad standing. Repeatable to a maximum of 4 cr hrs. This course is graded S/U. Cross-listed in VetPrev.</td>
</tr>
<tr>
<td>7830</td>
<td>Phytochemicals in Human Health: Crops to the Clinic</td>
<td>G 3</td>
<td>Covers the function and control of phytochemicals in plants, the function of phytochemicals in human health, delivery of phytochemicals through foods in the diet, strategies when designing studies examining foods for health, and policy and sustainability considerations. Prereq: Biochem 4511 (511) or 5613 (613), or equiv; or permission of instructor. Not open to students with credit for 7810. Cross-listed in HCS, HumnNrr, BSGP, and PubHlth.</td>
</tr>
<tr>
<td>7999</td>
<td>Thesis Research</td>
<td>G 1 - 18</td>
<td>Research for thesis purpose only. Repeatable. This course is graded S/U.</td>
</tr>
<tr>
<td>8193</td>
<td>Individual Studies</td>
<td>G 1 - 3</td>
<td>Research experience and preparation of technical paper. Prereq: 10 cr hrs in Grad level FedSci. Repeatable to a maximum of 15 cr hrs or 4 completions. This course is progress graded (S/U). Cross-listed in VetPrev.</td>
</tr>
<tr>
<td>8991</td>
<td>Graduate Seminar</td>
<td>G 1</td>
<td>Discussion of current topics and research findings in food science. Prereq: Grad standing. Not open to students with credit for 850.01. Repeatable to a maximum of 5 cr hrs.</td>
</tr>
<tr>
<td>8992</td>
<td>Graduate Seminar in Food Science and Technology</td>
<td>G 1</td>
<td>A weekly seminar series on current and emerging topics in Food Science and Technology. Graduate students participate in all dimensions of the course, including presentations, as well as through interactions with all other speakers. Seminar speakers will include graduate students, as well as faculty and invited representatives from industry, academia and government. Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 3 cr hrs.</td>
</tr>
<tr>
<td>8999</td>
<td>Dissertation Research</td>
<td>G 1 - 16</td>
<td>Research for thesis or dissertation. Repeatable. This course is graded S/U.</td>
</tr>
</tbody>
</table>

### Food, Agricultural, and Biological Engineering

<table>
<thead>
<tr>
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<th>Credits</th>
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<tbody>
<tr>
<td>2100</td>
<td>Energy In Biological Systems</td>
<td>U 1</td>
<td>An introduction to energy flow and transformations within and for biological systems that include the human environment and the production and processing of plants, animals and micro-organisms the student will encounter in the food, agricultural and biological engineering program. Prereq: Soph standing in Engineering. Not open to students with credit for 325.</td>
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</tbody>
</table>
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<tr>
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<th>Credits</th>
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<tbody>
<tr>
<td>2110</td>
<td>Fluid Mechanics in Food, Agricultural and Biological Systems</td>
<td>U 3</td>
</tr>
<tr>
<td>2193</td>
<td>Individual Studies</td>
<td>U 1-3</td>
</tr>
<tr>
<td>2194</td>
<td>Group Studies</td>
<td>U 1-5</td>
</tr>
<tr>
<td>2200</td>
<td>Introduction to Humanitarian Engineering</td>
<td>U 1</td>
</tr>
<tr>
<td>2270</td>
<td>Surveying</td>
<td>U 2</td>
</tr>
<tr>
<td>3110</td>
<td>Introduction to Humanitarian Engineering Laboratory</td>
<td>U 2</td>
</tr>
<tr>
<td>3120</td>
<td>Thermodynamics in Food, Agricultural and Biological Engineering</td>
<td>U 4</td>
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<tr>
<td>3140</td>
<td>Professional Development in Food, Agricultural, and Biological Engineering</td>
<td>U 1</td>
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<tr>
<td>3150</td>
<td>System Dynamics and Electricity</td>
<td>U 4</td>
</tr>
<tr>
<td>3170</td>
<td>Computer Graphics Using SolidWorks</td>
<td>U 2</td>
</tr>
<tr>
<td>3171</td>
<td>Computer Graphics Using AutoCAD</td>
<td>U 2</td>
</tr>
<tr>
<td>3200S</td>
<td>Engineering for Community Development in Ohio</td>
<td>U 3</td>
</tr>
<tr>
<td>3481</td>
<td>Introduction to Food Engineering</td>
<td>U 3</td>
</tr>
<tr>
<td>3510</td>
<td>Introduction to Biological Engineering</td>
<td>U 4</td>
</tr>
<tr>
<td>3515</td>
<td>Utilization of Energy in Agriculture</td>
<td>U 3</td>
</tr>
<tr>
<td>3516</td>
<td>Agricultural Structures</td>
<td>U 3</td>
</tr>
<tr>
<td>3519</td>
<td>Individual Studies</td>
<td>U 1-3</td>
</tr>
<tr>
<td>4141</td>
<td>Unit Operations in Food Engineering</td>
<td>U 3</td>
</tr>
<tr>
<td>4157</td>
<td>Assessing Sustainability: Project Experience</td>
<td>U 3</td>
</tr>
<tr>
<td>4200</td>
<td>Advanced Biological Engineering</td>
<td>U 2</td>
</tr>
<tr>
<td>4250</td>
<td>Capstone Design I</td>
<td>U 3</td>
</tr>
<tr>
<td>4290</td>
<td>Capstone Design II</td>
<td>U 3</td>
</tr>
<tr>
<td>4498</td>
<td>Undergraduate Research</td>
<td>U 1-5</td>
</tr>
<tr>
<td>4999</td>
<td>Undergraduate Thesis</td>
<td>U 1-5</td>
</tr>
</tbody>
</table>

**Prerequisites:**
- Individualized study of topics and problems not included in regular courses of this department.
- Basic group studies in Food, Agricultural and Biological Engineering.
- This course will introduce students to the field of Humanitarian Engineering, cover a variety of potential career paths in this field, explore introductory engineering equations as they apply to problem solving in low-resource settings, introduce students to reflection and communication skills for working as engineers in development and discuss cultural constraints for engineering problems.
- This course will introduce students to the field of Humanitarian Engineering through experience based learning. Weekly experiential activities will build context for engineering design in low resource and international settings as humanitarian development workers. Students will learn about lifestyles, challenges and physical limits in human existence to better inform engineering design decisions.
- Introductory course designed to teach the measurement and collection of data using traditional methods, total stations and GPS. These techniques will be integrated and applied to traversing, topographic mapping and water flow analysis.
- Applications of soil and water processes in agricultural and ecological engineering, including: precipitation, infiltration, runoff, hydrographs, water quality, and geospatial analysis of natural resource problems.
- Fundamentals of thermodynamics applied to food, agricultural, biological, and ecological systems.
- Heat and mass transfer principles and applications to food, agricultural, biological and ecological systems.
- Professional development related to food, agricultural, biological and ecological engineering; business communication skills for professional advancement; engineering ethics, health and safety; and the engineer’s responsibilities to society.
- Modeling of mechanical, fluid, thermal, electrical, and bio-systems. Analytical, computer simulation and experimental solution methods. 1st and 2nd order systems, frequency response. Electric power distribution, electric motor selection and control.
- An advanced course in graphics with emphasis on the application of computer generated graphics to SolidWorks in the solution of engineering problems.
- An advanced course in graphics with emphasis on the application of computer generated graphics to the solution of engineering problems using AutoCAD.
- Service-learning course applying engineering to address contemporary issues related to food security in Central Ohio. In consultation with local social organizations, students will merge best practices for community development with resilient and sustainable design toward a semester long engineering design project that addresses a need or an opportunity to alleviate poverty and hunger.
- Introduction to material and energy balances, momentum, heat and mass transfer. Applications of basic engineering principles in food processing through problem solving and laboratory experiments. Offered for Food Science & Technology.
- An integration of biology, biochemistry and engineering fundamentals for analysis of biological systems in industrial, environmental, and agricultural processes.
- An advanced course in graphics with emphasis on the application of computer generated graphics with SolidWorks in the solution of engineering problems.
- An advanced course in graphics with emphasis on the application of computer generated graphics to the solution of engineering problems using AutoCAD.
- Service-learning course applying engineering to address contemporary issues related to food security in Central Ohio. In consultation with local social organizations, students will merge best practices for community development with resilient and sustainable design toward a semester long engineering design project that addresses a need or an opportunity to alleviate poverty and hunger.
- An analysis of land and energy balances, momentum, heat and mass transfer. Applications of basic engineering principles in food processing through problem solving and laboratory experiments. Offered for Food Science & Technology.
- An introduction to material and energy balances, momentum, heat and mass transfer. Applications of basic engineering principles in food processing through problem solving and laboratory experiments. Offered for Food Science & Technology.
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4999H  Honors Undergraduate Thesis  U  1 - 5  
Honors research leading to an undergraduate thesis. 
Prereq: Honors standing, and 6 sem or hrs taken at the 3000-level or above in Engineering, and permission of instructor. Repeatable to a maximum of 10 cr hrs or 4 completions.

5160  Electronics, Measurement and Instrumentation  U  4  
Analysis of analog and digital electronic components and circuits. Analysis and design of measurement systems; data acquisition, signal conditioning, error and noise control, sensors and transducers used in food, agricultural and biological systems. 
Prereq: 3150 or equiv, or Grad standing in Engineering. Not open to students with credit for 605.

5194  Group Studies  U  1 - 5  
Advanced group studies in Food, Agricultural, Biological, and Ecological Engineering with principal emphasis on design tools. 
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 4 completions.

5200  Appropriate Technology for Developing Countries  U  3  
Introduction to Appropriate Technology product design and development for people in developing countries and the business related topics necessary for commercialization. The focus will be on market driven solutions that help ensure the long term sustainability of the solutions developed. 
Prereq: Engr 1182.01, 1182.02, 1182.03, 1282.01H, 1282.02H, 1282.03H, or 1282.04H; or Grad standing; or permission of instructor.

5310  Ecological Engineering and Science  U  4  
Definition, classification, and practice of ecological engineering. Course explores ecological ecosystems, ecosystem restoration, and the utilization of natural processes to provide societal services and benefits to nature. 
Prereq: At least one course in Biology, Ecology, Engineering, or Geology, and Jr standing. Not open to students with credit for EnvEng 5310 or ENR 5310. Cross-listed in EnvEng and ENR.

5350  Sustainable Land and Water Systems  U  2  
An interdisciplinary analysis of interactions of land and water systems, and how upstream management and behavior impacts downstream aquatic systems. A primary focus will be the analysis, comparison and solutions related to eutrophication of coastal systems. This will be supported with research in related disciplines, field experiences, and exploration of stakeholder viewpoints and behaviors. 
Prereq: One course in Biology, EarthSc, Econ, EEOB, Engr, Psych, or PubHlth, or equiv.; or Grad standing.

5405  Kinetics of Reactions and Reactor Design for Food and Biological Systems  U  4  
Basics of reaction kinetics and reactor design. Material balances in a reactor. Applications of kinetic models to describe changes in food quality attributes and food safety as a function of process parameters. Shelf life estimation of foods based on kinetics. Design, selection and sizing of reactors. 
Prereq: 2110, 3120, and Math 2177.

5410  Advanced Food Engineering  U  3  
Application of heat and mass transfer, fluid flow, food properties, and food processing constraints in the design and selection of food processing equipment. 
Prereq: 3150 or 4410, or Grad standing. Not open to students with credit for 784.

5510  Introduction to Polymer Science: A Bio-based Approach  U  3  
This course introduces polymer chemistry through polymers found in nature. It is designed as a unique introduction to the subject, which connects natural and synthetic polymers by exploring the chemistry of natural polymers from plants, animals and humans and self-assembled macromolecular structures. Chapters cover the basic concepts of polymer chemistry. 
Prereq: Chem 2310.

5520  Phytotechnology and Phytoremediation  U  3  
Engineering principles of using plants for remediation of contaminated sites and treating polluted soil and water. Traditional methods as well as new trends and current research in phytoremediation technologies will be presented. 
Prereq: 3510 or EnvEng 3200, or Grad standing.

5540  Biomass Conversion to Bioenergy  U  3  
An exploration of the science and technologies used for energy production from bio-based materials, including agricultural biomass and solid waste sources. 
Prereq: 3150 or equiv.

5550  Sustainable Waste Management  U  3  
A comprehensive examination of waste generation, treatment and reuse including the impacts of pollution on the environment and human health. The focus will be on agricultural residues, manure, domestic wastewater, and municipal solid waste streams. 
Prereq: Sr or Grad standing in Engineering. Not open to students with credit for 650 or 652.

5620  Fluid Power Systems  U  3  
Analysis and design of fluid power systems used in mobile (off-road) agricultural, maintenance and earth moving equipment. Topics include: positive displacement components, control devices, actuators, fluids and fluid transmission electrohydraulics, system dynamics, and the use of state-of-the-art design and analysis tools. 
Prereq: 2110 or MechEng 3503; and MechEng 2020 or 2040; or Grad standing in engineering.

5730  Design of Agricultural Water Management Systems  U  3  
Use of soil physics, porous media flow theory, soil-plant interactions, hydrology, and hydraulic design and management irrigation and drainage systems. 
Prereq: 2110 or CivEng 3120 (413), and 2720 (373) or equiv; or Grad standing. Not open to students with credit for 673.

5750  Stream Geomorphology and Watershed Hydrology  U  3  
Fundamental and advanced topics in stream geomorphology and hydrologic processes. Solving multi-objective engineering problems in a team setting involving protection, enhancement, and restoration of streams, rivers, and watersheds. 
Prereq: 2110 or CivEng 3130 (413), and 2723 (373), or equiv; or Grad standing. Not open to students with credit for 773.

5760  Design of Urban Stormwater Control Measures  U  3  
Fundamental and advanced hydrologic and water quality design of stormwater controls for urban areas. Students will be expected to solve multi-objective, real-world engineering problems in a team setting. 
Prereq: 2720 or CivEng 3160, or Grad standing, or permission of instructor. Cross-listed in EnvEng.

5787  Study at a Foreign Institution  U  1 - 15  
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. 
Prereq: Permission of department chairperson. Repeatable to a maximum of 25 cr hrs or 3 completions. This course is progress graded.

5810  Design of Timber and Wood-Frame Building Systems  U  3  
Behavior and material properties of wood construction in structures. Design methodology of timber structural elements and connections. Analysis methods and design process of post-frame and stick-frame building structures for commercial, agricultural, or residential use. Continuous lateral load path and the design of wood diaphragms, shear walls, and anchorage to foundation. 
Prereq: 3160 or CivEng 3130; or Grad standing in FABEng or CivEng; or permission of instructor.

5820  Environmental Controls and Air Quality  U  3  
Heating, ventilation, and air conditioning (HVAC) engineering applied to agricultural, residential, and commercial structures; analysis of factors affecting energy utilization and air quality; green and sustainable HVAC technologies. 
Prereq: 3130, MechEng 510, or CHBE 521. Not open to students with credit for 645.

6020  Foundations of Data-Driven Sustainable Energy Systems  U  3  
Introduction to issues impacting sustainable energy systems across technology, law and policy, business models, resilience, data, geospatial, and decision sciences. 
Prereq: Enrollment in Data-Driven Sustainable Energy Systems Graduate Interdisciplinary Specialization or permission of instructor. Not open to students with credit for AEDecon 6500, EnvEng 6020, Geog 6020, ISE 6020, or PubAffs 6020. Cross-listed in AEDecon 6500, EnvEng 6020, Geog 6020; ISE 6020, or PubAffs 6020.

6193  Individual Studies  G  1 - 5  
Individual study of topics not included in regular courses; practice in development, organization, solution, and reporting on problems of student's choosing with faculty supervision. 
Prereq: Grad standing in Engineering. Repeatable to a maximum of 10 cr hrs or 4 completions. This course is graded SU.

6194  Group Studies  G  1 - 5  
Advanced group studies in Food, Agricultural and Biological Engineering with principal emphasis on design. 
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 4 completions.

6999  Graduate Research in Food, Agricultural and Biological Engineering for Thesis  G  1 - 18  
Research for thesis. Repeatable. This course is graded S/U.

7210  Research Methods in Food, Agricultural, and Biological Engineering  G  3  
Historical development of the research process. Problem selection and proposal development. Processes for acquiring funding and conducting quality research. 
Prereq: Grad standing in Engineering. Not open to students with credit for 801.

7220  College Teaching in Engineering  G  2  
Initial preparation for providing instruction in professional engineering programs at the college level including skills, strategies and issues common to university teaching in general and engineering instruction more specifically. 
Prereq: Not open to students with credit for 810. This course is graded S/U.

7230  Probabilistic Methods in Engineering Design  G  3  
Application of concepts of probability, random variables, statistical inference, multiple regression, multi-variate analysis, correlation analysis and concepts of Bayesian methodology to make reliable engineering design decisions. 
Prereq: Stat 3460 (427) or 3470 (427), or permission of instructor. Not open to students with credit for 735.
### Food, Agricultural, and Biological Engineering

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<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
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<th>Removable</th>
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<tbody>
<tr>
<td>7430</td>
<td>Advanced Food Process Design</td>
<td>G 3</td>
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<tr>
<td>7890</td>
<td>Seminar</td>
<td>G 1</td>
<td>Lecture and discussion of current topics related to food, agricultural and biological engineering presented by faculty, staff, graduate students, and guest speakers. Prereq: Grad standing in Engineering. Repeatable to a maximum of 8 cr hrs or 8 completions. This course is graded S/U.</td>
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<tr>
<td>8193</td>
<td>Individual Studies</td>
<td>G 1 - 5</td>
<td>Advanced individual study of topics not included in regular courses; practice in development, organization, solution, and reporting on problems of student's choosing with faculty supervision. Repeatable to a maximum of 10 cr hrs or 4 completions. This course is graded S/U.</td>
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<tr>
<td>8194</td>
<td>Group Studies</td>
<td>G 1 - 5</td>
<td>Advanced group studies in Food, Agricultural and Biological Engineering with principal emphasis on design. Repeatable to a maximum of 10 cr hrs or 4 completions.</td>
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<tr>
<td>8999</td>
<td>Food, Agricultural and Biological Engineering Research for Dissertation</td>
<td>G 1 - 18</td>
<td>Research for dissertation. Prereq: Doct standing in FABEng. Repeatable. This course is graded S/U.</td>
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### Food, Agricultural, and Environmental Sciences

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<tr>
<th>Course Code</th>
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<th>Prerequisites</th>
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<tr>
<td>1100</td>
<td>Introduction to Ohio State University and Food, Agricultural and Environmental Sciences Academic requirements: University procedures, grading system, resources, student rights and responsibilities; overview of academic areas of study.</td>
<td>U %</td>
<td>Prereq: Not open to students with credit for 100, or equiv.</td>
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<tr>
<td>1100H</td>
<td>Introduction to Ohio State University and Food, Agricultural, and Environmental Sciences - Honors</td>
<td>U %</td>
<td>Academic requirements: University procedures, grading system, resources, student rights and responsibilities; overview of academic areas of study. Prereq: Honors standing, or permission of instructor. Not open to students with credit for 100H, 101, ArtsCol 100, ArtsSci 100, Engineer 100, HomeE 100, NatRes 100, or UVCserv 100.</td>
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<tr>
<td>1200</td>
<td>Kellogg and Moser Food Security and Sustainability Learning Community Seminar</td>
<td>U 1</td>
<td>This course will be for students living in the W.K. Kellogg Foundation and Bobby Moser Food Security and Sustainability Learning Community (L.C). Course content will include guest lecturers, field experiences, and the conception of a culminating project surrounding the topics of food security and sustainability. Prereq: Acceptance in W.K. Kellogg Foundation and Bobby Moser Food Security and Sustainability Learning Community, and permission of instructor. This course is graded S/U.</td>
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<td>2193</td>
<td>Individual Studies</td>
<td>U 1 - 3</td>
<td>Planning, conducting, and reporting a special study appropriate to the needs of the student. Prereq: Cumulative GPA 2.5 or above, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 3 completions. This course is graded S/U.</td>
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<tr>
<td>2194</td>
<td>Group Studies</td>
<td>U 1 - 3</td>
<td>Group study classes or projects in selected interdisciplinary topics in Agriculture.</td>
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<tr>
<td>3000</td>
<td>Peer Mentor Leadership</td>
<td>U 1</td>
<td>Peer mentors in this course will learn skills in leadership, student development, academic development, and community building while engaging constructively with aspects of identity and how identity shapes perspective. Prereq: Acceptance into Peer Mentor Program, or permission of instructor. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.</td>
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<tr>
<td>3191</td>
<td>Conducting Your Internship in the College of Food, Agricultural, and Environmental Sciences</td>
<td>U 0</td>
<td>The College of Food, Agricultural, and Environmental Sciences strives to provide opportunities for students to develop the critical competencies and technical knowledge and skills that employers demand in the job market and that are necessary for student success in their chosen field. This class provides students the structure to complete the initial requirements of their internship experience. Prereq: Internship approval, and permission of instructor. Repeatable to a maximum of 6 completions. This course is graded S/U.</td>
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<tr>
<td>3790.04</td>
<td>Panama: Through the Lens of Agriculture, Diversity and Sustainability</td>
<td>U 1</td>
<td>Provides perspective of agriculture and other economic sectors that influence food, fiber, and fuel. This is a 1-credit hour course designed to educate and prepare students to experience the various applications of agriculture and systems on varying scenarios, especially within a socioeconomic and ethnically diverse context. Students will investigate and present background information on Panama. Prereq: Admission to Education Abroad program. Repeatable to a maximum of 3 cr hrs.</td>
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<td>3797</td>
<td>Study at a Foreign Institution</td>
<td>U 1 - 10</td>
<td>An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Students will pay Ohio State fees and any fees in excess of Ohio State tuition as well as all travel and subsistence costs. Prereq: Permission of instructor. Repeatable to a maximum of 16 cr hrs or 3 completions.</td>
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<tr>
<td>3797.03</td>
<td>First Year Experience Study at a Foreign Institution</td>
<td>U 3</td>
<td>An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Students will pay Ohio State fees and any fees in excess of Ohio State tuition as well as all travel and subsistence costs.</td>
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<tr>
<td>3797.04</td>
<td>Panama: Through the Lens of Agriculture, Diversity and Sustainability</td>
<td>U 2</td>
<td>Provides perspective of agriculture and other economic sectors that influence food, fiber, and fuel. Designed to allow students to experience various applications of agriculture and systems within socioeconomic and ethnically diverse contexts, and to experience culture and applications of agriculture based on resources and needs of the country. Admission to the Panama: Through the Lens of Agriculture, Diversity and Sustainability program required prior to enrollment. Prereq: A grade of C or above in 3790.04. Repeatable to a maximum of 6 cr hrs.</td>
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<td>4580</td>
<td>CFAES Global Option Capstone</td>
<td>U 1</td>
<td>The College of Food, Agricultural, and Environmental Sciences strives to provide opportunities for students to develop the critical competencies and technical knowledge and skills that are necessary for student success in their chosen field. Prereq: Acceptance into Peer Mentor Program, or permission of instructor. Repeatable to a maximum of 30 cr hrs or 15 completions.</td>
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<td>4797</td>
<td>Study at a Foreign Institution</td>
<td>U 1 - 15</td>
<td>Study at a foreign institution. Repeatable to a maximum of 30 cr hrs or 15 completions. This course is graded S/U.</td>
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<td>5194</td>
<td>Group Studies</td>
<td>U G 1 - 3</td>
<td>Study in interdisciplinary topics in Agriculture. Repeatable to a maximum of 6 cr hrs or 3 completions. This course is graded S/U.</td>
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<tr>
<td>5797</td>
<td>Study at a Foreign Institution</td>
<td>U G 1 - 10</td>
<td>An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Students will pay Ohio State fees and any fees in excess of Ohio State tuition as well as all travel and subsistence costs. Prereq: Permission of instructor. Repeatable to a maximum of 16 cr hrs or 3 completions. This course is progress graded.</td>
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### French

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<tr>
<th>Course Code</th>
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<tr>
<td>1101.01</td>
<td>Beginning French I Classroom</td>
<td>U 4</td>
<td>Introduction to French; development of listening, reading, speaking, and writing skills. Taught in French. Course is not open to native speakers of this language, students with EM credit, or to students with two or more years of study in this language in high school. Prereq: Not open to students with credit for 1101.01, 1101.01, 4 sem cr hrs of 1101.51, or 5 qtr hrs of 1101.51. This course is available for EM credit. GE for lang course. FL Admis Cond course.</td>
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<tr>
<td>1101.21</td>
<td>Beginning French I DL</td>
<td>U 4</td>
<td>Distance learning version of Introduction to French; development of listening, reading, speaking, and writing skills. Taught in French. Course not open to native speakers, students with EM credit, or to students with two or more years of study in this language in high school. Prereq: Not open to students with credit for 1101.01 or 4 credits of 1101.51 or 1101.61. This course is available for EM credit. GE for lang course. FL Admis Cond course.</td>
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<tr>
<td>1101.51</td>
<td>Beginning French I Individualized</td>
<td>U 1 - 4</td>
<td>Introduction to French; development of listening, reading, speaking, and writing skills. Taught in French. Course not open to native speakers, students with EM credit, or to students with two or more years of study in this language in high school. Prereq: Not open to students with credit for 1101.01, 1101.01, 4 sem cr hrs of 1101.51, or 5 qtr hrs of 1101.51. Repeatable to a maximum of 4 or 4 completions. This course is available for EM credit. GE for lang course. FL Admis Cond course.</td>
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<tr>
<td>1101.61</td>
<td>Beginning French I: Individualized DL</td>
<td>U 1 - 4</td>
<td>Individualized introduction to French via distance learning; development of listening, reading, speaking, and writing skills. Taught in French. Course not open to native speakers, students with EM credit, or to students with two or more years of study in this language in high school. Prereq: Not open to students with credit for 1101.01 or 4 credits of 1101.51. Repeatable to a maximum of 4 cr hrs or 4 completions. This course is available for EM credit. GE for lang course.</td>
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<tr>
<td>1102.01</td>
<td>Beginning French II Classroom</td>
<td>U 4</td>
<td>Continued study of French; development of listening, reading, speaking, and writing skills; readings based on contemporary French culture and literature. Taught in French. Not open to native speakers of this language or with credit through regular course enrollment, or students with EM credit. Prereq: 1101.01, 102.01, or 102.66, or completion of 4 sem cr hrs or 1101.51 or 5 or 1102.51. Not open to students with credit for 1102.01, 1102.30, 103.01, 103.51, or 103.66. This course is available for EM credit. GE for lang course. FL Admis Cond course.</td>
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1102.21 Beginning French II DL U 4
Distance learning version of continued introduction to French; development of listening, reading, speaking, and writing skills. Taught in French. Course not open to native speakers, students with EM credit, or to students with two or more years of study in this language in high school. 
Prereq: 1101.01 or 1101.21, or completion of 4 or hrs of 1101.51 or 1101.61. Not open to students with credit for 1102.01 or 4 credits of 1102.51 or 1102.61. This course is available for EM credit. GE for language course.

1102.51 Beginning French II Individualized U 1 - 4
Continued study of French; development of listening, reading, speaking, and writing skills; readings based on contemporary French Culture and literature. Taught in French. Closed to native speakers.
Prereq: 1101.01, or completion of 4 or hrs of 1101.51. Not open to students with EM credit. Repeatable to a maximum of 4 or 4 completions. This course is available for EM credit. GE for language course. FL Admis Cond course.

1102.61 Beginning French II: Individualized DL U 1 - 4
Continued individualized study of French via distance learning; development of listening, reading, speaking, and writing skills; readings based on contemporary French culture and literature. Taught in French.
Prereq: 1101.01, or completion of 4 or hrs of 1101.51 or 1101.61. Not open to students with credit for 1102.01 or 4 credits of 1102.51. Repeatable to a maximum of 4 completions or 4 hrs. This course is available for EM credit. GE for language course.

1103.01 Beginning French III Conversation and Composition U 4
Continued development of listening, speaking, reading and writing with an emphasis on oral and written skills; focus on functional topics and thematic vocabulary. Taught in French. Not open to native speakers of this language through regular course enrollment or EM credit.
Prereq: 1102.01 or 4 sem cr hrs of 1102.51; or 1102.01 and 2 sem cr hrs of 1102.51; or 102.66 and 2 sem cr hrs of 1102.51; or 103.01, 103.65, or 5 qtr hrs of 1103.51. Not open to students with credit for 1103.xx (104.xx). Only one decimal subdivision may be taken for credit. This course is available for EM credit. GE for language course. FL Admis Cond course.

1103.02 Beginning French III Conversation U 4
Emphasis on speaking and aural comprehension with special attention to practical situations. Focus on content area such as cinema. Taught in French. Not open to native speakers of this language through regular course enrollment or EM credit.
Prereq: 1102.01 or 4 sem cr hrs of 1102.51; or 102.66 and 2 sem cr hrs of 1102.51; or 103.01, 103.65, or 5 qtr hrs of 1103.51. Not open to students with credit for 1103.xx (104.xx). Only one decimal subdivision may be taken for credit. This course is available for EM credit. GE for language course. FL Admis Cond course.

1103.21 Beginning French III DL U 1 - 4
Distance learning version of continued introduction to French; development of listening, reading, speaking, and writing skills. Taught in French. Course not open to native speakers, students with EM credit, or to students with two or more years of study in this language in high school.
Prereq: 1102.01 or 1102.21, or completion of 4 or hrs of 1102.51 or 1102.61. Not open to students with credit for 1103.01 or 4 credits of 1103.51 or 1103.61. This course is available for EM credit. GE for language course.

1103.51 Beginning French III Individualized U 1 - 4
Continued development of listening, speaking, reading and writing with an emphasis on oral and written skills; focus on functional topics and thematic vocabulary. Taught in French.
Prereq: 1101.01 & 1102.01; or completion of 4 or hrs of both 1101.51 & 1102.51. Not open to students with credit for 1103.01 or 4 credits of 1103.51 or 1103.61. This course is available for EM credit. GE for language course.

1103.61 Beginning French III: Individualized DL U 1 - 4
Continued development of listening, speaking, reading and writing with an emphasis on oral and written skills; focus on functional topics and thematic vocabulary. Taught in French.
Prereq: 1101.01 and 1102.01; or completion of 4 or hrs of 1101.51 or 1101.61, and completion of 4 cr hrs of 1102.51 or 1102.61. Not open to students with credit for 1103.01, 1103.02, 1103.03, or 1103.04; or 4 cr hrs of 1103.51. Repeatable to a maximum of 4 cr hrs or 4 completions. This course is available for EM credit. GE for language course. FL Admis Cond course.

1105.01 Beginning French Review Classroom U 4
Intensive beginning French. Review of basic structures, vocabulary and skills. Taught in French. Not open to native speakers of this language.
Prereq: 2 or more years of high school French, and placement in 1101 by EM credit only. Not open to students with credit for 1101.01 (101.01), 1101.51 (101.01), 1102.01 (102.01), 1102.51 (102.51), 1102.61, 1103.01, 1103.51, or 1103.61. This course is available for EM credit. GE for language course. FL Admis Cond course.

1105.21 Beginning French Review DL U 4
Distance learning version of intensive beginning French. Review of basic structures, vocabulary and skills. Taught in French. Not open to native speakers of this language.
Prereq: 2 or more years of high school French, and placement in 1101 by EM credit only. Not open to students with credit for 1101.01, 1101.21, 1101.51, 1101.61, 1102.01, 1102.51, 1102.61, 1103.01, 1103.21, 1103.51, 1103.61, or 1155.01. This course is available for EM credit. GE for language course.
3201 French Literary and Visual Texts  U  3  
Students improve reading, writing, and speaking skills by analyzing and discussing full-length French literary works and visual texts such as paintings, fashion, photographs, and films from the Middle Ages to the present.  
Prereq: 2101.01 (201.01), or 2101.01H, or 3 sem cr hrs of 2101.51 (5 qtr cr hrs of 210.51), and 3101 (401). Not open to students with credit for 425 or 426.

3202 Literary and visual texts of the Francophone world  U  3  
Readings and analysis of Francophone literature and multimedia texts that provide an appreciation and understanding of the Francophone world.  
Prereq: 2101.01 (201.01), or 2101.01H, or 3 cr hrs of 2101.51 (5 cr hrs of 210.51), and 3101 (401). Not open to students with credit for 427.

3401 Introduction to Contemporary France  U  3  
Introduction to ways of studying major aspects of French culture by means of lectures, readings, research projects, media, and Internet.  
Prereq: 2101.01, or 2101.01H, or 3 sem cr hrs of 2101.51, or 206; and 3101. Not open to students with credit for 440.

3402 Introduction to Francophone Cultures  U  3  
Introduction to ways of studying major aspects of Francophone cultures by means of lectures, readings, research projects, media, and Internet.  
Prereq: 2101.01 (201.01), or 2101.01H, or 3 cr hrs of 2101.51 (5 cr hrs of 210.51), or 206, and 3101 (401).

3403 Topics in French-Speaking Cultures  U  3  
Exploration of various facets of French and Francophone cultures through texts and media.  
Prereq: 2101.01 (201.01), or 2101.01H, or 3 cr hrs of 2101.51 (5 cr hrs of 210.51); and 3101 (401). Repeatable to a maximum of 6 cr hrs.

3501 Introduction to French for the Professions  U  3  
An introduction to business French with emphasis on basic business terminology, commercial correspondence, similarities and differences in business transactions, and international procedures.  
Prereq: 3101 (401, 402, 403) or 3102 (404); permission of instructor. Not open to students with credit for 406.

3502 French for International Studies  U  3  
Develop specific language skills and cultural competences to work in broad field of international studies in the US, France, and other Francophone regions. Learn about relations among French-speaking nations and regions, about Francophone organizations, and about current events in the French-speaking world. Improve reading, writing, listening, and speaking skills in French. Taught in French.  
Prereq: 2101 or equiv.

3570 CLLCC Radio  U  3  
Student partners prepare 3 target language broadcasts, each 1 hour in length. Broadcasts stream live over the Internet, then become podcast for public use. Students “DJs” conduct target language research on radio broadcast history and at least 15 thematic topics and related music that interests them. Choose their music and content with approval and guidelines, then produce scripts.  
Prereq: Permission of instructor.

3701 Introduction to French Cinema  U  3  
Introduction to the study of French cinema, French film history and the art of the cinema.  
Prereq: 3101 (401). Not open to students with credit for 470.

3797 Intermediate Study at a French Institution  U  1 - 15  
Group studies at a French institution.  
Prereq: Permission of department chairperson or study abroad office. Repeatable. This course is progress graded.

3801 French-American Culture Wars  U  3  
French-American cultural relations since World War I; an exploration of French reaction to and adoption or rejection of a number of American cultural “exports,” from jazz and the GI to Coke and consumerism. Taught in English.  
Prereq: Not open to students with credit for 153. GE cultures and ideas course.

4100 Advanced French Grammar for Contemporary Contexts  U  3  
Review and expansion of grammatical structures as they are used in speaking and writing in a variety of especially contemporary contexts.  
Prereq: 3101, and at least two other courses taught in French at the 3000-level or above; or permission of instructor. Not open to students with credit for 5101. This course is available for EM credit.

4193 Individual Studies  U  1 - 15  
Individual studies.  
Prereq: Written permission of department. Not open to students with 30 cr hrs for 693. Repeatable to a maximum of 30 hrs or 30 completions.

4194 Group Studies  U  1 - 15  
Group studies.  
Prereq: Written permission of department. Not open to students with 30 cr hrs for 694. Repeatable to a maximum of 30 cr hrs or 30 completions.

4401 Topics in French and Francophone Studies  U  3  
In-depth exploration of a theme, issue, or question in French and/or Francophone Studies broadly conceived. Topics vary. Taught in French.  
Prereq: 3101, and 3201, 3202, 3401, 3402, 3403, 3501, or 3701; or permission of instructor. Repeatable to a maximum of 6 cr hrs.

4402 France from the Great War to the Present: Culture in Flux  U  3  
Examines key historical events and cultural and social reactions to them in France from WWI to the present through analyses of historical and literary texts, speeches, films, and songs. Focuses on understanding contemporary French culture through exploration of France’s recent past. Helps students improve language skills through practice reading, writing, speaking, and listening to French.  
Prereq: 3101, and 3201, 3202, 3401, 3402, 3403, or 3701; or permission of instructor.

4690 French for the Professions Internship  U  1 - 6  
Supervised training in international (French-speaking) business.  
Prereq: 3501 (400) or permission of instructor. Notify department chair no later than six months or one semester prior to start of internship. Not open to students with 6 cr hrs for 690. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U. FL Admis Cond course.

4797 Advanced Study at a Foreign Institution  U  1 - 15  
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.  
Prereq: Written permission of department chairperson. Not open to students with 45 cr hrs for 697. Repeatable. This course is progress graded. FL Admis Cond course.

4988 Undergraduate Research Projects  U  1 - 6  
Undergraduate research or creative activities. Topics vary.  
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 4 completions.

4998H Honors Undergraduate Research Projects  U  1 - 6  
Undergraduate research or creative activities for honors students. Topics vary.  
Prereq: Honors standing and permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions.

4999 Undergraduate Research Thesis  U  1 - 3  
Undergraduate thesis. Topics vary.  
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.

4999H Honors Undergraduate Research Thesis  U  1 - 3  
Undergraduate thesis for honors students. Topics vary.  
Prereq: Honors standing and permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.

5103 French Translation and Interpretation  U G  3  
An introduction to the theory and practice of translation (French to English and English to French) based on texts reflecting different types of written communication.  
Prereq: Undergrad students must have credit for 5101 (601). Not open to students with credit for 602.

5104 Medieval French  U G  3  
Introduction to medieval French grammar and vocabulary, using a medieval text as vehicle.  
Prereq: 3101, and at least two 3000-level French courses or above; or grad standing, and permission of Graduate Studies Chair. Not open to students with credit for 7101 (716.01).

5105 Medieval Occitan  U G  3  
Introduction to the language and literature of medieval Occitan, especially to that of the troubadours.  
Prereq: 3101, and at least two additional 3000-level French courses or above; Grad standing; or permission of instructor. Not open to students with credit for 7102.

5194 Combined UG and Grad Group Studies  U G  1 - 15  
Grad group studies.  
Prereq: Permission of instructor, or permission of Graduate Studies Chair (graduate students only). Not open to students with 30 cr hrs for 694. Repeatable. FL Admis Cond course.

5201 Gothic to Renaissance: Texts and Contexts  U G  3  
Survey of French literature of the Middle Ages from its inception to Villon, with emphasis on different literary genres (epics, narrative fiction, poetry, theatre).  
Prereq: 3101 (401) and either 3201 (425, 426), or 3202 (427); graduate students require written permission of the Graduate Studies Chair in consultation with student’s advisor. Not open to students with credit for 565 or 721. FL Admis Cond course.

5202 Versailles to the Enlightenment: Texts and Contexts  U G  3  
Major early modern French literary movements and authors to major ideas and authors of the 18th century in France; emphasis on such writers as Montesquieu, Voltaire, Diderot, and Rousseau.  
Prereq: 3101 (401) and either 3201 (425, 426), or 3202 (427); graduate students require written permission of the Graduate Studies Chair in consultation of student's advisor. Not open to students with credit for 652 and 653. FL Admis Cond course.
<table>
<thead>
<tr>
<th>Course Title</th>
<th>Credits</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>5203 Romanticism to Surrealism: Texts and Contexts</td>
<td>U G 3</td>
<td>French literary movements and individual works situated in their historical contexts from the turn of the 19th century to World War I. Prereq: 3101 (401), and either 3201 (425 and 426) or 3202 (427); or Grad standing (graduate students require written permission of the Graduate Studies Chair in consultation with student's advisor). Not open to students with credit for 655. FL Admis Cond course.</td>
</tr>
<tr>
<td>5204 World Wars and Beyond: Texts and Contexts</td>
<td>U G 3</td>
<td>Major intellectual and literary currents in France from the early 20th century to the present. Prereq: 3101, and one of the following courses: 3201, 3202, 3401, 3402, 3403, or 4401; or Grad standing (graduate students require permission of the Graduate Studies Chair). Not open to students with credit for 657.01. FL Admis Cond course.</td>
</tr>
<tr>
<td>5205 Black Africa and Diaspora: Texts and Contexts</td>
<td>U G 3</td>
<td>Major intellectual and literary currents in black Africa and the Caribbean. Prereq: 3101 (401), and either 3201 (425 and 426) or 3202 (427); or Grad standing (graduate students require written permission of the Graduate Studies Chair in consultation with student's advisor). Not open to students with credit for 657.01. FL Admis Cond course.</td>
</tr>
<tr>
<td>5206 North Africa: Texts and Contexts</td>
<td>U G 3</td>
<td>Major intellectual and literary currents in Francophone North Africa. Prereq: 3101 (401), and either 3201 or 3202; or Grad standing (graduate students require written permission of the Graduate Studies Chair in consultation with student's advisor). Not open to students with credit for 657.02. FL Admis Cond course.</td>
</tr>
<tr>
<td>5401 Louis XIV to World War I</td>
<td>U G 3</td>
<td>Political and cultural history of France from Absolutism to World War I. Prereq: 3101 (401) and 3401 (440), or permission of instructor; or Grad standing and permission of Graduate Chair and student advisor. Not open to students with credit for 643. FL Admis Cond course.</td>
</tr>
<tr>
<td>5403 Topics in French-Speaking Cultures and Literatures</td>
<td>U G 3</td>
<td>Intense exploration of an aspect of French or Francophone culture or literature. Prereq: 3101, and either 3201 or 3202; or Grad standing (graduate students require written permission of the Graduate Studies Chair in consultation with student's advisor). Repeatable to a maximum of 9 cr hrs.</td>
</tr>
<tr>
<td>5701 Topics in French and Francophone Cinema</td>
<td>U G 3</td>
<td>Study of the history and aesthetics of French cinema. Topics vary. Prereq: For undergraduates - 3101 (401) plus one additional 3000- or 4000-level (400-level) course taught in French. For graduate students - Permission of the Graduate Advisor. Not open to students with credit for 670. FL Admis Cond course.</td>
</tr>
<tr>
<td>5702 Studies in French Cinema</td>
<td>U G 3</td>
<td>Study of the history and aesthetics of French cinema. Taught in English. Prereq: 10 cr hrs or 6 sem hrs in Literature and/or Cinema taken at the 2000 (200) level, or permission of instructor; or Grad standing, and permission of the Graduate Studies Chair in consultation with student's advisor. Not open to students with credit for 672. Repeatable to a maximum of 6 cr hrs.</td>
</tr>
<tr>
<td>5797 Advanced and Graduate Study at a Foreign Institution</td>
<td>U G 1 - 6</td>
<td>An opportunity for advanced undergraduate and graduate students to study at a foreign institution and receive Ohio State credit for that work. Prereq: Permission of department study abroad credit advisor. Repeatable to a maximum of 15 cr hrs or 5 completions.</td>
</tr>
<tr>
<td>6193 Graduate Independent Study</td>
<td>G 1 - 15</td>
<td>Graduate independent study. Repeatable to a maximum of 30 cr hrs or 30 completions.</td>
</tr>
<tr>
<td>6194 Graduate Group Studies</td>
<td>G 1 - 15</td>
<td>Graduate group studies. Repeatable to a maximum of 30 cr hrs or 30 completions.</td>
</tr>
<tr>
<td>6571 French Reading for Research I</td>
<td>G 3</td>
<td>Designed primarily for students who have no formal preparation in French; covers basic grammar and vocabulary and develops students' reading skills. Credit does not apply to the minimum number of hours required for the master's or doctoral degrees. Prereq: Grad standing.</td>
</tr>
<tr>
<td>6999 Master's Thesis</td>
<td>G 1 - 15</td>
<td>Master's thesis. Repeatable to a maximum of 30 cr hrs or 30 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>8193 Advanced Graduate Individual Studies</td>
<td>G 1 - 9</td>
<td>Graduate independent study. Prereq: Written permission of instructor. Not open to students with 15 cr hrs for 693. Repeatable to a maximum of 18 cr hrs or 18 completions. FL Admis Cond course.</td>
</tr>
<tr>
<td>8194 Advanced Graduate Group Studies</td>
<td>G 1 - 9</td>
<td>Investigation of problems in the various fields of French literature and language. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs or 18 completions. FL Admis Cond course.</td>
</tr>
<tr>
<td>8202 Classical and Enlightenment Studies</td>
<td>G 3</td>
<td>Intensive exploration of a special topic or problem, with readings in literary works and in relevant criticism and scholarship through 17th- and 18th-century France. Repeatable to a maximum of 12 cr hrs. FL Admis Cond course.</td>
</tr>
<tr>
<td>8204 Francophone Studies</td>
<td>G 3</td>
<td>Various topics and issues in non-European francophone literatures and cultures. Repeatable to a maximum of 12 cr hrs.</td>
</tr>
<tr>
<td>8205 French and Francophone Studies Across Boundaries</td>
<td>G 3</td>
<td>Study of aspects of French and Francophone literature, culture, and film across boundaries of historical period, geography, genre, and/or medium. Variable topics. Repeatable to a maximum of 9 cr hrs.</td>
</tr>
<tr>
<td>8302 Issues in Second Language Studies</td>
<td>G 3</td>
<td>Explores in depth a particular area or issue of second language acquisition. Repeatable to a maximum of 12 cr hrs.</td>
</tr>
<tr>
<td>8303 Teaching Apprenticeship</td>
<td>G 1 - 3</td>
<td>An apprenticeship for advanced doctoral students to work with faculty members on the design and teaching of upper-level French language, literature, and culture courses. Prereq: Two years previous teaching experience; permission of instructor and graduate studies chair. Not open to students with 10 cr hrs for 903. Repeatable to a maximum of 6 cr hrs or 2 completions.</td>
</tr>
<tr>
<td>8998 Pre-Candidacy Research</td>
<td>G 1 - 9</td>
<td>Pre-candidacy research and examination preparation for advanced graduate students. Repeatable to a maximum of 18 cr hrs or 18 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>8999 Dissertation Research</td>
<td>G 1 - 9</td>
<td>Research for dissertation. Prereq: Candidacy exams completed. Repeatable to a maximum of 30 cr hrs or 30 completions. This course is graded S/U. FL Admis Cond course.</td>
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<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credit Hours</td>
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<tr>
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</tr>
<tr>
<td>8601</td>
<td>Theory and Practice</td>
<td>G 3</td>
</tr>
<tr>
<td>8602</td>
<td>Comparative French and Italian Studies</td>
<td>G 3</td>
</tr>
<tr>
<td>8899</td>
<td>Dissertation Workshop</td>
<td>G 1</td>
</tr>
<tr>
<td>1201.01T</td>
<td>College Orientation</td>
<td>U %</td>
</tr>
<tr>
<td>1201.02T</td>
<td>College Orientation for Transfer Students</td>
<td>U %</td>
</tr>
<tr>
<td>1200T</td>
<td>General Biology</td>
<td>U 4</td>
</tr>
<tr>
<td>1250T</td>
<td>General Botany with Applications</td>
<td>U 4</td>
</tr>
<tr>
<td>2194T</td>
<td>Group Studies</td>
<td>U 1 - 3</td>
</tr>
<tr>
<td>1100T</td>
<td>Introduction to General Chemistry</td>
<td>U 3</td>
</tr>
<tr>
<td>2194T</td>
<td>Group Studies</td>
<td>U 1 - 3</td>
</tr>
<tr>
<td>1201T</td>
<td>Exploring Agricultural Communication, Education</td>
<td>U %</td>
</tr>
<tr>
<td>2115T</td>
<td>Technical and Business Writing</td>
<td>U 3</td>
</tr>
<tr>
<td>2194T</td>
<td>Group Studies</td>
<td>U 1 - 3</td>
</tr>
<tr>
<td>1190.01T</td>
<td>Humanities as a Window on Cultural Pluralism: The</td>
<td>U 3</td>
</tr>
<tr>
<td>1190.02T</td>
<td>Humanities as a Window on Cultural Pluralism: Global Arts</td>
<td>U 3</td>
</tr>
<tr>
<td>2193T</td>
<td>Individual Studies</td>
<td>U 1 - 3</td>
</tr>
<tr>
<td>2194T</td>
<td>Group Studies</td>
<td>U 1 - 3</td>
</tr>
<tr>
<td>1030T</td>
<td>Basic Mathematics I</td>
<td>U 3</td>
</tr>
<tr>
<td>1040T</td>
<td>Basic Mathematics II</td>
<td>U 3</td>
</tr>
<tr>
<td>1141T</td>
<td>Business Mathematics</td>
<td>U 3</td>
</tr>
<tr>
<td>1145T</td>
<td>Technical Mathematics</td>
<td>U 3</td>
</tr>
<tr>
<td>2194T</td>
<td>Group Studies</td>
<td>U 1 - 3</td>
</tr>
<tr>
<td>1181T</td>
<td>Hispanic Culture and Language in the Workplace</td>
<td>U 3</td>
</tr>
<tr>
<td>2194T</td>
<td>Group Studies</td>
<td>U 1 - 3</td>
</tr>
<tr>
<td>5194</td>
<td>Group Studies</td>
<td>U G 1 - 6</td>
</tr>
<tr>
<td>5612</td>
<td>Introduction to Geodesy</td>
<td>U G 3</td>
</tr>
<tr>
<td>5636</td>
<td>Geovisualization Geometry: Map Projections and More</td>
<td>U G 4</td>
</tr>
</tbody>
</table>
5637 Topics in Mapping U G 3
A survey of developments in mapping and geographic information science of importance to geodetic scientists specializing in geography, geodynamics, spatial data acquisition technology, and mathematical and statistical methods.
Prereq: 5636 (636), or permission of instructor. Not open to students with credit for GeodSciM 637.

5652 Adjustment Computations U G 5
Classification of errors; measures of dispersion; variance and covariance; propagation of errors; weights, observations, and normal equations; algorithms and examples, weighted and fixed constraints, statistical tests; error ellipses.
Prereq: Math 1172, 2153, 2173 or 254 or equiv, and 2568, 4568, or 572 or equiv. Not open to students with credit for GeodSciM 650 or 651.

5660 Geometric Reference Systems U G 4
Geodetic and astronomic coordinates; ellipsoidal geometry; geodetic datums; terrestrial and celestial reference systems; reduction of celestial coordinates; polar motion; time systems.
Prereq: Math 1172, 2153, 2173, or 254 or equiv, and Math 2568, 4568, or 572 or equiv. Not open to students with credit for 650.

5781 Geodesy and Geodynamics U G 3
Crustal motion geodesy, reference frame realization and station trajectory analysis, plate motion and Euler's theorem, earthquake deformation cycle, elastic and viscoelastic methods.
Prereq: Math 1152 (153), 2174, 2568, or 5801, or Physics 1251; or permission of instructor. Not open to students with credit for GeodSciM 761.

6193 Individual Studies in Geodetic Sciences G 1 - 6
Assigned readings, laboratory, or field work, under the guidance of a faculty member, arranged to meet the requirements of individual students.
Prereq: Permission of instructor. Repeatable to a maximum of 40 credit hours for any combination of 6193 and 693. This course is graded S/U.

6776 Physical Geodesy G 4
The gravity field and its potential; the disturbing potential and its representation; applications and current methods.
Prereq: 5660 (660), or permission of instructor. Not open to students with credit for GeodSciM 776.

6777 Satellite Geodesy G 3
Geometric and dynamic applications of artificial satellites in geodesy; determination of station positions and the gravity field of the Earth.
Prereq or concur: 6776 (776) or equiv. Not open to students with credit for GeodSciM 777.

6786 Geospatial Data Structures for Computer Mapping and GIS G 3
Introduction to spatial data structures and algorithms for computer mapping; implementation of algorithms for domain-specific data structures using object-oriented programming languages.
Prereq: CSE 2221 (222) or equiv, or permission of instructor. Not open to students with credit for GeodSciM 786.

7783 Advanced Adjustment Computations G 4
Large patterned systems, Gauss-Markoff model and mixed models; collocation and its robustification; generalized matrices in geodetic science; sequential algorithms; consistency checks; error ellipsoids; variance component estimation; Kalman filtering.
Prereq: 5652 (651) or equiv. Not open to students with credit for GeodSciM 762.

7785 Analysis and Design of Geodetic Networks G 2
Geodetic network definition; invariant quantities; geodetic datum; measures of accuracy and reliability; model tests; outlier detection; network design; optimality criteria; introduction to geodetic deformation analyses.
Prereq: 7763 (762) or equiv. Not open to students with credit for 785.

7837 Computational Cartography G 4
Computational techniques and computational complexity of various operations of digital mapping; special emphasis on classical and recent map generalization algorithms, presented to illustrate methods of computer cartography.
Prereq: 6786 (786), or CSE 2331 or 660, or permission of instructor. Not open to students with credit for GeodSciM 837 or 838.

7875 Spectral Methods in Geodesy G 3
Spectral analysis theory and techniques in gravimetric geodesy; Fourier, Hankel, and Legendre transforms; convolutions, discrete techniques, correlation and power spectral density estimation and frequency-domain lsc.
Prereq: Permission of instructor. Not open to students with credit for GeodSciM 875.

7988 Research in Geodetic Science G 1 - 12
Graduate-level research.
Prereq: Grad standing in Geodetic or Earth Sciences. Repeatable. This course is graded S/U.

7999 Research for Thesis in the Geodetic Sciences G 1 - 12
Graduate-level research for thesis.
Prereq: Grad standing in Geodetic or Earth Sciences. This course is graded S/U.

8785 Research Principles and Techniques G 2 - 9
Training for research in any area for which the student has appropriate preparation.
Prereq: Permission of instructor. Repeatable to a maximum of 60 cr hrs or 20 completions for any combination of 8785 or 885. This course is graded S/U.

8862 Adjustment Computations for Random Processes G 2
Random effects model, optimal and robust prediction, weak hypothesis testing, spatial processes, covariance function, variogram, homoeogram, Kriging and alternative interpolators, quality measures.
Prereq: 5652 (650) or equiv. Not open to students with credit for GeodSciM 862.

8871 Advanced Physical Geodesy G 3
Boundary-value problem; use of spherical harmonics; statistical application; appropriate representations; computations in space; combination of gravimetric and satellite data.
Prereq: 7763 (763) and 7777 (777) or equiv. Not open to students with credit for GeodSciM 871.

8873 Advanced Satellite Geodesy G 3
Dynamics of earth-orbiting satellites; equations of motion and their solutions; advanced data acquisition methods; analysis for the gravity field and station positions.
Prereq: 7763 (763) and 7777 (777) or equiv. Not open to students with credit for GeodSciM 873.

8998 Research in Geodetic Science G 1 - 12
Graduate-level research.
Prereq: Grad standing in Geodetic or Earth Sciences. Repeatable. This course is graded S/U.

8999 Dissertation Research in Geodetic Science G 1 - 12
Research for dissertation.
Prereq: Grad standing in Geodetic or Earth Sciences. Repeatable. This course is graded S/U.

1900 Extreme Weather and Climate U 4
Surveys characteristics and processes of Earth's atmosphere and how it interacts with the planet's surface, oceans, and human activity. The course focuses on how these interactions work to produce extreme weather events and climate extremes and how they affect people.
Prereq: Not open to students with credit for 1900H (120H), 2860 (220), 5900 (520), 120, or AtmosSc 2940 (230). GE nat sci phys course.

1900H Extreme Weather and Climate U 4
Surveys characteristics and processes of Earth's atmosphere and how it interacts with the planet's surface, oceans, and human activity. The course focuses on how these interactions work to produce extreme weather events and climate extremes and how they affect people.
Prereq: Honors standing, or permission of instructor. Not open to students with credit for 1900 (120), 120H, 2860 (220), 5900 (520), or AtmosSc 2940 (230). GE nat sci phys course.

2100 Human Geography U 3
Introduces students to the field of human geography; focus on real-world problems, such as migration, war, imperialism, environment, trade, conflict, inequality, and urbanization by applying key human geography concepts, such as place, space, scale, landscape, and territory.
Prereq: Not open to students with credit for 205. GE soc sci indivs and groups course.

2193 Individual Studies in Geography U 1 - 9
Independent studies on selected Geography related topics.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.

2194 Group Studies in Geography U 1 - 3
Special studies on topics directly related to Geography. Repeatable to a maximum of 15 cr hrs or 5 completions.

2194H Group Studies in Geography U 1 - 3
Special studies on topics directly related to Geography.
Prereq: Honors standing or permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions.

2200.01 Mapping Our World U 3
Introduction to the power of maps, covering spatial representation, visual literacy, and geographic information technology in a global society.
Prereq: Not open to students with credit for 2200.02 or 480. GE data anly course.

2200.02 Mapping Our World U 3
Study abroad in Scandinavia. Introduction to the power of maps, covering spatial representation, visual literacy, and geographic information technology in a global society.
Prereq: Permission of instructor. Not open to students with credit for 2200.01 or 480. GE data anly course.

2400 Economic and Social Geography U 3
Geographic analysis of relationships between society and economy; focusing on such issues as globalization, production and consumption, inequality and social difference.
Prereq: Not open to students with credit for 2400H. GE soc sci human, nat, and econ resources and diversity global studies course.

2400H Economic and Social Geography U 3
Geographic analysis of relationships between society and economy; focusing on such issues as globalization, production and consumption, inequality and social difference.
Prereq: Honors standing, or permission of instructor. Not open to students with credit for 240 or 240H. GE soc sci human, nat, and econ resources and diversity global studies course. SS Admis Cond course.
220 Geography

2500 Cities and their Global Spaces U 3
Globalization and urbanization; urban economies, spaces, and societies; function, form, and pattern in developed and developing world cities.
GE soc sci orgs and polities and diversity global studies course.

2750 World Regional Geography U 3
Develops students’ knowledge of world geography through the twin concepts of region and globalization; focuses on culture, society, politics, economy, and interplay between people and environments.
Prereq: Not open to students with credit for 200 or 2075H (200H). GE soc sci human, nat, and econ resources and diversity global studies course. SS Admins Cond course.

2750H World Regional Geography U 3
Develops students’ knowledge of world geography through the twin concepts of region and globalization; focuses on culture, society, politics, economy, and interplay between people and environments.
Prereq: Honors standing, or permission of instructor. Not open to students with credit for 2500 (200) or 2075H. GE soc sci human, nat, and econ resources and diversity global studies course. SS Admins Cond course.

2800 Our Global Environment U 3
Introduction to global environmental issues, including the interaction of physical and social factors in the causes and strategies for ameliorating environmental problems.
Prereq: Not open to students with credit for 1900 (120), 1900H (120H), 2060 (220), 2060H (220H), or 210. GE nat sci phyis course.

2960 Introduction to Physical Geography U 4
The elements and processes of the natural environment, their characteristics, distribution, and implications in the human habitat.
Prereq: Not open to students with credit for 1900 (120), 1900H (120H), 2060 (210), 2060H (220H), or 220. GE nat sci phyis course. NS Admins Cond course.

2960H Introduction to Physical Geography U 4
The elements and processes of the natural environment, their characteristics, distribution, and implications in the human habitat.
Prereq: Honors standing, or permission of instructor. Not open to students with credit for 222H, 1900 (120), 1900H (120H), 2060 (220), or 2800 (210). GE nat sci phyis course. NS Admins Cond course.

3300 Transportation Security U 3
Geographic aspects of transportation security. Spatial analysis of transportation linkages. Relationships between transportation and spatial organization; selected analytical models dealing with threats to transportation security.
Prereq: Not open to students with credit for 445.

3597.01 World Urbanization U 3
An examination of geographic aspects of the urbanization process in the world's major regions; interrelationships between urbanization and economic development.
Prereq: Not open to students with credit for 3701 (450) or 3597.01. GE cross-disciplinary seminar course.

3597.03 Environmental Citizenship U 3
Provides tools for environmental citizenship by teaching interdisciplinary perspectives on biophysical and sociocultural forces that shape environments. Addresses general processes through local case studies.
Prereq: Not open to students with credit for 597 or English 3597 (597.03). GE cross-disciplinary seminar course.

3600 Space, Power and Political Geography U 3
Political geographic thought; territory and territoriality; borders and scale; space, power and uneven development; states and statecraft; and the politics of nations, regions and locales.
Prereq: Not open to students with credit for 460 or 460H. GE soc sci orgs and polities course.

3600H Space, Power and Political Geography U 3
Political geographic thought; territory and territoriality; borders and scale; space, power and uneven development; states and statecraft; and the politics of nations, regions and locales.
Prereq: Honors standing, or permission of instructor. Not open to students with credit for 460 or 460H. GE soc sci orgs and polities course.

3701 The Making of the Modern World U 3
The geographies of modernity and their formation: the world market, the global polity, diasporas and contrasting differences, colonialism, the transformation of nature, Eurocentricty, post-modernity.
Prereq: Not open to students with credit for 450. GE soc sci orgs and polities and diversity global studies course.

3702 Life and Death Geographies: Global Population Dynamics U 3
Theories of population change; global and national contexts of fertility policy and reproductive health, morbidity and mortality trends; migration; environmental effects of population growth; urbanization.
Prereq: Not open to students with credit for 470.

3750 Geography of North America U 3
Geographical analysis of North America; spatial patterns and processes associated with culture, politics, economy and social difference at international, national, regional and urban scales.
Prereq: Not open to students with credit for 400. GE diversity soc div in the US course.

3751 Geography of Ohio U 3
An appraisal of geographic factors in the settlement and development of Ohio; an overview of the evolution of the Ohio economy.
Prereq: Not open to students with credit for 401.

3753.02 Geography of the European Union U 3
Study abroad in Cyprus. Geographic factors in the economic, social, and political progress of European integration; major problems of the area in the light of their geographic background.
Prereq: Permission of instructor. Not open to students with credit for 3753 (510) or 3753.01.

3800 Geographical Perspectives on Environment and Society U 3
Geographical understanding of interactions between society and environment; how historical and contemporary views of the environment influence people’s actions toward the environment and other people.
Prereq: Not open to students with credit for 430. GE soc sci human, nat, and econ resources course.

3801 Political Ecology U 3
Introduces students to a geographical school of nature-society thought. It situates PE in the hundred years of geographic thought on nature-society relations prior to PE’s emergence in the 1970s, and follows how the field developed since then.

3900 Global Climate Change: Causes and Consequences U 3
Examines the natural and human factors that force changes in our climate and environment and explores strategies for a sustainable environment in the future.
Prereq: Not open to students with credit for 3901H (410H) or 420. GE nat sci physical course.

3901H Global Climate and Environmental Change U 3
Examines both natural and social factors that force changes in our climate and environment and explores strategies for a sustainable environment in the future.
Prereq: Honors standing, or permission of instructor. Not open to students with credit for 3900 (420) or 410H. GE nat sci phyis and soc sci human, nat, and econ resources course.

3980 Biogeography: An Introduction to Life on Earth U 3
The patterns and processes responsible for the global distribution of Earth’s flora and fauna; the inter-relationship between biota and soils; climate and topography will be emphasized.
Prereq: Not open to students with credit for 490.

4100 Geographic Inquiry U 3
History of geographic thought; covers major advances and debates in theory and method, and outlines major contributions of geographic research. This is a capstone course for Geography majors in Environment & Society and Urban, Regional, and Global Studies specializations.
Prereq: Not open to students with credit for 600.

4101 Undergraduate Research and Professionalization Seminar U 3
Course for geography majors that identifies key skills, concepts, and tools that characterize a geographer’s training, and guides students in recognizing and articulating them. Explores trends and issues in the labor market relevant to geography-related careers. Introduces research skills, including generating, analyzing, and presenting geographic information.
Prereq: 3 semester hours in Geog.

4103 Introductory Spatial Data Analysis U 3
An introduction to spatial data analysis in geography: the fundamental statistical and spatial analysis methods used in quantitative geographic research.
Prereq: Math 1111 or 1130 or above, or Math Placement Level M or L, or permission of instructor. Not open to students with credit for 5100.

4191 Internship in Geography U 1 - 6
An opportunity for practical experience and on-the-job learning in a Geography-related work place.
Prereq: 12 cr hrs in major program, and permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.

4193 Individual Studies in Geography U 1 - 9
Independent studies on selected Geography related topics.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.

4194 Group Studies in Geography U 1 - 3
Special studies on topics directly related to Geography.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.

4988 Undergraduate Research in Geography U 1 - 9
Undergraduate research on topics in Geography.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.

4998H Undergraduate Research in Geography U 1 - 9
Undergraduate research on topics in Geography.
Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.
4999 Thesis Research U G 1 - 9
A program of research which includes individual conferences and which culminates in a thesis. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.

4999H Honors Thesis Research U G 1 - 9
A program of research which includes individual conferences and which culminates in an honors thesis and an oral defense. Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.

5103 Intermediate Spatial Data Analysis U G 3
An intermediate class in spatial data analysis for geography. This course focuses on multivariate model building and evaluation, with a special emphasis on multiple regression models commonly used by geographers: spatial regression, conditional autoregressive, and geometrically weighted regression. Prereq: 4103 or introductory statistics course from Geography or other department. Not open to students with credit for 5100.

5193 Individual Studies in Geography U G 1 - 15
Independent studies on selected Geography related topics. Prereq: Permission of instructor. Repeatable to a maximum of 75 cr hrs or 5 completions. This course is graded S/U.

5194 Group Studies in Geography U G 1 - 3
Special studies on topics directly related to Geography. Repeatable to a maximum of 15 cr hrs or 5 completions.

5200 Cartography and Map Design U G 3
A study of the cartographic techniques of map compilation and design including generalization, symbolization, reproduction, and GIS-based mapping with an emphasis on thematic mapping. Prereq: Not open to students with credit for 5200S.

5205S Cartography and Map Design U G 3
A study of the cartographic techniques of map compilation and design including generalization, symbolization, reproduction, and GIS-based mapping with an emphasis on thematic mapping. Prereq: Not open to students with credit for 5200 (360) or 580S. GE service learning course.

5201 GeoVisualization U G 3
Examination of issues, techniques and applications of analytic cartography, interactive maps and scientific visualization for exploring geographic data. Prereq: A grade of C- or above in 5200 or 5205S.

5210 Fundamentals of Geographic Information Systems U G 3
Basic principles of geographic and land information systems and their use in spatial analysis and information management. Prereq: Not open to students with credit for 5220, CRP/En 5001, or Civ/En 5001.

5212 Geospatial Databases for GIS U G 3
Focuses on designing, implementing, querying and managing spatial databases or persistent data stores where most entities have footprints in geographic space and time. This is critical for designing and implementing GIS for projects and organizations. It is also crucial for moving beyond GIS to the bigger world of geographic information services. Prereq: 5210 and CSE 1141; or permission of instructor.

5222 GIS Algorithms and Programming U G 3
The theory and algorithms underpinning today's GIS technology and the development of custom GIS applications using the Python programming language.

5223 Design and Implementation of GIS U G 3
Practice-oriented development, design, implementation and evaluation of spatial databases, with an emphasis on local problems. Prereq: A grade of C- or above in 5222, or permission of instructor.

5225 Geographic Applications of Remote Sensing U G 3
Introduction to the fundamental principles, methods, and geographic applications of remote sensing. Prereq: Not open to students with credit for 5270.

5226 Spatial Simulation and Modeling in GIS U G 3
Fundamental modeling and simulation techniques in GIS, including cellular automata, diffusion models, and agent-based models, and their applications in social, environmental, and natural resources research. Prereq: Not open to students with credit for 5221 or 685.

5229 Emerging Topics in GIS U G 3
Examination of major recent developments in the theories, technologies, and/or applications of geographical information science. Prereq: A grade of C- or above in 5210. Not open to students with credit for 5224. Repeatable to a maximum of 15 cr hrs.

5300 Geography of Transportation U G 3
Relation between transportation and spatial organization; selected analytical models dealing with traffic demand, network configuration, and allocation of transport facilities; application to selected problems. Prereq: Not open to students with credit for 645.

5501 Sustainable Transportation U G 3
Sustainable transportation generates accessibility while minimizing harm to people and the natural environment. This course examines the problems associated with transportation, including climate change, air quality, non-renewable resources, safety, congestion and social equity. We will also examine solutions to these problems, including pricing, planning, policy and technology.

5602 Conflict, Power & Politics in the City U G 3
The changing politics of space in cities: class, neighborhood, and workplace in the industrial and the post-industrial city. Prereq: Not open to students with credit for 660.

5700 Geography of Development U G 3
Political economy of development: development theory; the historical geography of capitalist development; and contemporary development practices and strategies. Prereq: Not open to students with credit for 642.

5751 New Worlds of Latin America U G 3
Exploration of ongoing debates about achieving socially equitable and environmentally sustainable change in Latin America; emphasizes case studies and personal narratives from the lowland tropics. Prereq: Not open to students with credit for 605.

5797 Study at a Foreign Institution U G 1 - 9
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions.

5801 Environmental Conservation U G 3
Conservation of nature; nature-society theory; conflicts around environmental change and contemporary conservation programs and strategies. Prereq: Not open to students with credit for 630.

5802 Globalization and Environment U G 3
Transnational dimensions of changes to the natural environment; ways that global economic activity, international institutions, and global environmentalism contribute to environmental problems and solutions. Prereq: Not open to students with credit for 635.

5803 Sustainable Energy Geographies U G 3
Sustainable development; Energy systems; Energy production, consumption, and conservation; Environmental and societal impacts.

5921 Microclimatology: Boundary Layer Climatology U G 3
Theory of exchanges of energy and mass at the Earth-atmosphere interface as it relates to microclimates with particular emphasis upon radiation and climate. Prereq: A grade of C- or above in 5900 or AtmosSc 2940, or permission of instructor, and Physics 1250.
Geography

5922 Microclimatology: Microclimatological Measurements U G 3
Practical experience in the fabrication of instruments, deployment of measurement systems in the field, and recording of data related to microclimates.
Prereq: A grade of C- or above in 5921.

5940 Synoptic Meteorology Laboratory U G 2
Introduction to reading and interpretation of synoptic weather maps and diagrams- and data-communications systems.
Prereq: 5900 (520) or AtmosSc 230 or 2940 (230) or permission of instructor; and Physics 132 or its successor. Not open to students with credit for 620 or AtmosSc 620 or AtmosSc 5940.
Cross-listed in AtmosSc.

5941 Synoptic Meteorology: Synoptic Analysis and Forecasting U G 3
Physical processes associated with large-scale mid-latitude weather systems and the theory and practice of forecasting their weather and impacts.
Prereq: Math 2153, and a grade of C- or above in Geog 5940 or AtmosSc 5940.

5942 Synoptic Meteorology: Severe Storm Forecasting U G 3
Physical processes associated with mesoscale weather systems from thunderstorms to tornadoes and the theory and practice of forecasting their weather and impacts.
Prereq: A grade of C- or above in 5941.

6020 Foundations of Data-Driven Sustainable Energy Systems G 3
Introduction to issues impacting sustainable energy systems across technology, law and policy, business models, resilience, data, geopolitical, and decision sciences.
Prereq: Enrollment in Data-Driven Sustainable Energy Systems Graduate Interdisciplinary Specialization, or permission of instructor. Not open to students with credit for AEDEcon 6500, EnvEng 6020, FABEng 6020, ISE 6020, or PubAfns 6020. Cross-listed in AEDEcon 6500, EnvEng 6020, FABEng 6020, ISE 6020, and PubAfns 6020.

6299 GIS Capstone Project G 3
The purpose of this course is for students to showcase the knowledge learned and skills developed in the GIS graduate program.

7101 Research Design G 3
Introduction to research procedures, problem formulation, and application of research techniques in geography.
Prereq: Grad standing in Geog, or permission of instructor. Not open to students with credit for 795.

7102 Fieldwork in Human Geography G 3
Methods for generating and interpreting field data; contested history and ethical challenges of fieldwork in human geography.
Prereq: Not open to students with credit for 800.01 or 870.01.

7193 Individual Studies in Geography G 1 - 15
Independent studies on selected Geography related topics.
Prereq: Permission of Instructor. Repeatable to a maximum of 75 cr hrs or 5 completions. This course is graded S/U.

7194 Group Studies in Geography G 1 - 3
Special studies on topics directly related to Geography. Repeatable to a maximum of 15 cr hrs or 5 completions.

7999 Thesis Research G 1 - 9
Thesis Research.
Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.

8100 Development of Geographic Thought G 3
The evolution of concepts concerning the nature, scope, and methodology of geography; present focus and trends as reflected in current literature.
Prereq: Not open to students with credit for 882.

8102 Advanced Spatial Data Analysis G 3
Application of quantitative methods to geographic problems; spatial statistics, area sampling, maps of residuals, regionalization methods, and simulation maps.
Prereq: 5100. Not open to students with credit for 883.02.

8104 Special Topics in Quantitative Geography G 3
Applications of advanced mathematical and statistical models to problems in geographical analysis.
Prereq: 8102 or 883.01 or 883.02. Repeatable to a maximum of 15 cr hrs.

8109 Graduate Student Professionalization G 3
Introduction to professional experience for graduate students. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.

8200 Frontiers in Geographic Information Science G 3
Readings and research in geographic information science.
Repeatable to a maximum of 15 cr hrs or 5 completions.

8400 Issues in Critical Human Geography G 3
Course engages a variety of theoretical and epistemological issues in critical human geography. Specific topics vary.
Repeatable to a maximum of 15 cr hrs or 5 completions.

8502 Seminar in Urban Geography: Urban Systems Analysis G 3
The development of theory in urban geography and its application to selected problems in urban systems analysis.
Repeatable to a maximum of 15 cr hrs or 5 completions.

8601 Seminar: Theory of Political Geography G 3
The development of theory in political geography and its application to selected problems.
Repeatable to a maximum of 15 cr hrs or 5 completions.

8901 Seminar: Problems in Climatology G 3
Problems in climatology.
Repeatable to a maximum of 15 cr hrs.

8902 Applied Climatology G 3
Analysis of climatic and environmental change on various time scales; human impact on climate; theory and application of long-range and climate forecasting.
Prereq: 5941 (623.01) or permission of instructor. Not open to students with credit for 823.

8960 Seminar: Special Problems in Physical Geography G 3
Special problems in physical geography.
Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

8999 Research in Geography: Dissertation G 1 - 9
Research for dissertation purposes only.
Repeatable to a maximum of 75 cr hrs or 5 completions. This course is graded S/U.

German

1101.01 German I U 4
Introduction to language and culture of the German-speaking world, with emphasis placed on the acquisition of basic communication skills in cultural context. CEFR Levels A1/A2. Not open to native speakers of this language through regular course enrollment or EM credit, or to students with 2 or more years of study in this language in high school, except by permission of instructor.
Prereq: Not open to students with credit for 1101.51. This course is available for EM credit. GE for large course.

1101.51 German I - Variable-Credit U 1 - 4
German 1101.01 content in variable-credit format for independent learners of German. CEFR Levels A1/A2. Progress is sequential from 1 cr hr to the next, with proficiency at the level of 80% required for advancement. Not open to native speakers of this language through regular course enrollment or EM credit, or to students with 2 or more years of study in high school, except with permission of instructor.
Prereq: Not open to students with credit for 1101.01. Repeatable to a maximum of 4 or 4 hrs or 4 completions. This course is available for EM credit. GE for large course.

1101.61 Beginning German I (Variable-Credit Distance Learning) U 1 - 4
German 1101.61 is an online version of German 1101. This course allows students to work through the first of Ohio State's 3-course introductory German sequence in a variable-credit Distance-Learning format. Students will learn to write, read, listen to and speak German, completing work independently with materials and instructor support.
Prereq: Not open to students with credit for 1101.01 or 1101.51. Repeatable to a maximum of 4 or 4 hrs. This course is available for EM credit. GE for large course.

1102.01 German II U 4
Continued development of German-language skills and cultural knowledge for effective communication. Emphasis on more advanced language structures, sustained interactions, reading and writing. CEFR Levels A2/B1. Not open to native speakers of this language through regular course enrollment or EM credit.
Prereq: 1101.01, or 4 sem cr hrs of 1101.51, or concur: 1101.01, or 1101.51; or permission of instructor. Not open to students with credit for 1102.51. This course is available for EM credit. GE for large course.

1102.51 German II - Variable-Credit U 1 - 4
German 1102.01 content in variable-credit format for independent learners of German. CEFR Levels A2/B1. Progress is sequential from one or cr hr to the next, with proficiency at the level of 80% required for advancement. Not open to native speakers of this language through regular course enrollment or EM credit.
Prereq: 1101.01, or 4 cr hrs of 1101.51; or concur: 1101.01, or 1101.51; or permission of instructor. Not open to students with credit for 1102.01. Repeatable to a maximum of 4 or 4 cr hrs or 4 completions. This course is available for EM credit. GE for large course.

1102.61 Beginning German II (Variable-Credit Distance Learning) U 1 - 4
German 1102.61 is an online version of German 1102. This course allows students to work through the second of Ohio State's 3-course introductory German sequence in a variable-credit Distance-Learning format. Students will learn to write, read, listen to and speak German, completing work independently with materials and instructor support.
Prereq: 1101.01, or 4 sem cr hrs of 1101.51, or concur: 1101.01, or 1101.51; or permission of instructor. Not open to students with credit for 1102.51. This course is available for EM credit. GE for large course.
Development of skills for independent use of German. Discussions, presentations, writing &
listening/viewing activities that address topics of the contemporary German-speaking world.
CEFR Level B1. Not open to native speakers of this language through regular course
enrollment or EM credit.
Prereq: 1102.01, or 4 sem hrs of 1102.01, or 1266, or conc: 1102.01, or 1102.51, or
permission of instructor. Not open to students with credit for 1103.51. This course is available for
EM credit. GE for lang course.

1103.51 German III - Variable-Credit
German 1103.51 content in variable-credit format for independent learners of German. CEFR
Level B2. Progress is sequential from one cr or to the next, with proficiency at the level of 80%
required for advancement. Not open to native speakers of this language through regular course
enrollment or EM credit.
Prereq: 1102.01 or 1266, or 4 or hrs of 1102.51; or conc: 1102.01, 1102.02, 1102.51, or
permission of instructor. Not open to students with credit for 1103.51. Repeatable to a
maximum of 4 or hrs or 4 completions. This course is available for EM credit. GE for lang
course.

1103.61 Beginning German III (Variable-Credit Distance
Learning) German 1103.61 is an online version of German 1103. This course allows students to work
through the third of Ohio State's 3-course introductory German sequence in a variable-credit
Distance-Learning format. Students will learn to write, read, listen to and speak German,
completing work independently with materials and instructor support.
Prereq: 1102.01, 1102.51, or 1102.61. Not open to students with credit for 1103.01 or 1103.51.
Repeatable to a maximum of 4 or hrs or 4 completions. This course is available for EM credit. GE for lang
course.

2101 Texts and Contexts I: Contemporary German Language, Culture
and Society Development of communication skills and knowledge about recent social, cultural,
and political developments in German-speaking countries through texts, media and film; CEFR level A2/B1.
Closed to native speakers of this language.
Prereq: 1103 or 1103.51, or equiv, or permission of instructor. No auditing. FL Admis Cond
course.

2102 Texts and Contexts II: 20th-Century German Language,
History and Culture Continued development of communication skills; gain an understanding of major social and
cultural developments in 20th century German history through texts, media, film. CEFR level B1.
Prereq: 2101 or equiv, or permission of instructor. FL Admis Cond course.

2193 Individual Studies Individual investigation of minor problems in German language and literature.
Prereq: Permission of Chairperson. Repeatable to a maximum of 16 cr hrs or 4 completions.
This course is progress graded (SU).

2194 Group Studies Investigation of minor problems in German literature and language.
Prereq: Permission of Chairperson. Repeatable to a maximum of 16 cr hrs or 4 completions.

2250 Berlin: Stories, Languages, and Ideas The roles Berlin played in Europe's and the world's major upheavals, from the Thirty Years' War to the Fall of the Wall in 1990, and insight into the increasing internationalization of Berlin from three perspectives: stories told by and about Berlin's citizens; philosophical & scientific ideas generated in Berlin; and multilingual dialects and variations.
GE lit and diversity global studies course.

2251 German Literature and Popular Culture Study of popular culture forms in relation to the artistic, intellectual, historic,
and literary traditions of the German-speaking world. Taught in English.
Repeatable to a maximum of 9 or hrs. GE lit course.

2253 Magic, Murder and Mayhem Origins and highlights of German culture and life from 1648 as reflected in literary and poetic works, Germanic mythology, religion, and the arts.
Prereq: Not open to students with credit for 291. GE lit and diversity global studies course.

2254 Grimm’s Fairy Tales and their Afterlives Working to understand the meaning and the enduring appeal of one of Germany's greatest
successes in the realm of cultural exportation - the Grimms' fairy tales, a book whose
influence is exceeded in Western culture only by those of the Bible. To explore their
reach, we will also compare them to their adaptations in literature and film, from dark to Disney.
GE lit course.

2255 Postwar Culture in Germany and Japan This course will examine postwar culture in Germany and Japan, looking at films, theoretical
texts, memoirs, manifestos, and literary works, subjecting our material to cross-cultural
analysis that should deepen as our basis for comparison expands. Team-taught with faculty in
Japanese.
Prereq: Not open to students with credit for Japanese 2255. Cross-listed in Japanese. GE cultures and ideas course.

2256 Fan Fiction: From Homer to Harry Potter Enthusiastic readers of Harry Potter write sequels, prequels, and spinoffs and post them online
every day. But writing fan fiction is far from new. In this course, we will investigate the surprising
history of this literary form. We'll analyze works of fan fiction, asking how ideas of
originality, authorship, and intellectual property influence art and literature.
GE lit course.

2310 Nature in Nordic and German Literatures German perspectives on and in 20th-century American culture. Influence of German thought and
writing on American culture: German views of American culture. Taught in English.
Prereq: English 1110.01, 1110.02, and 1110.03 or equiv. Not open to students with credit for
367. GE writing and comm course: level 2. EN Admis Cond course.

2367 German Literature and American Culture German perspectives on and in 20th-century American culture. Influence of German thought
and writing on American culture: German views of American culture. Taught in English.
Prereq: English 1110.01, 1110.02, and 1110.03 or equiv. Not open to students with credit for
367. GE writing and comm course: level 2. EN Admis Cond course.

2451 Hollywood: Exiles & Emigres German cinema has played an influential role in the development of international film genres.
In this class we look at examples of films made in Hollywood that bear the stamp of German
influence. We also look at films made in Germany that show that influence flows in both
directions. This course assumes no prior knowledge of German, German films, or film theory in
general. Taught in English.
Prereq: Not open to students with credit for 671. GE VPA course.

2798.02 Berlin, Then and Now: People, Places, and Experiences Students will explore and experience the cosmopolitan and increasingly diverse Berlin by
learning about some of the most influential or memorable persons who live or have lived in the
city-from its establishment as a capital of the Prussian kingdom in the 18th century to its
present role as capital of a reunified, democratic Germany and a center of European and
global politics and culture.
GE diversity global studies and education abroad course.

3101 Texts and Contexts III: Historical Perspectives Development of intermediate/advanced communication skills; broadening of cultural and
historical knowledge through interaction with literary and non-literary materials informed by
historical perspective; CEFR level B1/B2.
Prereq: 2902 or equiv, or permission of instructor. FL Admis Cond course.

3102 News and Views: Conversations about Current Issues in the German-Speaking World This course will inform students about events, issues, and trends in the German-speaking
world today, and improve their German language skills. Students will expand their ability to
better their information about current events from German-language sources (print, audio, and
video); to summarize and analyze these sources; and to speak and write formally and
informally about current events.
Prereq: 2902 or equiv., or permission of instructor.

3200 Topics in German Literature, Art and Film Focused exploration of topics in German literature, art, and film as expressions of culture in a
transnational context, aimed at improving students' critical comprehension and communication
skills.
Prereq: 2902 or equiv, or permission of instructor. Repeatable to a maximum of 6 cr hrs. Admis
Cond course.

3252.01 The Holocaust in German Literature and Film Reading, analysis, and discussion of representative works pertaining to the Holocaust from the
perspective of German literature and film. Taught in English.
Prereq: Not open to students with credit for 3252.02 or Yiddish 3399. GE lit and diversity global
studies course.

3252.02 The Holocaust in German Literature and Film German 3252.02 is an online version of German 3252.01. Reading, analysis, and discussion of
representative works pertaining to the Holocaust from the perspective of German literature and
film. Taught in English.
Prereq: Not open to students with credit for 3252.01. GE lit and diversity global studies course.
224 German

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Lecture</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3254H</td>
<td>Representations and Memory of the Holocaust in Film</td>
<td>U</td>
<td>3</td>
</tr>
<tr>
<td>3256</td>
<td>Coming to Terms with the Holocaust and War in Germany: Vergangenheitsbewältigung</td>
<td>U</td>
<td>3</td>
</tr>
<tr>
<td>3300</td>
<td>Topics in German Culture Studies, Social and Intellectual History</td>
<td>U</td>
<td>3</td>
</tr>
<tr>
<td>3351</td>
<td>Democracy, Fascism and German Culture</td>
<td>U</td>
<td>3</td>
</tr>
<tr>
<td>3353H</td>
<td>German Intellectual History: Marx, Nietzsche, and Freud</td>
<td>U</td>
<td>3</td>
</tr>
<tr>
<td>3600</td>
<td>Topics in German Linguistics/Language</td>
<td>U</td>
<td>3</td>
</tr>
<tr>
<td>3602</td>
<td>German for the Professions I</td>
<td>U</td>
<td>3</td>
</tr>
<tr>
<td>3603</td>
<td>Translation I</td>
<td>U</td>
<td>3</td>
</tr>
<tr>
<td>4191</td>
<td>Internship in German</td>
<td>U</td>
<td>3 - 6</td>
</tr>
<tr>
<td>4194</td>
<td>Undergraduate Group Studies</td>
<td>U</td>
<td>1 - 4</td>
</tr>
<tr>
<td>4200</td>
<td>Senior Seminar in German: Literature, Art and Film (German)</td>
<td>U</td>
<td>3</td>
</tr>
<tr>
<td>4300</td>
<td>Senior Seminar in German: Culture Studies, Social and Intellectual History (German)</td>
<td>U</td>
<td>3</td>
</tr>
<tr>
<td>4600</td>
<td>Senior Seminar in German: Linguistics/Language (German)</td>
<td>U</td>
<td>3</td>
</tr>
<tr>
<td>4602</td>
<td>German for the Professions II</td>
<td>U</td>
<td>3</td>
</tr>
<tr>
<td>4998</td>
<td>Undergraduate Research Projects</td>
<td>U</td>
<td>1 - 3</td>
</tr>
<tr>
<td>4999</td>
<td>Undergraduate Research Thesis</td>
<td>U</td>
<td>1 - 4</td>
</tr>
<tr>
<td>4999H</td>
<td>Honors Undergraduate Research Projects</td>
<td>U</td>
<td>1 - 9</td>
</tr>
<tr>
<td>5193</td>
<td>Independent Studies for Advanced Students</td>
<td>U</td>
<td>G</td>
</tr>
<tr>
<td>5194</td>
<td>Group Studies</td>
<td>U</td>
<td>G</td>
</tr>
<tr>
<td>5787</td>
<td>Study at a Foreign Institute</td>
<td>U</td>
<td>G</td>
</tr>
<tr>
<td>6010</td>
<td>Basic German for Graduate Students</td>
<td>G</td>
<td>3</td>
</tr>
<tr>
<td>6020</td>
<td>Introduction to German Literary History and Analysis</td>
<td>G</td>
<td>3</td>
</tr>
<tr>
<td>6300</td>
<td>Introduction to Intellectual History and Cultural Studies</td>
<td>G</td>
<td>3</td>
</tr>
<tr>
<td>6400</td>
<td>Introduction to German Film</td>
<td>G</td>
<td>3</td>
</tr>
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Students will view, discuss, and examine major filmic representations of the Holocaust from several countries from the 1940s through the 1990s. Students will learn how these films have contributed to our understanding of a complex phenomenon of WWII and how the directors have coped with the thorny issues of representing something that many people consider to be unrepresentable. Taught in English.

Prereq: Honors, and Soph, Jr, or Sr standing, or permission of instructor. GE VPA and diversity global studies course.

Dedicated to examining how postwar Germans came to terms with war and the Holocaust by looking at various responses in several genres, from philosophy and public debates to poems and films. Students will be confronted with difficult historical, aesthetic, and ethical issues in the various German responses to the Holocaust. Taught in English.

GE cultures and ideas course.

Focused exploration of topics in the development of German-language culture and intellectual history. Content geared toward improving students' critical comprehension and communication skills in German.

Prereq: 2102 or equiv, or permission of instructor. Repeatable to a maximum of 6 cr hrs. Admis Cond course.

Culture of the Weimar Republic and Nazi Germany in literature, film, the other arts; the roots of fascism and its echoes in postwar Germany. Taught in English.

Prereq: Not open to students with credit for 298. GE cultures and ideas and diversity global studies course.

Marx, Nietzsche, and Freud are essential for understanding intellectual thought in the late nineteenth and twentieth century. They have retained their importance into the twenty-first century. The focus of the course will be the way in which Marx, Nietzsche, and Freud reconceived the notion of history, historical progress, and historiography.

Prereq: Honors standing. GE cultures and ideas course.

Understanding the German language in its historical development, standardization and its contemporary manifestations. Systematic overview of German phonetics, phonology, morphology, syntax, and varieties of modern German.

Prereq: 2102 or equiv, or permission of instructor. Repeatable to a maximum of 6 cr hrs. FL Admis Cond course.

Development of cultural knowledge and communication skills for the professions; introduction to the world of German business through audio, video, print materials; CEFR level B1-B2.

Prereq: 2102 or equiv, or permission of instructor. Not open to students with credit for 202. No audit. Admis Cond course.

German-English/English-German translation; focus on everyday language; emphasis on improvement of grammar and development of vocabulary; discussion of common translation techniques, introduction to theories of translation.

Prereq: 2102 or equiv, or permission of instructor. Repeatable to a maximum of 6 cr hrs. FL Admis Cond course.

Supervised internship arranged and approved in advance with the faculty advisor. Notify the chair no later than 6 months before the start of the internship.

Prereq: 3000-level German course, or permission of instructor. Not open to students with credit for HumCol 489. This course is graded S/U.

Investigation of minor problems in the various fields of German literature and philology.

Prereq: Permission of chairperson. Repeatable to a maximum of 16 cr hrs or 4 completions.

Focused exploration of topics in German literature, art, and film as cultural expressions within transnational contexts, to improve students' historical knowledge, skills for exploring cultural and critical-intellectual traditions. Taught in German. Counts toward fulfillment of advanced requirement for the major.

Prereq: 3101, and one course at the 3000 level, and Sr standing; or permission of instructor. Repeatable to a maximum of 6 cr hrs. FL Admis Cond course.

Investigation of minor problems in the various fields of German literature and philology.

Prereq: Permission of instructor, and required signature of undergraduate Honors Thesis advisor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

Investigation of issues in various fields of German Studies.

Prereq: Permission of adviser or Graduate Studies Committee chair as applicable. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

Investigation of minor problems in the various fields of German literature and philology.

Prereq: Permission of chairperson. Repeatable to a maximum of 9 cr hrs or 3 completions.

Investigation of issues in various fields of German Studies.

Prereq: Permission of Director of Undergraduate Studies or the Director of Graduate Studies, as applicable. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

Investigation of minor problems in the various fields of German literature and philology.

Prereq: Permission of chairperson. Repeatable to a maximum of 9 cr hrs or 3 completions.

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Prereq: Permission of chairperson. Repeatable to a maximum of 27 cr hrs or 9 completions. This course is progress graded (S/U).

The fundamentals of German grammar, as required for the reading of German texts in the sciences, social sciences, and humanities. No audit. Credit does not apply to the minimum hours required for the master's or doctoral degrees.

Prereq: Grad standing. Not open to students with credit for 571.

Independent investigation of issues in German literature, culture, intellectual history, and linguistics.

Prereq: Permission of the instructor and Director of Graduate Studies. Repeatable. This course is graded S/U.

Lecture-based introduction to the methodology and tools of literary scholarship and to major contemporary theoretical approaches to literary studies; contextualization of these methodologies and approaches within literary history.

Prereq: Grad standing, or permission of instructor. Not open to students with credit for 702.

Graduate introduction to important figures, topics, and periods within German intellectual history. Interactions with the larger European context of intellectual history and with other cultural spheres in Germany.

Prereq: Grad standing, or permission of instructor. Not open to students with credit for 703.

Graduate introduction to German arts concentrating on moving images and non-text-based forms. Overview of visual-aesthetic movements and film history since 1900 in context.

Fundamentals of analysis for film and visual media.

Prereq: Grad standing, or permission of instructor. Not open to students with credit for 672.
6600 Introduction to Teaching and Learning German at the College Level
Developing an understanding of communicative language teaching and second language acquisition as it applies to German. Overview of instructional strategies and techniques for various modalities.
Prereq: Open to Graduate Teaching Associates enrolled in the Department of Germanic Languages and Literatures; all others by permission of instructor. Not open to students with credit for 840.

6601 Teaching Practicum
G 1
This course is for GTAs who are teaching a 1000-level German language class. The course provides graduate students with instruction and practice in designing and implementing instructional materials for their undergraduate classes. It offers best practices in creating tests, developing speaking portfolios, designing culture components, and becoming reflective practitioners.
Prereq: Grad standing, and permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

6700 Introduction to the Language Sciences
G 3
Provides students with a general overview of linguistics and surveys the areas covered by the specialization: Language and Cognition, Language and Brain Function, Language and Society, Language and Technology, and Language Description and Fieldwork. Guest faculty will present in their areas of expertise and students will read and prepare assignments in multiple areas.
Prereq: Not open to students with credit for Psych 6700. Cross-listed in Psych.

6999 Master's Research
G 1 - 6
Research for the Master's Assessment.
Prereq: Permission of the master's advisor and Director of Graduate Studies. Repeatable to a maximum of 24 cr hrs or 4 completions. This course is graded S/U.

8193 Independent Studies for Doctoral Students
G 1 - 12
Research for the doctoral candidacy examination.
Prereq: Permission of the doctoral advisor and Director of Graduate Studies. Repeatable. This course is graded S/U.

8200 Seminar in Literature and Literary Culture
G 3
Topics vary in focus and emphasis, may range from individual authors, periods, or themes to theoretical and interdisciplinary issues; research paper, 3-hr cl.
Prereq: 6200, or Grad standing, or permission of instructor. Repeatable to a maximum of 30 cr hrs. Admis Cond course.

8300 Seminar in Intellectual History and Cultural Studies
G 3
Concepts, representations, and institutions of German culture in an international context; German intellectual history; theories of literature, arts, and culture.
Prereq: 6200, or Grad standing, or permission of instructor. Repeatable to a maximum of 30 cr hrs. Admis Cond course.

8400 Seminar in Film, Visual Culture and the Performing Arts
G 3
Advanced graduate seminar allowing students to broaden their engagement with non-literary culture based in German-speaking texts and to conduct research into targeted areas of interest.
Prereq: 6200, or Grad standing, or permission of instructor. Repeatable to a maximum of 30 cr hrs. Admis Cond course.

8500 Doctoral Colloquium
G 1
Regular student-driven discussions of ongoing dissertations, current topics in the professional field, and new research approaches to Germanic Studies.
Prereq: Successful completion of Ph.D. candidacy exams, or permission from Director of Graduate Studies and instructor. Repeatable to a maximum of 4 cr hrs. This course is graded S/U. Admis Cond course.

8501 Graduate Student Teaching Apprenticeship
G 1 - 3
Opportunity for advanced graduate students to plan and teach in conjunction with faculty member a course at 2000 or higher level.
Prereq: Grad standing, and a minimum of one year experience as GTA. Repeatable to a maximum of 6 cr hrs or 2 completions. This course is graded S/U.

8600 Seminar in Linguistics and Applied Linguistics
G 3
Explore the structure, historical development, use of German and its social and dialectal variations. Practical application of the knowledge gained to the teaching of German.
Prereq: 6600. Repeatable to a maximum of 30 cr hrs. Admis Cond course.

8999 Dissertation Research
G 1 - 3
Research for dissertation purposes.
Prereq: Permission of the dissertation advisor and Director of Graduate Studies. Repeatable. This course is graded S/U.

Graduate School

4501 Graduate Study and Academic Careers
U 1 - 4
Exploration of graduate study and academic careers.
Prereq: Not open to students with credit for 501. This course is graded S/U.
226 Greek

5013 Greek Historians U G 3
Comparative readings from Greek historians such as Herodotus, Thucydides, Xenophon and Plutarch.
Prereq: Two courses at 2000 level, or Grad standing, or permission of instructor. Not open to students with credit for 604.

5014 Greek Drama U G 3
Readings in Greek drama, from tragedies of Aeschylus, Sophocles and Euripides, and comedies of Aristophanes and Menander.
Prereq: Two courses at 2000 level, or Grad standing, or permission of instructor.

5016 Readings in Greek Philosophy U G 3
Readings from Greek philosophers, such as Plato or Aristotle, or arranged according a common topic, such as Presocratic philosophy or ethics.
Prereq: Two courses at 2000 level, or Grad standing, or permission of instructor. Not open to students with credit for 609.

5017 Later Greek Prose U G 3
Readings in late antique and Byzantine Greek prose authors.
Prereq: Two courses at 2000 level, or Grad standing, or permission of instructor.

5193 Individual Studies U G 1 - 9
A program of study arranged for each student, with specific passages for reading and topics from Greek literature, culture or religion for investigation.
Prereq: Two courses at 2000 level, or Grad standing, or permission of instructor. Repeatable to a maximum of 36 cr hrs or 12 completions. This course is graded S/U.

5194 Group Studies U G 1 - 9
A program of study arranged for a small group of students, with specific passages for reading from Greek literature, culture or religion for investigation.
Prereq: Permission of Instructor. Repeatable to a maximum of 36 cr hrs or 12 completions. This course is graded S/U.

6891 Greek Survey: Prose G 5
Survey of Greek prose literature from its beginning to late antiquity focusing on language competence and literary history. Offered Autumn Semester in alternation with Latin 6891.
Au Sem. Prereq. Two courses at 2000 level, or Grad standing, or permission of instructor. Not open to students with credit for 701.

6892 Greek Survey: Poetry G 5
Survey of Greek Poetry from Homer to late antiquity focusing on language competence and literary history. Offered Spring Semester in alternation with Latin 6892.
Sp Sem. Prereq. Two courses at 2000 level, or Grad standing, or permission of instructor. Not open to students with credit for 702.

7193 Individual Studies G 1 - 9
Assigned reading of Greek authors or topics of Greek culture to help with language requirements or to prepare for exams.
Au, Sp, Su Sem. Repeatable to a maximum of 36 cr hrs or 12 completions. This course is graded S/U.

7890 Graduate Seminar on Greek Literature and Culture G 1 - 3
Graduate research seminar on topics in the study of Greek literature, culture or religion.
Prereq: Grad standing. Repeatable to a maximum of 30 cr hrs or 15 completions.

7891 Graduate Seminar on Greek Linguistics G 1 - 3
Graduate research seminar on Greek linguistics.
Prereq: Grad standing. Repeatable to a maximum of 30 cr hrs or 15 completions.

8999 Dissertation Research G 1 - 9
Readings and discussions connected with the writing of a dissertation on a topic of Greek literature and culture.
Prereq: Permission of instructor. Repeatable to a maximum of 36 cr hrs or 12 completions. This course is graded S/U.

Health and Rehabilitation Sciences

1100.01 Health and Rehabilitation Sciences Survey U 1
Introduction to the University, the School of Health and Rehabilitation Sciences and its academic programs. Emphasis on strategies for success, resources and procedures.
Prereq: Must be enrolled in Pre-HthRhSc. This course is graded S/U.

1100.01H Health and Rehabilitation Sciences Honors Survey U 1
Introduction to the University, the School of Health and Rehabilitation Sciences and its academic programs. Emphasis on strategies for success, resources and procedures. Additional emphasis on requirements for Honors participation.
Prereq: Honors standing, and enrollment in Pre-HthRhSc. This course is graded S/U.

1100.02 Health and Rehabilitation Sciences Survey - Transfer Student U 1
This course is designed for new transfer students to take in their first semester at Ohio State. Introduce them to the policies and procedures, HRS majors, and to develop an academic plan to be eligible to apply to their intended HRS major.
Prereq: Enrollment in Pre-HthRhSc. This course is graded S/U.

2200 CPR for Healthcare Professionals U 1
Knowledge, competencies, issues and concerns of health care providers regarding basic life support. Completion of course leads to American Heart Association certification Basic Life Support/Health Care Provider card.

2300 Service Learning in Vulnerable Communities U 3
This service-learning course examines vulnerable populations from multiple perspectives including ethnicity, socioeconomic status, mental and physical disability, chronic disease, culture, and the impact on both individual and community health.
Prereq: Not open to students enrolled in the Bachelor of Science in Health Sciences.

2500 Medical Terminology for the Health Professions U 3
Terminology and abbreviations pertaining to anatomy, physiology, pathology, diagnostic processes/procedures and medical/surgical interventions by body system. This course is available for EM credit.

2530 The Evolving Art and Science of Medicine U 3
An analysis of the concepts of health and healing, coupled with an examination of historical developments that have impacted the art and science of the practice of medicine.
Prereq: Not open to students with credit for AllMed 307. GE cultures and ideas course.

3000 Introduction to the Health Sciences Major and Career Opportunities
An introduction to the Health Sciences major, tools for success, and careers in healthcare and health-related services.
Prereq: Enrollment in Health Sciences Program. This course is graded S/U.

3000.01 Introduction to the Health Sciences Major and Career Opportunities
An introduction to the Health Sciences major, tools for success, and careers in healthcare and health-related services.
Prereq: Enrollment in online Health Sciences program. This course is graded S/U.

3400 Health Promotion and Disease Prevention U 3
Introduction to the concepts and theories involved in health promotion and disease prevention.
Prereq: Acceptance into Health Sciences program, or permission of instructor.

3400.01 Health Promotion & Disease Prevention U 3
Introduction to the concepts and theories involved in health promotion and disease prevention.
Prereq: Enrollment in online Health Sciences program.

3500 Critical Phases in Life U 3
An examination of humans' development from conception to death and factors critical to continuing health.
Prereq: Biology 1101, and one class in Psych.

3500.01 Critical Phases in Life U 3
An examination of humans' development from conception to death and factors critical to continuing health.
Prereq: Enrollment in online Health Sciences program.

4000 Application of Ethical Decision Making in Health Care U 3
Examination of ethical theories, bioethical principles, personal ethics, and ethical decision making, using a six-step model for application in the allied health professions.

4000.01 Ethical Decision Making in Healthcare U 3
Examination of ethical theories, bioethical principles, personal ethics, and ethical decision making, using a six-step model for application in the allied health professions.
Prereq: Enrollment in online Health Sciences program.

4189 Health Sciences Internship U 1 - 3
Field experience in a health care system highlighting health management, health & wellness, or other health science.
This course is graded S/U.

4193 Undergraduate Independent Study U 1 - 3
Guided study of selected topics. Repeatable to a maximum of 15 cr hrs or 10 completions. This course is progress graded (SU).

4193H Undergraduate Independent Study U 1 - 3
Guided study of selected topics.
Prereq: Honors standing, and enrollment in HthRhSc; or permission of instructor. Repeatable to a maximum of 15 cr hrs or 15 completions. This course is progress graded (SU).

4300 Contemporary Topics in Health and Society U 3
Offers the opportunity to delve into the current issues and factors that are influencing and shaping both society and health systems and to engage in a process of scholarly exchange around the incubation of ideas to address these current issues.
Prereq: 3400, 4400, and Sr standing; or permission of instructor.
4300.01 Contemporary Issues in Health & Society U 3
       Offers the opportunity to delve into the current issues and factors that are influencing and
       shaping both society and health systems and to engage in a process of scholarly exchange
       around the incubation of ideas to address these current issues. Prereq: 3400, 4400, Sr standing, and enrollment in online Health Sciences program; or permission of instructor.

4320 Clinical Interviewing & Risk Assessment in Healthcare U 3
       Identification and prevalence of health risk behaviors and application of interviewing and
counseling techniques designed to affect behavior change incorporating wellness and prevention
strategies. Prereq: 3400, Psych 1100, and admission to School of Health and Rehabilitation Sciences.

4350 Introduction to Legal Concepts in Health Care U 2
       Overview of legal concepts affecting practice of healthcare professionals including legal
system, professional liability, and laws governing appropriate access and disclosure of patient
information. Prereq: 5370; or Jr or Sr standing in HRS; or permission of instructor.

4350.01 Introduction to Legal Concepts in Health Care U 2
       Overview of legal concepts affecting practice of healthcare professionals including legal
system, professional liability, and laws governing appropriate access and disclosure of patient
information. Prereq: 5370, or Jr or Sr standing in HRS, or permission of instructor; and enrollment in online Health Sciences program.

4370 Community and Policy Influence in Health Care U 3
       The course covers historical, societal, political, and economic forces influencing the
accessibility, cost, quality of personal and public health services. Students are exposed to
major U.S. health policy issues concerned with health improvement and protection, and the
related financing, organization, and delivery of healthcare. Prereq: 3400, or permission of instructor.

4370.01 Community and Policy Influence in Health Care U 3
       The course covers historical, societal, political, and economic forces influencing the
accessibility, cost, quality of personal and public health services. Students are exposed to
major U.S. health policy issues concerned with health improvement and protection, and the
related financing, organization, and delivery of healthcare. Prereq: 3400, or permission of instructor; and enrollment in online Health Sciences program.

4400 Individual Differences in Patient/Client Populations U 3
       Examination of individual differences in patient/client populations from multiple perspectives
of disability, chronic disease, healthcare disparity, culture, and the impact on health and wellness.
Prereq: 3400, and enrollment in Health Sciences program; or permission of instructor.

4400.01 Individual Differences in Patient/Client Populations U 3
       Examination of individual differences in patient/client populations from multiple perspectives
of disability, chronic disease, healthcare disparity, culture, and the impact on health and wellness.
Prereq: 3400, and enrollment in online Health Sciences program; or permission of instructor.

4450 Health Promotion in Practice U 3
       Integration of theory and emergent perspectives and applications in health promotion. Students
will demonstrate their understanding and application through development of a grant proposal.
Prereq: 3400 and 4900, or permission of instructor.

4450.01 Health Promotion in Practice U 3
       Integration of theory and emergent perspectives and applications in health promotion. Students
will demonstrate their understanding and application through development of a grant proposal.
Prereq: Enrollment in online Health Sciences program.

4470 Teamwork and Leadership in Health Sciences U 3
       Gain understanding of leadership and team-building through experience in planned health
related activities. Prereq: 4450 and 4960, or permission of instructor.

4530 Nutrition for Fitness U 3
       Introduction to the basic principles of nutrition as they relate to exercise performance of
athletes and the physically active. Prereq: 3 or 4 hrs in Biology or Chem, and EEOB 2520 or Physio 3200 or equiv.

4530.01 Nutrition for Fitness U 3
       Introduction to the basic principles of nutrition as they relate to exercise performance and body
composition of athletes and the physically active. Prereq: 3 or 4 hrs in Biology or Chem; and EEOB 2520 or Physio 3200 or equiv., or permission of instructor; and enrollment in online Health Sciences program.

4570 The Role of Integrative Medicine U 3
       A research-based analysis of the interaction between evidence-based medicine and
complementary and alternative approaches to wellness, as defined by the National Institutes of
Health. Prereq: Enrollment in online Health Sciences program.

4570.01 The Role of Integrative Medicine in Society U 3
       A research-based analysis of the interaction between evidence-based medicine and
complementary and alternative approaches to wellness, as defined by the National Institutes of
Health. Prereq: Enrollment in online Health Sciences program.
228 Health and Rehabilitation Sciences

5350 Case Studies in Health Sciences U G 3
Experience in evaluating and analyzing case studies in health care and health services emphasizing applied critical thinking, problem solving and decision-making approaches in leadership.
Prereq: 3400 and 4400, or permission of instructor; and enrollment in Health Sciences program.

5350.01 Case Studies in Health Sciences U G 3
Experience in evaluating and analyzing case studies in health care and health services emphasizing applied critical thinking, problem solving and decision-making approaches in leadership.
Prereq: 3400 and 4400, or permission of instructor; and enrollment in in online Health Sciences program.

5370 U.S. Healthcare Policy and Delivery System U G 3
An examination of healthcare delivery and current issues including history, policy, government regulations, legislation, politics, financing, accessibility, workforce and ethics.
Prereq: Soph or Jr standing, and admission to HRS, or enrollment in RespTh, RadiSci, or HIMS, or permission of instructor.

5370.01 US Healthcare Policy and Delivery U G 3
An examination of healthcare delivery and current issues including history, policy, government regulations, legislation, politics, financing, accessibility, workforce, and ethics.
Prereq: Enrollment in online Health Sciences program.

5400 Computer, Communication and Control Technologies U G 3
for Individuals with Disabilities
Students learn how to develop and implement assistive technology devices and services which focus on computer, communication and control technologies. The course includes information on communication technologies, control interfaces, electronic aids to daily living, Internet of things, zero-effort technologies, educational technologies, and emerging technologies.
Prereq: 5100.

5450 Assistive Technology for Sports and Recreation U G 3
Students learn how to develop and implement assistive technology devices and services in adapted sports and recreation. The course includes technology for Paralympic sports, summer sports, winter sports, video games, and recreation. The course will review principles of anthropometrics, biomechanics and ergonomics as it applies to adapted sports and recreation.
Prereq: 5100.

5500 Introduction to Pathophysiology U G 4
Fundamental concepts of pathophysiology including etiology, signs, symptoms, diagnosis, treatment, and complications of major body system disorders.
Prereq: EEOB 2520, Physio 3102, 3200, or permission of instructor.

5500.01 Introduction to Pathophysiology U G 4
Fundamental concepts of pathophysiology including etiology, signs, symptoms, diagnosis, treatment, and complications of major body system disorders.
Prereq: EEOB 2520, Physio 3102, 3200, or permission of instructor; and enrollment in online Health Sciences program.

5510 Pharmacological Aspects of Practice in Health and Rehabilitation Sciences U G 2
Fundamentals of pharmacokinetics, pharmacodynamics, drug law, selected medications and treatment methods utilized by allied health professionals. Prior completion of HthRSc 5500 is recommended.
Prereq: EEOB 2520 or Physio 3200, or Grad standing, or permission of instructor.

5510.01 Pharmacological Aspects of Practice in Health and Rehabilitation Sciences U G 2
Fundamentals of pharmacokinetics, pharmacodynamics, drug law, selected medications and treatment methods utilized by allied health professionals.
Prereq: EEOB 2520 or Physio 3200, or permission of instructor; and enrollment in online Health Sciences program, or Grad standing.

5550 Survey of Sports Medicine U G 3
Survey of sports medicine for non-professionals. Topics include the sports medicine team; risk management; and common athletic injuries, their causes, prevention, and immediate care.
Prereq: Not open to Athletic Training majors. Not open to students with credit for AthTrng 661, or to students in Athletic Training major.

5600 Global Aging U G 3
Study of health and well-being of older adults in developed and developing countries and immigrant communities in the United States.
Prereq: Sr or Grad standing, or permission of instructor.

5600.01 Global Aging U G 3
Study of health and well-being of older adults in developed and developing countries and immigrant communities in the United States.
Prereq: Sr or Grad standing, or permission of instructor; and enrollment in online Health Sciences program.

5680 Skeletal Biology U G 3
This course reviews basic bone biology, and demonstrates how understanding it is essential for our ability to exploit the unique structure of bone, and explore health, disease, and behavior of human populations through the study of skeletal remains. The content of this course is especially applicable to students interested in clinical skeletal biology, forensic science, and bioarchaeology.
Cross-listed in Anthrop.

5610 Death, Loss, and Grief in Multiple Perspectives U G 2
Exploration of death, loss and grief from multiple perspectives: patient, family, institutional, community and health care provider.
Prereq: Jr standing, or permission of instructor.

5620 Aging, Accessibility, and Design U G 3
Analysis and development of product and residential environment design for an aging population using environmental adjustment theories. Students apply Universal Design principles to home modifications.
Prereq: Sr standing, or permission of instructor.

5650 Aging and Public Policy Issues U G 3
Examines major public and social policy issues of aging society, citizen participation in policy process, and analysis of policy decisions for the aging population in the United States.

5680 Long Term Care Services Across the Continuum U G 4
Introduction to long term care continuum, types of services, regulatory requirements, financing, alternatives, and issues of access, housing, challenges to providing quality care.
Prereq: 5370 or 5650, or Grad standing in HRS, or permission of instructor.

5700 Multifaceted and Interdisciplinary Perspectives on Adolescent Mental Health U G 2
This course will develop advanced knowledge of the developmental experience of adolescents and their mental health. It will explore a variety of factors that influence mental health and will include interdisciplinary perspectives on approaches that promote positive mental health among typically developing adolescents and those with diagnosed disorders.
Prereq: Psych 1100 or equiv.

5860 Augmentative and Alternative Communication for the Multidisciplinary Professional U G 3
This course is designed to provide students with knowledge in augmentative communication/alternative & alternative communication (AAC) for children and adults. The course will explore the various types of AAC, the procurement process, funding of AAC, and intervention for people with complex communication needs secondary to a variety of diagnoses.
Cross-listed in SphRng.

5880.01 Interprofessional Education Seminar on Interprofessional Care U G 2
Develop and practice skills necessary for interprofessional collaboration in solving complex human problems. Case based. Limited to students enrolled in Health and Rehabilitation Sciences, Edu, Law, Med, Nursing, Social Work and Theology. Repeatable to a maximum of 4 cr hrs. Cross-listed in EduPAES 5880.01, MedColl 6880.01, and Nursing 5880.01.

5880.03 Interprofessional Education Seminar on Ethical Issues U G 2
Common to Helping Professions
Ethical issues common to the professions, e.g., advancing technology, death and dying, privacy and confidentiality, professional boundaries. Cased based.
Prereq: Enrollment in Health and Rehabilitation Science, Education, Nursing, or Medicine. Repeatable to a maximum of 4 cr hrs. Cross-listed in EduPAES 5880.03, Nursing 5880.03, and MedColl 6880.03.

5895 Food Insecurity, and Food Assistance Programming and Policy in the U.S. U G 3
Students will explore the complex set of factors that influence food insecurity in the U.S.; current approaches to addressing food insecurity in the U.S. at the local, state, and federal levels; the historical, social, political, and economic roots of current programming efforts; the strengths, limitations, and controversies related to such programming; and the potential for social welfare policy.
Cross-listed in PubAffs.

5900 Health Sciences Research: Interpretation and Applications U G 3
Overview of research in the Health Sciences. This course is intended to prepare students to be educated consumers of research and to enable them to find, understand, interpret, and apply research findings in their professional practice.

5900.01 Health Sciences Research: Interpretation and Applications U G 3
Overview of research in the Health Sciences. This course is intended to prepare students to be educated consumers of research and to enable them to find, understand, interpret, and apply research findings in their professional practice.
Prereq: Admission to online Health Sciences program.

5900E Health Sciences Research: Interpretation and Applications U G 3
Overview of research in the Health Sciences. This course is intended to prepare students to be educated consumers of research and to enable them to find, understand, interpret, and apply research findings in their professional practice.
Prereq: Honors standing.
Guided study of select topics.
Prereq: Permission of Instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

6295 Global Health Disability Seminar
G 2
This course will engage students in an in-depth exploration of contemporary issues regarding global health and disability. Students will define disability, understand the different models of disability, study the historical context of disability issues worldwide, and discover how disability issues align with current global health agendas to achieve equity in health for all people.
Prereq: Grad standing.

6795 Introduction to Graduate Studies
G 1
Introduce new graduate students to the HRS graduate school and program through various means.
Prereq: Admission into HRS Grad program.

7100 Introduction to Health & Rehabilitation Science I
G 3
Provide students with knowledge concerning rehabilitation concepts relative to integrated healthcare models, physiological concepts of injury and rehabilitation, and neuroscience for health and rehabilitation.
Prereq: Admission to Health and Rehabilitation Science Ph.D program, or permission of instructor.

7150 Introduction to Health & Rehabilitation Science II
G 3
Provide students with knowledge of motor control and motor learning, behavioral and cognitive models for health and rehabilitation, explore the interaction of physical, neuroscience, cognitive and behavioral concepts in health and rehabilitation.
Prereq: Admission to the Health and Rehabilitation Science Ph.D. program, or permission of instructor.

7193 PhD Individual Studies
G 1 - 3
Guided study of select topics.
Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 15 completions. This course is graded S/U.

7200 Teaching in the Health Sciences
G 2
Principles and practices of teaching in the allied health professions; focuses on the application of teaching theory and systematic course construction within the context of allied health teaching and training.
Prereq: Grad standing in Health and Rehabilitation Science. Not open to students with credit for AlliMed 735.

7250 Teaching and Curriculum in Health and Rehabilitation Sciences
G 3
Provide students with theoretical background and practical training for curriculum planning and teaching in health and rehabilitation sciences; exposure to teaching and curricular policies and procedures will occur.
Prereq: Grad standing in HRS, or permission of instructor.

7289 Practicum: Educational
G 1 - 4
Practical experience in an educational setting with the allied health fields.
Prereq: 2-4 cr hrs in Education, or permission of instructor. Not open to students with credit for AlliMed 889.01. This course is graded S/U.

7300 Management and Leadership in Health Sciences
G 3
Application of management and leadership principles for the development of administration of allied health departments in the health care system.
Prereq: Grad standing. Not open to students with credit for AlliMed 730.

7350 Issues and Policy in Health Sciences
G 3
Allied health professionals must increasingly face many complex issues that affect healthcare.
It is crucial that graduate students be able to critically examine a broad range of issues and understand various positions and their implications.
Prereq: Admission to Health and Rehabilitation Science Grad program.

7400 Injury Biomechanics: Topics in Mechanisms and Prevention
G 3
A seminar course exploring research and methods in injury biomechanics. Topics will focus on mechanisms and prevention of injury and may include human subject testing, sports injury studies along with crash safety evaluation.

7410 Advanced Structure and Function of the Human Body
G 5
This course investigates advanced concepts in human functional movement through the application of basic structures and anatomical relationships utilizing an evolutionary and biomechanical perspective as explanatory mechanisms.
Prereq: Any undergraduate Anatomy/Physio course including comparative anatomy or evolutionary anatomy, and permission of instructor.

7411 Injury Biomechanics-Foundations and Experience
G 4
This course introduces the foundations and experimental techniques of injury biomechanics that investigates human responses. Mechanisms of injury and the injury tolerances due to high energy impacts.
Health and Rehabilitation Sciences

8200 Research Dissemination in Health and Rehabilitation G 2
The course will prepare students to disseminate research findings, evaluate the dissemination of research, and provide opportunities for self-reflection, using their own research project. Students will prepare peer-reviewed manuscripts suitable for publication, a scientific poster, oral presentation, and lay and scientific abstracts.
Prereq: Grad level data analysis course, or permission of instructor. This course is graded S/U.

8250 Advanced Statistical Methods for Health and Rehabilitation Sciences G 2
This course will facilitate skill development in advanced statistical methods commonly used in health and rehabilitation science. Students will be exposed to analytic strategies appropriate for each type of outcome variable (i.e., dichotomous, categorical, ordinal, and continuous variables) as well as various research designs (i.e., repeated measures vs. cross-sectional data).
Prereq: Graduate-level data analytics course or permission of the instructor. Students are expected to have: 1) proficiency with at least one statistical program (e.g., STATA, SPSS, R, SAS, MatLab, etc.); 2) solid foundational understanding of simple and multiple linear regression.

8299 PhD Teaching Practicum G 1
Students gain practical, advanced skills in allied health teaching through structured mentoring experiences.
Prereq: Admission to Health and Rehabilitation Sciences PhD program, or permission of instructor. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

8600 Experimental Methods in Biomechanics G 3
The purpose of this Experimental Methods in Biomechanics course is to introduce you to the wide variety of equipment that is used to make biomechanical measurements in clinical and research settings. We will discuss the technology and theory that was used to develop each measurement technique, how it is typically used, and its advantages and limitations.

8888 Health and Rehabilitation Science Grand Rounds G 1
Advanced
Students develop skills in analyzing, discussing and synthesizing health and rehabilitation research. Students present their own research and critically appraise faculty research.
Prereq: Admission to Health and Rehabilitation Sciences PhD program, or permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

8891 Advanced Skeletal Biology: Clinical Perspectives G 3
This seminar is an investigation into the biological and hierarchical mechanisms underpinning skeletal system response to environmental factors, growth and development, adaptation, injury, healing processes, and rehabilitation.
Prereq: Permission of instructor.

8998 Doctoral Research Practicum G 1 - 3
Students gain practical, advanced skills in health and rehabilitation research through structured research experiences. This course is designed for the student to gain exposure to various research programs or to develop/apply research skills.
Prereq: Enrollment in a HRS Doctoral Program, or permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.

8999 PhD Research G 1 - 15
Research for Dissertation.
Repeatable to a maximum of 30 completions. This course is graded S/U.

Health and Wellness Innovation in Healthcare

1100 Health and Wellness Innovation in Healthcare Survey U 1
Introduction to the Health and Wellness Innovation in Healthcare degree with emphasis on strategies for success, resources, and procedures.
Prereq: Enrollment in Pre-HWIH. Not open to students with credit for 100. This course is graded S/U.

2110 Health Athlete U 1
An overview of four dimensions of personal energy (physical, emotional, mental and spiritual [purpose]) with guidance in developing self-care strategies for each.
Prereq: Enrollment in HWIH major, or permission of instructor. This course is graded S/U.

2193 Individual Studies U 1 - 4
Individual study of special topics in health and wellness innovation in healthcare. This course is graded S/U.

2200 Introduction to Health Literacy U 3
First of seven (five in minor) of the Health and Wellness Series; students will learn to define health literacy and identify and use the best practices of health literacy to improve health and wellness.
Prereq: Enrollment in HWIH major or minor, or permission of instructor.

2210 Dimensions of Wellness and Resilience U 3
Second in a series of seven in the Health and Wellness Innovation in Healthcare (HWIH) series; includes an overview of science of behavior change, dimensions of wellness, resilience concepts and professional role development.
Prereq: Enrollment in HWIH major or minor.

2220 Wellness in Chronic Conditions I U 5
This course introduces the impact of chronic conditions on the health of individuals and populations and includes exploration of innovative disease prevention programs. Includes integration of health coaching strategies and health literacy issues in chronic conditions and related, common medications.
Prereq: 2210, and enrollment in HWIH major or minor.

2780 Scholarship for Evidence Based Practice U 3
Introduction to information literacy, research methods and evidence based practice as they relate to health promotion.
Prereq: Enrollment in HWIH major.

3110 Life Enhancement and Personal Wellness U 3
This course is designed to solidify and sustain gains in personal health; explore core principles of health literacy, holistic health and prevention of chronic disease related to self and others.
Prereq: Enrollment in the HWIH major.

3220 Wellness in Chronic Conditions II U 4
Fifth in a series of seven of the Health and Wellness Series; Examines innovative models across the continuum of care designed to positively affect the health of individuals and populations.
Prereq: 2200, 2210, 2220, 2780, and 3230, and enrollment in HWIH major or minor.

3230 Coaching for Health Improvement U 3
Fourth in a series of seven of the Health and Wellness Innovation in Healthcare (HWIH) series; reviews relevant theories, typologies and coach-client relationships; principles defined by the International Coaching Federation used in health coaching to promote effective and sustainable behavior change.
Prereq: 2200, 2210, 2220, and 2780, and enrollment in HWIH major or minor.

3240 Health Program Planning and Evaluation U 3
The social, educational and behavioral foundations of health promotion programming and methods for evaluation will be covered. Skills to conduct needs assessment, program planning and implementation, and process, impact and outcome evaluations will be developed.
Prereq: 2200, 2210, 2220, and 2780, and enrollment in HWIH major.

3430 Integrating Culture in Healthcare U 3
Introduction to concepts and techniques for the provision of culturally sensitive care within the U.S. and across global contexts.
Prereq: 2200, 2210, 2220, and 2780, and enrollment in HWIH major.

3490 Technology-Based Health Promotion Strategies U 3
Explore theory underlying selection and use of education technology and pedagogy to engage individuals, families, organizations and communities in health promotion and wellness strategies.
Prereq: 2200, 2210, 2220, 2780, and 3230, and enrollment in HWIH major.

4193 Individual Studies U 1 - 4
Individual study of special topics in health and wellness innovation in healthcare. This course is graded S/U.

4300.01 HWIH Practicum I U 5
Sixth in a series of seven courses in the Health and Wellness Innovation in Healthcare series; synthesis and application of health and wellness content including health coaching, health literacy, holistic health/prevention and innovation threads in field experience projects in an organizational setting.
Prereq: 2200, 2210, 2220, 2780, 3230, 3240, 3340, 3490; BusHR 2500; HDFS 2400, PubHP 3510 or PubHlth 2010; HumNtr 2310; Nursing 2102; Social 1101; and 3306; Psych 1105; and enrollment in HWIH major.

4300.02 HWIH Practicum II U 5
Seventh in a series of seven courses in the Health and Wellness Innovation in Healthcare series; integration of program content and exemplifying the roles of knowledgeable health coach, innovator, and holistic health/prevention and health literacy professional in the culminating field experience.
Prereq: 4300.01, and enrollment in HWIH major.

Health Care Innovation

7193 Individual Studies G 1 - 4
Individual study of special topics in healthcare innovation.
Prereq: Enrollment in the Masters of Healthcare Innovation (NHI) program, or permission of instructor. Repeatable to a maximum of 20 cr hrs or 5 completions. This course is graded S/U.

7440 Innovation in High Performing Organizations G 3
Students learn advanced concepts of innovation in a high performing organization and the leadership behaviors that sustain innovation. Students discuss cross-disciplinary theories of innovation for improving health and quality of healthcare. Students are introduced to innovation competencies including positive deviance, complexity leadership, and disruptive innovation.
Prereq: Enrollment in the Masters of Healthcare Innovation (NHI) program, Healthcare Leadership & Innovation certificate program, or permission of instructor.

230
This course encourages students to discover themselves as leaders to maximize innovation and organizational impact. Students explore their own leadership behaviors to better manage their energy and find balance in order to perform at a peak level and positively impact the advancement of innovation in healthcare.

Prereq: Enrollment in the Masters of Healthcare Innovation (MHI) program, Healthcare Leadership & Innovation certificate program, or permission of instructor.

This course builds foundational knowledge of complex adaptive system characteristics in healthcare. It will explore complex adaptive system theory, systems thinking and network relationships as the context of leadership action and innovation. This course focuses on healthcare innovation from a systems perspective emphasizing the importance of networks, relationships, culture, and feedback.

Prereq: Enrollment in the Masters of Healthcare Innovation (MHI) program, Healthcare Leadership & Innovation certificate program, or permission of instructor.

This course develops leadership behaviors that facilitate constructive conversations, interactions, and outcomes through communication and coaching techniques. The course explores the role of relationships and communication in healthcare innovation, and challenges the traditionally negative view of conflict, by reframing it as a valuable and normative behavior in high performing organizations.

Prereq: Successful completion of 7440 and 7441, or permission of instructor.

This course introduces the multi-faceted elements of healthcare policy at the local, regional, and national level. And it discusses the role that healthcare policy plays in framing the context for healthcare innovation to occur. Learners will be introduced to the current state of the US healthcare system and the political, systematic, and environmental impact of healthcare policy on innovation.

Prereq: Enrollment in Masters of Healthcare Innovation program, or permission of instructor.

This course explores strategies for outcome measurement as a strategy for enhancing organizational performance and innovation and how to leverage technology to measure and integrate outcomes into the daily practice in healthcare. The course emphasizes technology’s role in the measurement of outcomes at the personal, the professional, the organizational and the system level.

Prereq: Enrollment in Masters of Healthcare Innovation program, or permission of instruction.

This course explores various elements of organizational operations in order to fully impact the organizations and systems in which they work. This course develops basic skill sets in financial and business operations in healthcare organizations. Students learn specific skills in budgeting, planning, financial analysis, program development and implementation, and resource identification and use.

Prereq: Successful completion of 7440 and 7441, or permission of instructor.

This course provides a framework and tools for innovation leaders to address challenges within healthcare systems. Principles of design thinking and design principles of functionality, value, and aesthetics are discussed and applied to analysis of complex healthcare problems. The steps involved in the design process will be applied to a Capstone Project.

Prereq: Enrollment in the Masters of Healthcare Innovation (MHI) program, or permission of instructor.

First of two Capstone courses in which students begin the implementation of the Capstone Project that was designed in HCINNOV 7522. Emphasis on the implementation plan and individual and team-based experiential learning.

Prereq: 7522, and enrollment in the Masters of Healthcare Innovation (MHI) program; or permission of instructor. Not open to students with credit for 7590, 7591, or 7592. This course is graded SU.

Second of two Capstone courses in which students complete the Capstone Project that was initiated in HCINNOV 7593 (Capstone I). Emphasis on implementation and evaluation of the Capstone Project and individual and team-based experiential learning.

Prereq: 7593, and enrollment in the Masters of Healthcare Innovation (MHI) program; or permission of instructor. Not open to students with credit for 7590, 7591, or 7592. This course is graded SU.

This course will focus on the use of evidence based practice, clinical decision making, and patient preferences as a core competency of innovation leaders.

Prereq: Enrollment in Masters of Healthcare Innovation (MHI) program, or permission of instructor.
232 Health Information Management And Systems

5620 Healthcare Reimbursement Systems U G 3
In depth analysis of U.S. healthcare payment systems and methodologies including public funded programs, managed care contracting, utilization review and impact on providers, payers, consumers, policy and information systems. Prereq: 3520 or AllMed 5370, or Grad standing in AMP, or permission of instructor. Not open to students with credit for 589, 620, or 660.

5635 Quality Management and Performance Improvement in Healthcare U G 3
Continuous quality management measures and tools including patient safety and satisfaction, regulatory requirements, benchmarking, causal analysis, outcomes, clinical guidelines and pathways, risk management and utilization review. Prereq: 3520 or 5540, or Grad standing, or permission of instructor.

5648 Microcomputer Applications in the Health Sciences U G 2
Overview of microcomputer applications in health sciences with practical applications related to discipline specific needs. Prereq: Enrollment in HRS, HIM, or permission of instructor.

5650 Healthcare Information Systems and Technology U G 3
In depth analysis of patient, administrative and financial information systems and management practices to support systems. Emphasis on government involvement in health information technology and information exchanges. Prereq: 5648 or equivalent, or Grad standing in HRS, or permission of instructor.

5654 Health Information Systems Analysis and Design U G 4
Applied systems planning and analysis techniques including database design and project management for health information systems evaluation, modeling and implementation. Prereq: 3520, 5648, and 5650; or Grad standing in HRS; or permission of instructor.

5655 Healthcare Database Administration U G 3
Database design and maintenance for health data applications including creation of data dictionaries and SQL, query language to meet the business needs of healthcare entities. Prereq: 5654, or permission of instructor. Not open to students with credit for 654 or 655.

5660 Healthcare Financial Management U G 2
Overview of major financial issues in healthcare delivery including assessment of financial environment, financial statements, ratio analysis, managed care, payment systems, and capital project analysis. Prereq: Grad standing in AMP, and enrollment in HIM, or permission of instructor.

5700 Project in Health Information Management and Systems U G 3
Students apply theoretical knowledge acquired from the certificate program to a project that closely resembles what would be done in a realistic work environment. During the project, students apply critical thinking skills to solve a real-world problem, from assessing the problem itself to applying suitable and appropriate methods to generate one or more solutions to the problem.

5890 Seminar in Health Information Management and Informatics U G 1 - 4
Selected topics in health information management and informatics. Prereq: Grad standing in AMP, and enrollment in HIM, or permission of instructor. Repeatable to a maximum of 12 cr hrs or 4 completions.

Hebrew

1101.01 Elementary Hebrew I U 4
Conversation, reading, writing, vocabulary building, phonetics, and grammar of Hebrew. Closed to native speakers of this language. Prereq: Not open to students with 3 or more years of high school Hebrew through regular course enrollment or EM credit. This course is available for EM credit. GE for lang course.

1102.01 Elementary Hebrew II U 4
Reading of passages from various periods of Hebrew literature; review of salient points of elementary grammar & introduction to elements of classical Hebrew. Not open to native speakers of this language through regular course enrollment or EM credit. Prereq: 1101, or permission of instructor. Not open to students with credit for 102. This course is available for EM credit. GE for lang course.

1103.01 Intermediate Hebrew I U 4
Reading of Modern Hebrew short stories, poems, and essays; special emphasis on oral practice and Hebrew idioms. Closed to native speakers of this language. Prereq: 1102, or permission of instructor. This course is available for EM credit. GE for lang course.

2105 Intermediate Hebrew II U 4
Development of communication skills in Modern Hebrew; special emphasis on using new grammatical skills in advanced forms of composition and conversation. Not open to native speakers of this language or students with EM credit. Prereq: 1103, or permission of instructor.

2193 Individual Studies U 1 - 10
Individual studies. Prereq: Permission of instructor or department. Repeatable to a maximum of 10 cr hrs or 5 completions. This course is graded S/U.

2194 Group Studies U 1 - 10
Group studies. Prereq: Permission of instructor or department. Repeatable to a maximum of 15 cr hrs or 5 completions.

2216 The Medieval Jewish Experience U 3
A survey of ten centuries of medieval Jewish culture from the rise of Islam to the death of Shabbetai Zvi, the false Messiah (1676). Prereq: Not open to students who have taken 216, MedRen 2516 (Medieval 216), or JewshSt 2516. GE cultures and ideas and diversity global studies course. Cross-listed in MedRen 2516 and JewshSt 2516.

2241 Culture of Contemporary Israel U 3
An introduction to the Culture of modern Israel: historical roots, socio-political institutions and developments, and literary and artistic creations reflecting the realities of contemporary Israeli society. Prereq: Not open to students with credit for Hebrew 2241H (241H), 241, JewshSt 2242, or 2242H. GE cultures and ideas and diversity global studies course. Cross-listed in JewshSt 2242.

2241H Culture of Contemporary Israel U 3
An introduction to the culture of modern Israel: historical roots, socio-political institutions and developments, and literary and artistic creations reflecting the realities of contemporary Israeli society. Prereq: Honors standing, or permission of instructor. Not open to students with credit for 2241 (241), 241H, JewishSt 2242H, or 2242H. GE cultures and ideas and diversity global studies course. Cross-listed in JewshSt 2242H.

2367.01 Scripture and Script: The Bible in Contemporary Arts, Media, and Literature U 3
The Bible is a foundational text for contemporary art, literature, and political discourse as well as a sacred text in some religious traditions. This course examines Biblical reflections in cultural production, with particular focus on the American experience. It also gives students opportunities to see their own cultural contexts anew, and to explore the Bible's possible relevance to our time. Prereq: English 1110 or equiv. GE writing and comm: level 2 and VPA course.

2700 The Hebrew Bible in Translation U 3
Reading and analysis of selected chapters from the Hebrew scriptures and post-biblical Hebrew writings representative of major historical, cultural, and literary trends. Prereq: English 1110. Not open to students with credit for 2700H, JewshSt 2700, or 2700H. GE lit and diversity global studies course. Cross-listed in JewshSt.

2700H The Hebrew Bible in Translation U 3
Reading and analysis of selected chapters from the Hebrew scriptures and post-biblical Hebrew writings representative of major historical, cultural, and literary trends. Prereq: Honors standing, and English 1110, or permission of instructor. Not open to students with credit for 2700, JewshSt 2700, or 2700H. GE lit and diversity global studies course. Cross-listed in JewshSt.

2702 Modern Hebrew Literature in Translation U 3
A survey of major themes and topics in Modern Hebrew literature from the middle of the 19th century to the present. Prereq: English 1110 (110). Not open to students with credit for 372, 2702H (372H), JewshSt 2702, or 2702H. GE lit and diversity global studies course. Cross-listed in JewshSt.

3210 Kabbalah and the Jewish Mystical Tradition U 3
The history of Jewish mysticism from antiquity to the present, with emphasis on its implications for the comparative study of religious experience. Prereq: English 1110. Not open to students with credit for 2210, 2210H, 3210H, CompSt 2210, 2210H, JewishSt 2210, 3210, 2210H, JewishSt 2210, 3210, 2210H, JewishSt 2210, 3210H, RelStds 2210, 3210, 2210H, or 3210H. GE cultures and ideas and diversity global studies course. Cross-listed in JewshSt and RelStds.

3210H Kabbalah and the Jewish Mystical Tradition U 3
The history of Jewish mysticism from antiquity to the present, with emphasis on its implications for the comparative study of religious experience. Prereq: Honors standing, and English 1110. Not open to students with credit for 2210, 3210, 2210H, CompSt 2210, 2210H, JewishSt 2210, 3210, 2210H, JewishSt 2210, 3210H, RelStds 2210, 3210, 2210H, or 3210H. GE cultures and ideas and diversity global studies course. Cross-listed in JewshSt and RelStds.

3245 Israeli Film & Society U 3
A survey of Israeli films from 1948 to the present day, tracing the development of film production in Israel as well as the relationship between film and society. Prereq: English 1110. Not open to students with credit for 2245 or JewishSt 2245 or 3245. GE VPA and diversity global studies course. Cross-listed in JewshSt.

3703 Prophecy in the Hebrew Bible U 3
An intensive investigation into the dynamics of Israelite prophecy and apocalyptic in the context of ancient Near Eastern culture. Prereq: English 1110. Not open to students with credit for 2703, JewshSt 2703, or 3703. GE lit and diversity global studies course. Cross-listed in JewshSt.
3704 Women in the Bible and Beyond
An examination of the social, legal, and religious position of women as they appear in the Hebrew Bible and the ways in which they have been represented and interpreted in later textual, visual, and audio sources.
Prereq: English 1110. Not open to students with credit for 2704, JewshSt 2704, or 3704. GE lit and diversity global studies course. Cross-listed in JewshSt.

3705 Israel and the Holocaust
The State of Israel was established soon after the Holocaust. This course examines the effects of the Nazi genocide on Israeli society, including political debates, public trials, films, museums, and literature, while also reflecting on larger themes of genocide, trauma, memory, and commemoration. Taught in English.
Prereq: English 1110 (110). Not open to students with credit for NELC 375. GE cultures and ideas and diversity global studies course.

3708 Wisdom Literature in the Bible
An examination of the various ideas, themes, attitudes, implications, and genres of biblical and post-biblical wisdom literature.
Prereq: English 1110. Not open to students with credit for 2708, JewshSt 2708, or 3708. GE lit and diversity global studies course. Cross-listed in JewshSt.

4101 Review of Grammar and Composition
Review of Hebrew grammar; composition on assigned topics and some practice in translation.
Prereq: 1103 (104). Not open to students with credit for 401.

4102 Hebrew and the Media
Practice improving Hebrew conversation, comprehension, and writing through an exploration of contemporary Israeli media such as newspapers, internet, television, radio film.
Prereq: 1103 (104), or permission of instructor. Not open to students with credit for 402.

4601 Modern Hebrew Short Story
Reading and discussion of masterpieces of modern Hebrew short stories in the 19th and 20th centuries.
Prereq: 1103, or permission of instructor. Not open to students with credit for JewshSt 4601.

4602 Modern Hebrew Poetry
Reading and discussion of masterpieces of modern Hebrew poetry in the 19th and 20th centuries.
Prereq: 1103, or permission of instructor. Not open to students with credit for JewshSt 4602.

4998 Undergraduate Research in Hebrew
Offers undergraduates with special aptitudes a greater opportunity to do more independent study and research than is possible in normal course work.
Prereq: Permission of instructor. Not open to students with credit for 783H. Repeatable to a maximum of 10 cr hrs or 5 completions. This course is graded S/U.

499H Honors Research in Hebrew
Offers undergraduate honors students a greater opportunity to do more independent study than is possible in normal coursework.
Prereq: Honors standing, or permission of instructor. Repeatable to a maximum of 10 cr hrs or 5 completions. This course is graded S/U.

4999 Undergraduate Thesis
Offers undergraduates with special aptitudes the opportunity to do independent study leading to a thesis.
Prereq: Sr standing, or permission of instructor. Repeatable to a maximum of 10 cr hrs or 5 completions. This course is graded S/U.

4999H Undergraduate Honors Thesis
Offers undergraduates with advanced aptitudes the opportunity to do independent study leading to an honors thesis.
Prereq: Honors standing, and a grade of A in at least half of the Hebrew courses taken and an average grade of B or above in all Hebrew courses, and Sr standing; or permission of instructor. Repeatable to a maximum of 10 cr hrs or 5 completions. This course is graded S/U.

5100 Introduction to Biblical Hebrew
Introduction of main elements of Biblical Hebrew grammar and syntax, for study of ancient and late antique Mediterranean religion and History, for students in Classics, History, NELC, etc. Requires no previous study of Hebrew language but assumes moderate experience with studying another non-native language.
Prereq: Third-semester level [1103] in any other modern or classical language, or permission of instructor.

5101 Biblical Hebrew Grammar
Introduction to the phonology, morphology, and syntax of the Biblical Hebrew idiom.
Prereq: 1103, or permission of instructor. Not open to students with credit for JewshSt 5101.

5105 History of the Hebrew Language
Genealogical and typological relations within the Semitic family; a survey of Biblical, Mishnaic, and Modern Hebrew.
Prereq: 1103, or permission or instructor. Not open to students with credit for JewshSt 5105.

5193 Individual Studies
Individual studies. Repeatable to a maximum of 20 cr hrs or 5 completions. This course is graded S/U.

5194 Group Studies
Repeatable to a maximum of 20 cr hrs or 5 completions.

5601 Introduction to Hebrew Literary and Cultural Texts
Literary and cultural Hebrew texts from the biblical to the modern period; students will develop the ability to read critically and to build analytical vocabulary. In Hebrew.
Prereq: 2105, or permission of instructor. Not open to students with credit for JewshSt 5601.

5602 The Bible as Literature: Selected Readings
Critical study of basic issues in the language and analysis of biblical texts. In Hebrew.
Prereq: 2105, or permission of instructor. Repeatable to a maximum of 12 cr hrs.

5603 Readings in Rabbinic Literature
Study of selected texts and issues in Rabbinic literature, and discussions of the methods by which they are studied. In Hebrew.
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

5691 Topics in Hebrew Literature and Culture
This course will explore topics in Hebrew literature and culture in depth, ranging from biblical times to contemporary society. Texts and/or films will be provided in Hebrew, so that students can continue to improve their Hebrew analysis and comprehension skills. Each semester will focus on a different topic, so this course may be repeated for credit towards the Hebrew-Jewish Studies major & minor.
Prereq: 1103, or permission of instructor. Repeatable to a maximum of 9 cr hrs.

5797 Study at a Foreign Institution
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Repeatable to a maximum of 30 cr hrs or 5 completions.

7602 Studies in Hebrew Prose
Advanced study of specific periods, authors, and/or topics or prose writing, involving extensive readings and discussions of appropriate primary and secondary materials.
Repeatable to a maximum of 9 cr hrs.

8891 Seminar in Hebrew Studies
Intensive investigation of a selected topic or problem in Hebrew linguistics, philology, literature, or literary culture.
Repeatable to a maximum of 12 cr hrs.

Hindi

1101 Elementary Hindi I
Study of Hindi language, with appropriate cultural background; development of listening, reading, speaking, and writing. Closed to native speakers of the language.
This course is available for EM credit. GE for lang course.

1102 Elementary Hindi II
Continued study of Hindi language, with appropriate cultural background; development of listening, reading, speaking, and writing.
Prereq: 1101. Not open to students with credit for 102. GE for lang course.

1103 Intermediate Hindi I
Continued study of Hindi language, with appropriate cultural background; development of listening, reading, speaking, and writing.
Prereq: 1102. This course is available for EM credit. GE for lang course.

2104 Intermediate Hindi II
Continued study of Hindi language, with appropriate cultural background; development of listening, reading, speaking, and writing.
Prereq: 1103.

2194 Group Studies
Course topics may vary on subjects not otherwise covered by NELC courses.
Prereq: Permission of instructor or department. Repeatable to a maximum of 15 cr hrs or 5 completions.

History

1101 Latin American History to 1825
Latin American political, social, economic, and cultural history from Pre-Columbian times to independence (1825) focusing on imperialism, religion, minorities, war, and rebellion.
Prereq or concur: English 1110.xx. Not open to students with credit for 1150 or 2001. GE historical study and diversity global studies course.

1102 Latin American History since 1825
Latin American political, social, economic, and cultural history from independence (1825) to the present focusing on neo-colonialism, instability, underdevelopment, militarism, and minorities.
Prereq or concur: English 1110.xx. GE historical study and diversity global studies course.

1151 American History to 1877
The political, constitutional, social, and economic development of the United States from the colonial period through the era of Reconstruction.
Prereq or concur: English 1110.xx. Not open to students with credit for 1150 or 2001. GE historical study course. This course is available for EM credit.
American History since 1877  U  3
The political, constitutional, social and economic development of the United States from the end of Reconstruction to the present.
Prereq or concour: ENGL 1110.xx. Not open to students with credit for 1150 or 2002. GE historical study course. This course is available for EM credit.

1194 Introductory Undergraduate Group Studies  U  3
The investigation of particular problems in various fields of history. Sometimes this course is offered in a distance-only format.
Prereq or concour: ENGL 1110.xx. Repeatable to a maximum of 18 or hrs.

1211 European History I  U  3
Ancient civilizations (Near East, Greece, Rome); barbarian invasions; medieval civilizations (Byzantium, Islam, Europe); Renaissance and Reformation.
Prereq or concour: ENGL 1110.xx. Not open to students with credit for 1210, 2201, 2201H, 2202, 2203, or 2205. This course is available for EM credit. GE historical study and diversity global studies course.

1212 European History II  U  3
Political, scientific, and industrial revolutions; nationalism; the two World Wars; the decline of empires; the Cold War.
Prereq or concour: ENGL 1110.xx. Not open to students with credit for 1210, 2203, 2204. This course is available for EM credit. GE historical study and diversity global studies course.

1681 World History to 1500  U  3
Comparative survey of the world's major civilizations and their interconnections from the beginnings of human civilization through 1500.
Prereq or concour: ENGL 1110.xx, or permission of instructor. Not open to students with credit for 161 or 2641. This course is available for EM credit. GE historical study and diversity global studies course.

1682 World History from 1500 to the Present  U  3
Survey of the human community, with an emphasis on its increasing global integration, from the first European voyages of exploration through the present.
Prereq or concour: ENGL 1110.xx, or permission of instructor. Not open to students with credit for 182 or 2642. This course is available for EM credit. GE historical study and diversity global studies course.

1911 Climate Change: Mechanisms, Impacts, and Mitigation  U  4
Examination of the basic science of climate change, of the ability to make accurate predictions of future climate, and of the implications for global sustainability by combining perspectives from the physical sciences, the biological sciences, and historical study. Team-taught with faculty members in EarthSc and EEOB.
Prereq: Not open to students with credit for EarthSc 1911 or EEOB 1911. GE historical study and nat sci bio and nat sci phys course. Cross-listed in EarthSc and EEOB.

2001 Launching America  U  3
An intermediate-level approach to American history in its wider Atlantic context from the late Middle Ages to the era of Civil War and Reconstruction. Sometimes this course is offered in a distance-only format.
Prereq or concour: ENGL 1110.xx, or permission of instructor. Not open to students with credit for 151 (151). GE historical study and diversity soc div in the US course.

2001H Launching America  U  3
Studies American society from earliest times to the abandonment of Reconstruction policies in 1877. Students will study the relation of structural changes in American society to the development of radical ideology, political institutions, and culture.
Prereq or concour: Honors standing, and ENGL 1110.xx, or permission of instructor. Not open to students with credit for 2001. GE historical study and diversity soc div in the US course.

2002 Making America Modern  U  3
A rigorous, intermediate-level history of modern U.S. in the world from the age of industrialization to the age of globalization. Sometimes this course is offered in a distance-only format.
Prereq or concour: ENGL 1110.xx, or permission of instructor. Not open to students with credit for 1152. GE historical study and diversity soc div in the US course.

2002H Making America Modern  U  3
Examines twentieth century American history in a global perspective, with special emphasis on the themes of industrial, military, and global expansion, as well as the expansion of civil and political rights of the American people.
Prereq or concour: Honors standing, and ENGL 1110.xx, or permission of instructor. Not open to students with credit for 2002. GE historical study and diversity soc div in the US course.

2010 History of American Capitalism  U  3
Study of the evolution of *American Capitalism* from pre-capitalist economies of the medieval period to the early 21st century.
Prereq or concour: ENGL 1110.xx. Not open to students with credit for 387. GE historical study course.

2015 History of American Criminal Justice  U  3
The history of crime, criminal law, law enforcement, prisons, and juvenile courts.
Prereq or concour: ENGL 1110.xx. Not open to students with credit for 375. GE historical study course.

2040 History of Agriculture and Rural America  U  3
This course is a broad survey of the economic, social, and political history of agriculture and the countryside from the pre-Columbian period to the present. The course focuses on labor, structures, political activism, public policy, and technology, and traces their interactions and changes over time.
Prereq or concour: ENGL 1110.xx, or permission of instructor. GE historical study course.

2055 Colonialism at the Movies: American History in Film  U  3
Explores historical treatment of Native/European contact, colonization, and key events and issues in American history in film. Sometimes this course is offered in a distance-only format.
Prereq or concour: ENGL 1110.xx, or permission of instructor. GE historical study and diversity soc div in the US course.

2061 History of Medicine in Film  U  3
Examines portrayals of physicians in American film over the past seventy-five years, giving particular attention to what popular films can say about the cultural images of physicians and medicine in American society.
Prereq or concour: ENGL 1110.xx, or permission of instructor. GE historical study course.

2070 Introduction to Native American History  U  3
History of Native Americans from pre-contact times to the present.
Prereq or concour: ENGL 1110.xx, or permission of instructor. Not open to students with credit for 368.01. GE historical study and diversity soc div in the US course.

2071 American Indian History of the U.S. Midwest  U  3
Native American history in Great Lakes and Ohio Valley regions from ancient times to the present, including moundbuilders, fur trade, removal, reservations, urbanization, contemporary issues. Sometimes this course is offered in a distance-only format.
Prereq or concour: ENGL 1110.xx, or permission of instructor. GE historical study and diversity soc div in the US course.

2075 Introduction to U.S. Latino/a History  U  3
Survey of Latinos/Latinas and their history in the United States from Spanish colonial period to present.
Prereq or concour: ENGL 1110.xx. Not open to students with credit for 324. GE historical study and diversity soc div in the US course.

2079 Asian American History  U  3
A survey of how Asian immigrants, their American-born children, and international relations with Asia have shaped U.S. History.
Prereq or concour: ENGL 1110.xx. Not open to students with credit for 346. GE cultures and ideas and historical study and diversity soc div in the US course.

2080 African American History to 1877  U  3
The study of the African American experience in America from arrival through the era of Reconstruction, focusing on slavery, resistance movements, and African American culture.
Prereq or concour: ENGL 1110.xx. Not open to students with credit for 323.01 or AFAM 323.01. GE historical study course. Cross-listed in AFAM 2080.

2081 African American History from 1877  U  3
The study of the African American experience in the United States from the era of Reconstruction through the present.
Prereq or concour: ENGL 1110.xx. Not open to students with credit for 338.02 or AFAM 338.02. GE historical study course. Cross-listed in AFAM 2081.

2100 Introduction to the Spanish Atlantic World  U  3
Introductory survey of the Spanish Empire in the Americas to 1825. Sometimes this course is offered in a distance-only format.
Prereq or concour: ENGL 1110.xx, or permission of instructor. GE historical study and diversity global studies course.

2105 Latin America and the World  U  3
Latin America's relationship with the World since independence (1825) focusing on cases of direct and indirect U.S. intervention as well as European influences and globalization.
Sometimes this course is offered in a distance-only format. 
Prereq or concour: ENGL 1110.xx, or permission of instructor. GE historical study and diversity global studies course.

2110 Introduction to Native American Peoples from Mesoamerica  U  3
Introductory survey of the Native American peoples from Mesoamerica (contemporary Guatemala, Honduras, Southern Mexico) from pre-colonial times to the present. Sometimes this course is offered in a distance-only format.
Prereq or concour: ENGL 1110.xx, or permission of instructor. GE historical study and diversity global studies course.

2111 Introduction to Native American People of the Andes  U  3
Introductory survey of the history of the Native American peoples of the Andes from the Pre-Columbian period to the present.
Prereq or concour: ENGL 1110.xx. Not open to students with credit for 368.02. GE historical study course.

2115 Women and Gender in Latin America  U  3
Women, gender relations, reproductive rights, and women's response to the impact of religion and the state in Latin America from the Conquest to the present.
Prereq or concour: ENGL 1110.xx. Not open to students with credit for 533.06. GE historical study course.
2352 The Ottoman Empire, 1300-1800  U  3
Studies the political, economic, social, and cultural power of the Ottoman Empire from its origins, through the highpoint of its geopolitical power in the 16th century, to its further evolution through the opening of the period of European imperialism, and will examine the Ottoman Empire as a case from which to study the developmental dynamics of patrimonial sociopolitical systems.
Prereq: English 1110.xx or permission of instructor. Not open to students with credit for 3366 or 540.03. GE historical study course.

2353 The Middle East Since 1914  U  3
An introductory study of the political, social and cultural history and evolution of Islamic civilization since 1914. The course will examine the impact of outside power on the Middle East, as well as the region's responses to modernity; political, socioeconomic and cultural change; ideological strategy; Islamic identity and globalization; and changes in media of communication.
Prereq: English 1110.xx or permission of instructor. Not open to students with credit for 3366 or 540.05. GE historical study course.

2375 Islamic Central Asia  U  3
Introductory survey of the political, cultural, religious, and economic history of Islamic central Asia from the eighth-century Arab conquests to the nineteenth-century Russian colonial era. 
Prereq or concur: English 1110.xx, or permission of instructor. Not open to students with credit for 343. GE historical study and diversity global studies course.

2392 colonial India  U  3
South Asia during the colonial period, from the arrival of Vasco da Gama in 1498 until independence and partition of India and Pakistan in 1947.
Prereq or concur: English 1110.xx. Not open to students with credit for 543.03. GE historical study course.

2393 contemporary India and South Asia  U  3
The political, social, economic, and cultural history of contemporary India and the South Asian subcontinent, focusing on India, Pakistan, and Bangladesh. 
Prereq or concur: English 1110.xx. Not open to students with credit for 543.04. GE historical study course.

2401 History of East Asia in the Pre-Modern Era  U  3
Introduction to societies and cultures of pre-modern China, Korea, and Japan; the East Asian geographical and cultural unit. 
Prereq or concur: English 1110.xx. GE historical study and diversity global studies course.

2402 History of East Asia in the Modern Era  U  3
Introduction to the transformation of societies and cultures of modern China, Korea, and Japan from the 17th century to the present. 
Prereq or concur: English 1110.xx. Not open to students with credit for 142. GE historical study and diversity global studies course.

2450 Ancient and Medieval Jewish History, 300 BCE-1100 CE  U  3
Introduction to the history of Jewish communities, religion, and culture in the Near East from the Greco-Roman period to the First Crusade. 
Prereq or concur: English 1110.xx, or permission of instructor. Not open to students with credit for 330.01 or JewishSt 2450. GE cultures and ideas and historical study and diversity global studies course. Cross-listed in JewishSt.

2451 Medieval and Early Modern Jewish History, 700-1700 CE  U  3
Introduction to the history of Jewish communities, religion, and culture in Europe during the Medieval and Early Modern periods. 
Prereq or concur: English 1110.xx, or permission of instructor. Not open to students with credit for 330.01, 330.02, or JewishSt 2451. GE historical study course. Cross-listed in JewishSt.

2452 Modern Jewish History 1700-Present  U  3
Study of the history of Jewish communities and Judaism from the early modern period to the early 21st century. 
Prereq or concur: English 1110.xx, or permission of instructor. Not open to students with credit for 330.02 or JewishSt 2452. GE historical study course. Cross-listed in JewishSt.

2453 History of Zionism and Modern Israel  U  3
The history of Zionism movement and the modern state of Israel from beginnings to present. 
Prereq or concur: English 1110.xx, or permission of instructor. Not open to students with credit for 334 or JewishSt 2453. GE historical study course. Cross-listed in JewishSt.

2454 History of Anti-Semitism  U  3
Study of the development of anti-Semitism, the history of anti-Semitic ideologies and practices, and different Jewish responses to anti-Semitism over time. 
Prereq or concur: English 1110.xx, or permission of instructor. Not open to students with credit for 334 or JewishSt 2454. GE historical study course. Cross-listed in JewishSt.

2455 Jews in American Film  U  3
A study of how modern Jews appear in film compared with historical reality. 
Prereq or concur: English 1110.xx, or permission of instructor. Not open to students with credit for 332 or JewishSt 2455. GE historical study course. Cross-listed in JewishSt.

2475 History of the Holocaust  U  3
Study of the state-sponsored murder of millions of Jews and non-Jews by the Nazis and their collaborators during World War II. 
Prereq or concur: English 1110.xx, or permission of instructor. Not open to students with credit for JewishSt 2475. GE historical study course. Cross-listed in JewishSt.

2500 20th Century International History  U  3
Examines international political, economic, and military relations from the origins of World War I through the break up of the Soviet Union. Sometimes this course is offered in a distance-only format.
Prereq or concur: English 1110.xx, or permission of instructor. GE historical study and diversity global studies course.

2550 History of War  U  3
A survey of the main concepts and issues involved in the study of war in world perspective, using case studies from prehistoric times to the present.
Prereq or concur: English 1110.xx, or permission of instructor. Not open to students with credit for 380. GE historical study and diversity global studies course.

2610 Introduction to Women and Gender in the U.S.  U  3
Survey of women and gender from pre-European settlement to present, with particular attention to differences among women.
Prereq or concur: English 1110.xx. Not open to students with credit for 325. GE historical study and diversity soc div in the US course.

2610H Introduction to Women and Gender in the U.S.  U  3
Survey of women and gender from pre-European settlement to present, with particular attention to differences among women.
Prereq: Honors standing, or permission of instructor. Prereq or concur: English 1110.xx. Not open to students with credit for 325 or 325H. GE historical study and diversity soc div in the US course.

2620 Women Changing the World: Histories of Activism and Struggle  U  3
History of women's activism in global perspective. Sometimes this course is offered in a distance-only format.
Prereq or concur: English 1110.xx, or permission of instructor. GE historical study and diversity global studies course.

2630 History of Modern Sexualities  U  3
In-depth analysis of particular topics in the history of modern sexualities throughout the world; topic varies by semester.
Prereq or concur: English 1110.xx. Not open to students with credit for 326. GE historical study course.

2641 Global History to 1500  U  3
Examines the major issues that have shaped the human experience from the beginnings of human civilization (ca. 3500 B.C.E.) to ca. 1500 C.E., through comparative study of civilizations within the context of religion, trade, technology, art, culture, and gender relations.
Prereq or concur: English 1110.xx, or permission of instructor. Not open to students with credit for 1681 (181). GE historical study and diversity global studies course.

2642 Global History 1500 to Present  U  3
Examines the major issues that have shaped the human experience of various regions since 1500 C.E. through comparative study of civilizations within the context of religion, trade, technology, art, culture, industrialism, imperialism, revolution, and gender relations.
Prereq or concur: English 1110.xx, or permission of instructor. Not open to students with credit for 1682 (182). GE historical study and global studies course.

2650 The World since 1914  U  3
Global perspective on major forces that shaped the world since 1914. Provides students with factual knowledge and a critical interpretive framework for responsible global citizenship.
Prereq or concur: English 1110.xx, or permission of instructor. GE historical study and diversity global studies course.

2651 World History before the Modern Age  U  3
A thematic approach to exploring selected major processes and events that shaped human experience between the Stone Age and 1750. Specific topics and content can vary.
Prereq or concur: English 1110, or equiv. Not open to students with credit for 1681. GE historical study and diversity global studies course.

2675 The Indian Ocean: Communities and Commodities in Motion  U  3
This course examines the history of the Indian Ocean world, a dynamic inter-regional arena that touches three continents. The course will explore historical processes as they cross traditional boundaries between geographic regions. With its focus on communities and commodities, this course will expose students to the continuities and change that have created the modern Indian Ocean world. 
Prereq or concur: English 1110.xx, or permission of instructor. GE historical study and diversity global studies course.

2680 It's the End of the World: Apocalypticism in Christianity, Judaism, and Islam  U  3
This course will explore how the end of the world-generally understood to be preceded by enormous wars and disasters as well as the judgment of people and a reckoning of their deeds-was imagined over two millennia by Christians, Jews, and Muslims. The course will cover primary and secondary historical works, as well as fictional bestsellers, about the apocalypse from around the world.
Prereq or concur: English 1110.xx, or permission of instructor. Not open to students with credit for NELC 2680. Cross-listed in NELC. GE historical study and diversity global studies course.
2700 Global Environmental History U 3
Global overview of the ecology of the human condition in past time, stressing climate change, earth systems, technology, energy, demography, and human-cultural-economic revolutions.
Prereq or concur: English 1110.xx. GE historical study and sociocultural, human, nat, and econ resources and diversity global studies course.

2701 History of Technology U 3
Survey of the history of technology in global context from ancient times.
Prereq or concur: English 1110.xx. Not open to students with credit for 362. GE historical study course.

2702 Food in World History U 3
Survey of the history of food, drink, diet and nutrition in a global context. Sometimes this course is offered in a distance-only format.
Prereq or concur: English 1110.xx, or permission of instructor. GE historical study and diversity global studies course.

2703 History of Public Health, Medicine and Disease U 3
Survey of the history of public health, disease and medicine in a global context. Sometimes this course is offered in a distance-only format.
Prereq or concur: English 1110.xx, or permission of instructor. GE historical study and diversity global studies course.

2704 Water: A Human History U 3
History of human use and understandings of water from ancient to modern times, with case studies taken from different geographic locations. Sometimes this course is offered in a distance-only format.
Prereq or concur: English 1110.xx, or permission of instructor. GE historical study and diversity global studies course.

2705 The History of Medicine in Western Society U 3
Explores the changing intellectual, economic, institutional and cultural relationships that have characterized medicine in the Western world from antiquity to the present, and examines individual roles and trends in the education of practitioners, locations of healing, and expectations that people had of medicine as ideas about the body and illness shifted.
Prereq or concur: English 1110.xx, or permission of instructor. GE historical study course.

2710 History of the Car U 3
The car has shaped the world we live in today. Ideas of capitalism, technology, and consumerism are inherently linked to its creation and expansion in modern society. This course will examine the development of the car in the 20th century, first in the United States and then how its global expansion has come to define global society today.
Prereq or concur: English 1110.xx, or permission of instructor. GE historical study course.

2720 Big History U 3
"Big History" attempts to explain history at the very largest scales in the widest perspectives, exploring theories of how the universe, planet, life, and humanity came to be. Students will work to understand the essential state of knowledge about cosmic, earth, evolutionary, and human history.
Prereq or concur: English 1110.xx, or permission of instructor. GE historical study course.

2750 Natives and Newcomers: Immigration and Migration in U.S. History U 3
General survey of (im)migration history in the U.S. from precolonial times to the present. Topics include cultural contact, economic relations, citizenship, politics, family and sexuality. Prereq or concur: English 1110.xx, or permission of instructor. Not open to students with credit for 2750H, 2750E, WGSS 2750, or 2750H. GE historical study and diversity soc div in the US course. Cross-listed in WGSS.

2750E Natives and Newcomers: Immigration and Migration in U.S. History U 3
General survey of (im)migration history in the U.S. from precolonial times to the present. Topics include cultural contact, economic relations, citizenship, politics, family and sexuality. Prereq: Honors standing, or permission of instructor. Prereq or concur: English 1110.xx. Not open to students with credit for 2750H, 2750E, WGSS 2750, or 2750H. GE historical study and diversity soc div in the US course.

2752 Social Reform Movements in U.S. History U 3
Explores organized movements for social change from 1830 to 1970s, including abolition, women's rights, temperance, utopias, Populists, Progressives, African-American, American Indian and Chicano rights. Sometimes this course offered at distance.
Prereq or concur: English 1110.xx, or permission of instructor. GE historical study and diversity soc div in the US course.

2797.01 Study at a Foreign Institution U 1 - 6
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Prereq or concur: English 1110.xx, or permission of instructor. Repeatable to a maximum of 27 cr hrs or 9 completions.

2797.02 The Western Tradition and Contemporary Issues: From Ancient Greece to the Global Present U 3
Participating students will have the opportunity to experience, and gain a greater appreciation for, the significance of the Western tradition through Ionian University faculty-led overviews of the various historical eras, beginning with ancient Greece and ending in the modern era, and group excursions to historical sites.
Prereq or concur: English 1110.xx, or permission of instructor. GE historical study course.

2798 Study Tour U 1 - 6
Specific content, location, semester(s) of offering, and prerequisites vary; contact department office for details.
Prereq or concur: English 1110.xx. Not open to students with credit for 698.01 or 698.02. Repeatable to a maximum of 27 cr hrs or 9 completions.

2800 Introduction to the Discipline of History U 3
Investigation of the methods and analytical approaches historians use to understand the past.
Prereq or concur: English 1110.xx.

2800E Introduction to the Discipline of History U 3
Investigation of the methods and analytical approaches historians use to understand the past.
Prereq: Honors standing, or permission of instructor. Prereq or concur: English 1110.xx. Not open to students with credit for 2800 (388) or 2800H (388H).

2800H Introduction to the Discipline of History U 3
Investigation of the methods and analytical approaches historians use to understand the past.
Prereq: Honors standing, or permission of instructor. Prereq or concur: English 1110.xx. Not open to students with credit for 388H.

3001 American Political History to 1877 U 3
The origins and development of American politics from early modern origins and national revolution to the era of Civil War and Reconstruction. Sometimes this course is offered in a distance-only format.
Prereq: English 1110.xx, or permission of instructor. GE historical study and diversity soc div in the US course.

3002 U.S. Political History Since 1877 U 3
History of American political institutions, ideas, and culture from Reconstruction to the present. Sometimes this course is offered in a distance-only format.
Prereq: English 1110.xx and any History 2000-level course, or permission of instructor. GE historical study and diversity soc div in the US course.

3003 American Presidential Elections U 3
History of presidential campaigns and elections from Washington to the present. Sometimes this course is offered in a distance-only format.
Prereq or concur: English 1110.xx, or permission of instructor. GE historical study and diversity soc div in the US course.

3005 The United States Constitution and American Society to 1877 U 3
Advanced study of U.S. constitutional history from the colonial charters through Reconstruction after the Civil War.
Prereq or concur: English 1110.xx, or permission of instructor. GE historical study course.

3006 The United States Constitution and American Society since 1877 U 3
Advanced study of U.S. constitutional history from Reconstruction to the present.
Prereq or concur: English 1110.xx, or permission of instructor. GE historical study course.

3010 Colonial North American to 1763 U 3
The history of colonial and native societies in North America from first contacts to the eve of the imperial crisis.
Prereq or concur: Any 2000-level History course, and English 1110.xx; or permission of instructor. Not open to students with credit for 556. GE historical study course.

3011 The American Revolution and the New Nation U 3
Analysis of the political, cultural, social, military, and economic changes that led to revolution and creation of the republic.
Prereq: English 1110.xx, or permission of instructor. Not open to students with credit for 577.01. GE historical study course.

3012 Antebellum America U 3
An examination of American history from the nation-building of the age of Jefferson and Jackson to the sectional crisis over slavery.
Prereq: English 1110.xx, or permission of instructor. Not open to students with credit for 557.02. GE historical study course.

3013 Civil War and Reconstruction U 3
The causes, character, and consequences of America's inter-sectional war and the post-war settlement.
Prereq: English 1110.xx, or permission of instructor. GE historical study course.

3014 Gilded Age to Progressive Era, 1877-1920 U 3
Advanced study of U.S. social, political, cultural, foreign policy history from 1877-1920: Industrialization; immigration; urbanization; populism; Spanish-American War; progressivism; WWI.
Prereq: English 1110.xx, or permission of instructor. Not open to students with credit for 564. GE historical study and diversity soc div in the US course.

3015 From the New Era to the New Frontier, 1921-1963 U 3
Advanced study of U.S. social, political, cultural, foreign policy history, 1921 to 1963, covering New Era, New Deal, WWII, Cold War, Eisenhower Republicanism, New Frontier.
Prereq: English 1110.xx, or permission of instructor. Not open to students with credit for 565. GE historical study course.
Advanced study U.S. political, economic, social, and cultural changes since 1963: political polarization, post-industrial economy/consumer economy; civil rights, feminism, environmentalism, Vietnam, détente, and globalization. Prereq: English 1110.xx, or permission of instructor. Not open to students with credit for GE historical study course.

**3017 The Sixties**

Examination of postwar America's pivot point, focusing on civil rights; liberal, radical, and conservative politics; sweeping social, cultural, and economic change; and the Vietnam War. Prereq: English 1110.xx, or permission of instructor. GE historical study course.

**3020 19th Century American Ideas**

Urbanism, evangelicalism, slavery, Darwinism, Modernism, Anti-modernism. Prereq or conc: Any 2000-level History course, and English 1110.xx; or permission of instructor. Not open to students with credit for 579.01. GE historical study course.

**3030 History of Ohio**

Survey of economic, social, political development of the geographic area that became Ohio from Native Americans to present. Prereq: English 1110.xx, or permission of instructor. GE historical study course.

**3032 History of the U.S. West**

The social, cultural, and economic development of the U.S. West. Not open to students with credit for 560. GE historical study course.

**3040 The American City**

History of the American city (urban-suburban) from colonial times to the early 21st century. Sometimes this course is offered in a distance-only format. Prereq: English 1110.xx, or permission of instructor. GE historical study and diversity soc div in the US course.

**3045 American Religious History**

An examination of religious history of the United States from colonial era to the present. Not open to students with credit for 578. GE historical study course.

**3070 Native American History from European Contact to Removal, 1560-1820**

Major issues and events in Native American history from before the European invasion and colonization through the early 1820s. Prereq: English 1110.xx, or permission of instructor. Not open to students with credit for 568.01. GE historical study course.

**3071 Native American History from Removal to the Present**

Covers major events in American Indian history from 1820s to present, including removal, reservations, cultural adaptation, federal policies, self-determination, activism, and contemporary issues. Prereq: English 1110.xx, or permission of instructor. Not open to students with credit for 568.02. GE historical study and diversity soc diversity in the US course.

**3075 Mexican American Chicana/o History**

History of people of Mexican descent and their presence in the United States from Spanish colonial times to contemporary period. Prereq: English 1110.xx and any History 2000-level course, or permission of instructor. Not open to students with credit for 577.01 or 577.02. GE historical study and diversity soc div in the US course.

**3080 Slavery in the United States**

The African American experience in slavery, focusing on the rise of the slave trade, slavery in the colonial and antebellum eras, the Civil War, and abolition. Prereq or conc: English 1110.xx; or permission of instructor. Not open to students with credit for 559 or AFAM 3080. GE historical study course. Cross-listed in AFAM 3080.

**3082 Black Americans During the Progressive Era**

History and experiences of black Americans during the period best known in American History as the Progressive Era. Sometimes this course is offered in a distance-only format. Prereq or conc: English 1110.xx, or permission of instructor. Not open to students with credit for AFAM 3082. GE historical study and diversity soc div in the US course. Cross-listed in AFAM 3082.

**3083 Civil Rights and Black Power Movements**

Examines the origins, evolution, and outcomes of the African American freedom struggle, focusing on the Civil Rights and Black Power movements. Sometimes this course is offered in a distance-only format. Prereq: English 1110.xx, or permission of instructor. Not open to students with credit for AFAM 3083. GE historical study and diversity soc div in the US course. Cross-listed in AFAM 3083.

**3085 African American History Through Contemporary Film**

Uses contemporary film to explore the history of African American life, culture, politics, and resistance. Prereq: English 1110.xx, or permission of instructor. GE historical study and diversity soc div in the US course.

**3086 Black Women in Slavery and Freedom**

Traces the experiences and struggles of African American women from slavery through the Civil Rights/Black Power era. Sometimes this course is offered in a distance-only format. Prereq: English 1110.xx and any History 2000-level course, or permission of instructor. Not open to students with credit for AFAM 3086. GE historical study and diversity soc div in the US course. Cross-listed in AFAM 3086.

**3089 Studies in African American History**

Selected topics in African American history from the origins of slavery to the present. Prereq or conc: Any 2000-level History course, and English 1110.xx; or permission of instructor. Not open to students with credit for 555.01, 555.02, or AFAM 3089. Repeatable to a maximum of 12 or hrs. GE historical study course. Cross-listed in AFAM 3089.

**3090 Comparative Slavery**

Different forms of slavery and other forms of unfree labor in different cultures, focusing mainly on Europe, the Americas, and Africa. Prereq: English 1110.xx and any History 2000-level course; or permission of instructor. Not open to students with credit for 555.01 and 555.02. GE historical study course.

**3100 Colonial Latin America**

Mayan, Aztec, and Incan Empires; the Spanish and Portuguese conquests and the transplanting of Iberian institutions; the Baroque period; the Bourbon Century and the Enlightenment. Prereq: English 1110.xx, or permission of instructor. Not open to students with credit for 533.01. GE historical study course.

**3105 History of Brazil**

History of Brazil during colonial and independence periods with major emphasis on the 19th and 20th centuries. Prereq: English 1110.xx, or permission of instructor. Not open to students with credit for 534.02. GE historical study course.

**3106 History of Mexico**

History of Mexico during precolonial, colonial, and independence periods with emphasis on the 19th and 20th centuries. Prereq: English 1110.xx, or permission of instructor. GE historical study and diversity global studies course.

**3191 Historical Internship**

Internships will provide students with the opportunity to work on historical projects under the supervision of a practicing professional and a professor. Prereq or conc: English 1110.xx, and a CPRH of 3.0 or above, and enrollment in the History major or minor; or permission of instructor. Repeatable to a maximum of 6 cr hrs or 3 completions.

**3193.01 Individual Studies**

Individual study in some field of historical development; designed to allow the student to work on a problem of particular interest. Prereq or conc: Any 2000-level History course, and permission of instructor. Repeatable to a maximum of 12 or hrs.

**3193.02 Individual Studies**

Individual study in some field of historical development; designed to allow the student to work on a problem of particular interest. Prereq: English 1110.xx, and any History 2000-level course, and permission of instructor. Repeatable to a maximum of 12 or hrs. This course is graded S/U.

**3194 Upper-Level Undergraduate Group Studies**

The investigation of particular problems in various fields of history. Prereq or conc: Any 2000-level History course, and English 1110.xx; or permission of instructor. Repeatable to a maximum of 12 or hrs.

**3210 Archaic Greece**

Survey of Greek history from Neolithic Age (7000-3000 BC) to the end of the Archaic Era (700-480 BC). Prereq: English 1110.xx, or permission of instructor. Not open to students with credit for 501.01. GE historical study course.

**3211 Classical Greece**

Survey of Greek history during the Classical era (480-320 BC). Prereq or conc: English 1110.xx, or permission of instructor. Not open to students with credit for 501.02. GE historical study course.

**3212 Slavery in the Ancient World**

Study of slavery as an institution and ideology of ancient Greece and Rome, including its importance in the ancient family, economy, and culture. Prereq or conc: English 1110.xx, or permission of instructor. Not open to students with credit for Class 3302 or History 3213H. GE for cultures and ideas and historical study course.

**3213H Slavery in the Ancient World**

Study of slavery as an institution and ideology of ancient Greece and Rome, including its importance in the ancient family, economy, and culture. Prereq or conc: Honors standing, and English 1110.xx; or permission of instructor. GE cultures and ideas and historical study course.
Women, Gender, and Sexuality in the History of Christianity
Explores the ways in which women were portrayed in early Christian literature, and the functions of gender (femininity and, to a lesser extent, masculinity) in Christian discourse. Students will consider the roles women played in the early Christian churches and the significance of gender and femininity in early Christian thought and practice.
Prereq or concur: English 1110.xx, or permission of instructor. GE historical study and diversity global studies course.

Sex and Gender in the Ancient World
Introductory survey of women, gender, and sexual relations in the ancient Mediterranean world, especially Greece and Rome. Sometimes this course is offered in a distance-only format.
Prereq or concur: English 1110.xx, or permission of instructor. Not open to students with credit for 2212 or 504.01. GE historical study and diversity global studies course.

Creating Medieval Monsters: Constructions of the Tudor and Stuart Britain, 1485-1714
A survey of military history from the late Bronze Age to the fall of the Roman Empire in the West.
Prereq: English 1110.xx, or permission of instructor. Not open to students with credit for 2212 or 504.01. GE historical study and diversity global studies course.

Paul & His Influence in Early Christianity
Survey of the life and thought of the apostle Paul in translation, and his influence on the formation of Christianity.
Prereq: English 1110.xx, or permission of instructor. Not open to students with credit for Clas 3407. GE for lit and historical study course.

History of Byzantium, 600
Study of the society, culture, and politics of Byzantium from the reign of Constantine to the fall of the Empire.
Prereq or concur: English 1110.xx, or permission of instructor. Not open to students with credit for 2212. GE historical study and diversity global studies course.

The Roman Empire, 69-337 CE
An advanced survey of Rome's history from the foundation of the city to the establishment of the Republic's Mediterranean Empire, ca 150 BC.
Prereq or concur: Any 2000-level History course, and English 1110.xx; or permission of instructor. Not open to students with credit for 503.01. GE historical study course.

History of Rome: Republic to Empire
History of Rome: Republic to Empire.
Prereq or concur: English 1110.xx, or permission of instructor. Not open to students with credit for 2212. GE historical study and diversity global studies course.

The Roman Empire, 69-337 CE
An advanced survey of Rome's imperial history from the end of the Julio-Claudian dynasty to the death of Constantine.
Prereq or concur: English 1110.xx, or permission of instructor. GE historical study course.

The Later Roman Empire
An advanced survey of Rome's history in the fourth, fifth, and sixth centuries with focus on themes of decline, fall, and transformation.
Prereq or concur: English 1110.xx, or permission of instructor. Not open to students with credit for 503.03. GE historical study course.

Early Byzantine Empire
History of Byzantium, 600-1453, with emphasis on internal developments, relations with neighbors, the Crusades, the Fall of the City, and the legacy of Byzantium.
Prereq: English 1110.xx, or permission of instructor. Not open to students with credit for 505.01. GE historical study course.

Later Byzantine Empire
History of Byzantium, 843-1453, with emphasis on internal developments, the Crusades, the Fall of the City, and legacy of Byzantium.
Prereq or concur: English 1110.xx, or permission of instructor. GE historical study course and diversity global studies course.

History of Early Christianity
A survey of the history of Christianity from its Jewish and Greco-Roman roots to the late sixth century.
Prereq or concur: English 1110.xx, or permission of instructor. Not open to students with credit for 506. GE historical study and diversity global studies course.

History of Medieval Christianity
Study of the development of Medieval Christianity from Constantine to the early sixteenth century.
Prereq or concur: English 1110.xx, or permission of instructor. Not open to students with credit for 507. GE historical study course.

Creating Medieval Monsters: Constructions of the Tudor and Stuart Britain, 1485-1714
This course examines the development of a persecuting society in medieval Europe and explores the various ways that minorities were demonized (literally turned into "monsters") in the medieval discourse and artwork in order to create a strong sense of unity within Christendom, with a specific focus on Jews, lepers, Muslims, religious non-conformists, sexual non-conformists, and women.
Prereq or concur: English 1110.xx, or permission of instructor. GE historical study and diversity global studies course.

Solving Crime in Medieval Europe
This course explores the interaction between the development of criminal law and social change in the late medieval period from a comparative perspective, examining primarily the English common law, but also the continental courts of law. Topics such as trial by ordeal; forensic medicine; homicide; sex crimes; clerical criminals; treason; sanctuary; and fear-mongering, will be explored.
Prereq or concur: English 1110.xx, or permission of instructor. GE historical study and diversity global studies course.

Medieval Europe I, 300-1100
Study of the development of Western European institutions from the fall of the Roman Empire to the eleventh century.
Prereq: English 1110.xx, or permission of instructor. Not open to students with credit for 508.01. GE historical study course.

Medieval England
Survey of English history from the Roman conquest to 1485.
Prereq or concur: English 1110.xx, or permission of instructor. Not open to students with credit for 508.03. GE historical study course.

History of the Italian Renaissance, 1250-1450
Study of the society, culture, and politics of Italy, from the communal era until the age of humanism, thirteenth to fifteenth century.
Prereq or concur: Any 2000-level History course, and English 1110.xx; or permission of instructor. Not open to students with credit for 509.01. GE historical study course.

The Holy Roman Empire (1495-1806)
The political, social, religious, and economic history of the Holy Roman Empire of the German Nation from 1495 to the fall of the Empire in 1806. Sometimes this course is offered in a distance-only format.
Prereq or concur: Any 2000-level History course, and English 1110.xx; or permission of instructor. GE historical study and diversity global studies course.

The Age of Reformations
The history of the Protestant, Catholic, and Radical Reformations of 16th and early 17th century Europe.
Prereq: English 1110.xx, or permission of instructor. Not open to students with credit for 511. GE historical study course.

Tudor and Stuart Britain, 1485-1714
The social, political, and religious history of England and the British Isles in the age of Renaissance, Reformation, and Revolution.
Prereq or concur: Any 2000-level History course, and English 1110.xx; or permission of instructor. Not open to students with credit for 514.01. GE historical study course.

Magic and Witchcraft in Early Modern Europe (1450-1750)
Investigation of the history of European witchcraft, focusing on intellectual, religious, and social developments and on the great witchcraft trials of the early modern period. Sometimes this course is offered in a distance-only format.
Prereq: English 1110.xx, or permission of instructor. GE historical study and diversity global studies course.

Early-Moderen Europe, 1560-1778
A survey of Europe from the late-sixteenth-century wars of religion to the more secular political conflicts on the eve of the French Revolution.
Prereq: English 1110.xx, or permission of instructor. Not open to students with credit for 512.01. GE historical study course.

 Revolutionary and Napoleonic Europe, 1750-1815
A survey of European but especially French history from the crisis of the Old Regime to the end of the wars of the French Revolution.
Prereq or concur: English 1110.xx, or permission of instructor. Not open to students with credit for 512.02. GE historical study course.

History of Europe in the 19th Century
Major trends and developments in 19th century European history.
Prereq: English 1110.xx, or permission of instructor. Not open to students with credit for 512.03. GE historical study course.

People on the Move: Migration in Modern Europe
Study of migration movements in Europe from the age of industrialization to the present.
Prereq: English 1110.xx and any History 2000 level course, or permission of instructor. GE historical study and diversity global studies course.
3355 The Early Islamic Conquests (CE 630-750) U 3
Utilizing new historical methods for reading and interpreting the sparse contemporary and near contemporary testimonies for this historical period, this course explores how these testimonies, both Muslim and non-Muslim, continue to challenge historians to revise the history of the Islamic conquests. In this course a strong focus is placed on reading primary source materials in translation.
Prereq: Not open to students with credit for 3355. GE historical study and diversity global studies course. Cross-listed in Islam.

3357 The Middle East in the 19th Century U 3
Lecture and discussion course examining the transformations wrought by westernizing reforms and European imperialism in the Middle East during the 19th century.
Prereq: English 1110.xx and any History 2000-level course, or permission of instructor. Not open to students with credit for 3350 or 540.04. GE historical study course.

3365 History of Afghanistan U 3
This course will address Afghan society, its historical foundations, and the challenges that confront it.
Prereq: English 1110.xx, or permission of instructor. Not open to students with credit for 355. GE historical study course.

3375 Mongol World Empire: Central Eurasia, 1000-1500 U 3
This course will address the social, cultural, and political history of medieval Central Eurasia, focusing on the Mongol Empire and its legacy.
Prereq or concur: English 1110.xx, or permission of instructor. Not open to students with credit for 544. GE historical study and diversity global studies course.

3376 The Silk Road: Cross-Cultural Exchanges in Eurasian History U 3
A study of the commercial and cultural relations among Chinese, Indian, Iranian, and Roman/Islamic civilizations.
Prereq: English 1110.xx, or permission of instructor. GE historical study and diversity global studies course.

3401 Foundations of Chinese Civilization U 3
Cross-era comparative development of thoughts, beliefs, culture, economy, and political system through the Tang (618-907) that shaped China's later history and role in East Asia.
Prereq or concur: English 1110 or equiv, and course work in History at the 2000 level, or permission of instructor. Not open to students with credit for 342. GE historical study course.

3403 History of Early Modern China: 14th-18th century U 3
Introduction to political, social, cultural, and economic developments from 14th to 18th century, mainly the Ming and early Qing dynasty.
Prereq or concur: English 1110.xx, or permission of instructor. GE historical study course.

3404 Modern China 1750-1949 U 3
History of Modern China, circa 1750 to 1949; emphasis on state and society (politics, military affairs, economics, social structure, and culture).
Prereq: English 1110.xx, or permission of instructor. Not open to students with credit for 545.03. GE historical study and diversity global studies course.

3405 Contemporary China 1921-2000 U 3
History of Contemporary China from 1921 to 2000; emphasis on Communist Party, state and society (politics, military affairs, economics, social structure, and culture).
Prereq or concur: English 1110.xx, or permission of instructor. Not open to students with credit for 545.04. GE historical study and diversity global studies course.

3410 Studies in Chinese History U 3
Topics and issues in any period of Chinese history contingent on interests of faculty and students; usually this course emphasizes readings and discussions.
Prereq or concur: English 1110.xx, or permission of instructor. Repeatable to a maximum of 9 cr hrs. GE historical study and diversity global studies course.

3411 Gender and Sexuality in China U 3
Introduction to gender and sexuality in China, including Confucian gender ideology, changes in marriage, family, sexual morality, and work from pre-modern to modern period. Sometimes this course is offered in a distance-only format.
Prereq: English 1110.xx and any History 2000-level course, or permission of instructor. GE historical study and diversity global studies course.

3425 History of Japan Before 1800 U 3
History of Japan to 19th century; emphasis on religion, politics, economic development, social structure and culture.
Prereq: English 1110.xx, or permission of instructor. Not open to students with credit for 548.01. GE historical study and diversity global studies course.

3426 History of Modern Japan U 3
Prereq or concur: English 1110.xx, or permission of instructor. GE historical study course.

3435 History of Early Modern Korea U 3
Examines the development of Korea from ancient times through the turn of the 20th century. Sometimes this course is taught in a distance-only format.
Prereq: English 1110.xx and any History 2000-level course, or permission of instructor. GE historical study and diversity global studies course.

3436 History of Modern Korea U 3
Modern Korean History, with focus on the legacy of colonialism, the Korean War, the impact of the Cold War, divided Korea, the growth of competing national ideologies and economic systems, and the recent military crises. Sometimes taught at distance.
Prereq: English 1110.xx and any History 2000-level course, or permission of instructor. GE historical study and diversity global studies course.

3450 History of Ancient Israel (to 300 BCE) U 3
Survey of the history and historiography of Israel from its origins to the advent of Hellenism.
Prereq: English 1110.xx, and any History 2000-level course, or permission of instructor. Not open to students with credit for 530.01 or JewshSt 3450. GE historical study course. Cross-listed in JewshSt.

3455 Jewish Life from the Renaissance to the Early Enlightenment U 3
Life and thought of European and Mediterranean Jews in the early modern period. Sometimes this course is offered in a distance-only format.
Prereq or concur: English 1110.xx, or permission of instructor. Not open to students with credit for JewshSt 3455. GE historical study course. Cross-listed in JewshSt.

3465 American Jewish History U 3
Study of topics in American Jewish history from the colonial era to the present.
Prereq or concur: English 1110.xx, or permission of instructor. Not open to students with credit for JewshSt 3465. GE historical study course. Cross-listed in JewshSt.

3470 Messiahs and Messianism in Jewish History U 3
The history of Jewish messianic ideas and of Jewish messianic leadership from ancient to modern times.
Prereq: English 1110.xx, and any History 2000-level course, or permission of instructor. Not open to students with credit for 531.01 or JewshSt 3470. GE historical study course. Cross-listed in JewshSt.

3475 History of the Arab-Israeli Conflict U 3
This course follows the history of the Arab-Israeli conflict from its inception in the late 19th century to the early 21st century. Course materials include secondary historical sources, a variety of primary documents, short stories, memoirs and films. These materials will provide students with an in-depth understanding of the history of the conflict from multiple perspectives.
Prereq: English 1110.xx, or permission of instructor. GE cultures and ideas and historical study course.

3500 U.S. Diplomacy from Independence to 1920 U 3
The formulation of U.S. foreign policy and foreign relations around the world from the independence of the republic to the aftermath of World War I.
Prereq or concur: English 1110.xx, or permission of instructor. GE historical study course.

3501 U.S. Diplomacy, 1920-Present U 3
The formulation of U.S. foreign policy and foreign relations around the world from the aftermath of World War I to the modern day.
Prereq or concur: English 1110.xx, or permission of instructor. Not open to students with credit for 583.02. GE historical study course.

3505 U.S. Diplomacy in the Middle East U 3
Survey of U.S. foreign policy in the Middle East emphasizing the Cold War, Arab-Israeli conflict, Iran, and wars against Iraq. Sometimes this course is offered in a distance-only format.
Prereq or concur: English 1110.xx, or permission of instructor. Not open to students with credit for JewshSt 3505. GE historical study and diversity global studies course. Cross-listed in JewshSt.

3506 Diplomacy, Congress, and the Imperial Presidency U 3
This class will explore how the relationship between the branches of government in the United States has evolved over the last 100 years, and how thinking historically can shape contemporary discussions of policy. We’ll consider the separation of powers, and how historical precedents have elaborated, challenged, and codified the vague outline defined in the Constitution.
Prereq or concur: English 1110.xx, or permission of instructor. GE historical study course.

3525 19th Century European International History U 3
History of the international relations and diplomacy of Europe from the French Revolution to the First World War.
Prereq or concur: English 1110.xx, or permission of instructor. GE historical study course.

3540 Modern Intelligence History U 3
This course examines the role of diplomatic and military intelligence in the making of policy in modern history.
Prereq or concur: English 1110.xx, or permission of instructor. GE historical study course.

3545 War in World History, 500-1650 U 3
Study of the causes, conduct, and consequences of warfare around the world, 500-1650. Sometimes this course is offered in a distance-only format.
Prereq: English 1110.xx and any History 2000-level course, or permission of instructor. GE historical study and diversity global studies course.

3551 War in World History, 1651-1899 U 3
Study of the causes, conduct, and consequences of warfare around the world, 1650-1900. Sometimes this course is offered in a distance-only format.
Prereq or concur: English 1110.xx, or permission of instructor. GE historical study course.
242 History

3552 War in World History, 1900 - Present U 3
Study of the causes, conduct, and consequences of warfare around the world, 1900-present. Prereq: English 1110.xx or permission of instructor. Not open to students with credit for 580.02. GE historical study course.

3560 American Military History, 1607-1902 U 3
American military history, 1607-1902; emphasis on the formation of national security policy, war-waging, and the reciprocal impact of society and military institutions. Prereq or concur: English 1110.xx or permission of instructor. Not open to students with credit for 582.01. GE historical study course.

3561 American Military History, 1902 to the Present U 3
American military history, 1902 to the present; emphasis on the formation of national security policy, war-waging, and the reciprocal impact of society and military institutions. Prereq: English 1110.xx or permission of instructor. Not open to students with credit for 582.02. GE historical study course.

3570 World War II U 3
Study of the causes, conduct, and consequences of World War II. Prereq: English 1110.xx or permission of instructor. GE historical study course.

3575 The Korean War U 3
This course will show how the often overlooked Korean War proved to be a critical moment in modern world history. Rooted in themes in Asian and American history from before the 20th century, this course traces the Korean War conflict within a longer framework of East Asian struggles against Western influence and within a broader international context. Prereq or concur: English 1110.xx or permission of instructor. GE historical study course.

3580 The Vietnam War U 3
Study of the background, causes, conduct, and consequences of the Vietnam War, 1945-1975. Prereq or concur: English 1110.xx or permission of instructor. GE historical study and diversity global studies course.

3590 Wars of Empire U 3
This course examines the means, methods, challenges and results of military encounters between modern imperial powers and indigenous forces they met on the battlefield. Prereq or concur: English 1110.xx or equivalent, or permission of instructor. GE historical study course.

3600 Studies in Women's and Gender History U 3
In-depth analysis of selected topics in American, European, and/or Third World women's history; topic varies by semester. Prereq: English 1110.xx, or permission of instructor. Repeatable to a maximum of 12 or hrs. GE historical study course.

3612 Asian American Women: Race, Sex, & Representations U 3
Examines the experiences and cultural representations of Asian American women for insight into race, gender, sexuality, and citizenship in U.S. society. Sometimes this course is offered in a distance-only format. Prereq: English 1110.xx and any History 2000-level course, or permission of instructor. GE historical study and diversity soc div in the US course. Cross-listed in WGSST 4401.

3620 Lesbian, Gay, Bisexual, and Transgender History in the United States, 1940-Present U 3
An overview of LGBT culture and history in the U.S. from 1940 to the present. Students will examine changes in LGBT lives and experiences during the last half of the 20th century and the beginning of the 21st century, as well as the intersections of race, sexuality, and class, and how these categories have affected sexual minority communities and broader US law and culture. Prereq: English 1110.xx, or permission of instructor. GE historical study and diversity soc div in the US course.

3640 Medieval Women: Power, Piety, and Production U 3
Investigation of the lives and experiences of medieval European women, with special focus on political power, religious life, work, and family life. Prereq or concur: English 1110 or equiv, and course work in History at the 2000 level, or permission of instructor. Not open to students with credit for 523. GE historical study course.

3641 Women and Gender in Early Modern Europe: 1450-1750 U 3
Investigation of the lives and experiences of early modern European women, with special focus on family life, gender, work, education, religious life, and political power. Prereq or concur: English 1110 or equiv, and course work in History at the 2000 level, or permission of instructor. Not open to students with credit for 523. GE historical study course.

3642 Women in Modern Europe, from the 18th century to the Present U 3
Study of women's lives and activism emphasizing the ways in which economic position, religion, sexuality, marital status, regional and national differences influenced their experiences. Prereq: English 1110.xx, or permission of instructor. Not open to students with credit for 524. GE historical study course.

3650 Families in Historical Perspective U 3
Comparative and transnational analysis of family history. Focus on questions of gender, sexuality, culture, religion, and economy as they intersect with families and households. Prereq or concur: English 1110.xx, or permission of instructor. Not open to students with credit for 527. GE historical study course.

3670 Trans-National History of World War II in Europe U 3
One of three Spring prerequisite courses to the World War II Study Program's May term in Europe. Only students accepted into the program during the October registration period may enroll. This class will deepen the contextual knowledge of students about the different national histories and the specific sites they will encounter in May. Prereq: English 1110.xx and any History 2000-level course, or permission of instructor. Students must be accepted into the WWII Study Abroad program for the upcoming "May" term. GE historical study course.

3675 How to Stage a Revolution U 3
Compares revolutionary movements in order to help explain why some fail and some succeed. Sometimes this course is offered in a distance-only format. Prereq: English 1110.xx, or permission of instructor. GE historical study and diversity global studies course.

3680 Religion and Law in Comparative Perspective U 3
Comparative, interdisciplinary approach to studying religion and law. Drawing on concrete cases, historical studies, and theoretical literature, the course explores how the relationship between religion and law has been configured differently in different liberal democracies, such as the U.S., France, and Israel, and what this might mean for contemporary debates. Team-taught w/ faculty in RelStudies. Prereq: Not open to students with credit for RelStudies 3680. GE historical study and diversity global studies course. Cross-listed in RelStudies.

3700 American Environmental History U 3
The history of American ecosystems from the last Ice Age to the present; focuses on historical debates over the causes and consequences of environmental change. Prereq or concur: English 1110.xx, or permission of instructor. GE historical study course.

3701 History of American Medicine U 3
Survey of the history of American medicine from the Colonial period through the twentieth century. Prereq: English 1110.xx, or permission of instructor. Not open to students with credit for 562. GE historical study course.

3702 Digital History U 3
This course is a survey of the ways digital technology is impacting history: from the collection and preservation of primary sources, to the analysis of those documents with the aid of algorithms, to the representation of the past through digital means. Students will read and reflect upon important works in digital history, as well as engage in the process of creating digital history. Prereq: English 1110.xx, or permission of instructor. GE historical studies course.

3704 HIV: From Microbiology to Macrohistory U 3
This course is an interdisciplinary exploration of HIV/AIDS, tracing the evolution of the virus at both the molecular level and within its global historical context. This course is team-taught with a virologist and a historian. Prereq or concur: English 1110.xx, or permission of instructor. Not open to students with credit for Microbio 3704. Cross-listed in Microbio.

3705 History of Capitalism in Comparative and Global Perspective U 3
An historical comparison of the development of modern forms of capitalism globally. Prereq or concur: Any 2000-level History course, and English 1110.xx; or permission of instructor. Not open to students with credit for 587.01. GE historical study course.

This course offers an introduction to the fields of environmental history and business history, beginning with the industrial revolution of the early nineteenth century and ending in the twenty-first century. It chronicles the rise of some of America's biggest multinational corporations and examines these with firms, working with governments and other institutions, shaped global change. Prereq: English 1110.xx, or permission of instructor. GE historical study and diversity soc div in the US course.

3708 Vaccines: A Global History U 3
This course examines the history and biology of vaccines. We explore the discovery and development of vaccines, along with the political and cultural controversies that have surrounded them for centuries. Team-taught course with faculty member in Pharmacy. Prereq: Not open to students with credit for PHR 3708. GE historical study course. Cross-listed in PHR.

3711 Science and Society in Europe, from Copernicus to Newton U 3
A survey of the History of science and its place and relationship to European society in the early modern period. Students will understand the various strands that constitute the scientific revolution in early modern Europe, modern intellectual history, how revolutions in thought occur, and will practice analytical and communications skills in working with both secondary and primary sources. Prereq: English 1110.xx, or permission of instructor. GE historical-study course.
Science and Society in Europe, from Newton to Hawking
The history of science from the eighteenth through to the late twentieth century. Students will study major developments in the physical, geological, biological and chemical sciences, and the relation of the history of science to social, economic, political and cultural developments in European history.
Prereq or concur: English 1110.xx, or permission of instructor. GE historical study course.

Explorations of Science, Technology and the Environment in East Asia
Case studies in the Development of Science, Technology and Environmental Change in the East Asian context, pre-modern to modern times.
Prereq: English 1110.xx and any History 2000-level course, or permission of instructor. Not open to students with credit for 587.02. GE historical study and diversity global studies course.

History of the Arctic
This course will introduce students to the history, geography, culture, ethnic diversity, inter-communal relations, economy, and strategic importance of the planet’s Arctic regions, from arrival of humans to the region to the present.
Prereq or concur: English 1110.xx, or permission of instructor. GE historical study and diversity global studies course.

Study at a Foreign Institution
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Prereq: English 1110 or equiv, and course work in History at the 2000 level, or permission of instructor. Repeatable to a maximum of 27 cr hrs or 9 completions.

Study Tour
Specific content, location, semester(s) of offering, and prerequisites vary; contact department office for details.
Prereq: English 1110.xx and any History 2000-level course, or permission of instructor. Repeatable to a maximum of 12 cr hrs or 4 completions.

The U.S., Europe, and the Second World War: Intersections in 20th Century History
Study Tour in Europe exploring the history of World War II, the United States, and Europe.
Prereq: English 1110.xx, History 3015, 3570, 4795, and French 3801; or permission of instructor. GE historical study and diversity global studies and education abroad course.

Shanghai, 1750 to 2050: History, Culture, and Language
The Shanghai Study Tour will present students with general empirical information and interpretations about the history of Shanghai and China. Students will study the history, culture, and language of Shanghai “up close and personal” by taking classes at East China Normal University, visiting major historical sites in Shanghai, and by living in China.
Prereq: English 1110.xx and any History 2000-level course, or permission of instructor. GE historical study and diversity global studies and education abroad course.

Global Hotspots of the Early Modern World: Buenos Aires
Through the study of 18th century Buenos Aires, this course will inform students about the emergence of cities that connected Old and New Worlds and that served as places of innovation in commerce, political structures, and ideas. Students will benefit from international travel experience and exposure, and will acquire new depth of knowledge about the history of global interconnectedness.
Prereq: English 1110.xx and any History 2000-level course, or permission of instructor. GE historical study and diversity global studies and education abroad course.

HIV in Context: East Africa
This course is an interdisciplinary exploration of the real world impact of- and response to HIV/AIDS.
Prereq: English 1110.xx, or permission of instructor. Not open to students with credit for Microbio 3798.05. GE historical study and education abroad course. Cross-listed in Microbio.

Between France and Morocco: Inclusivity and Diversity in the Francophone World
This is a Study Abroad course offered in the 4-Week May Session that traces the evolution of plural (cultural, religious, political, and national) identities in France and North Africa, focusing on shared histories and tensions between the two countries. GE historical study and diversity global studies course.

Seminar in Early American History
Advanced research and readings on selected topics in Early American History.
Prereq or concur: English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

Seminar in Early American History
Advanced research and readings on selected topics in Early American History.
Prereq or concur: Honors standing, English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

Honors Seminar in Early American History
Advanced research and readings on selected topics in Early American History.
Prereq or concur: Honors standing, English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

Seminar in Modern U.S. History
Advanced research and writing on selected topics in Modern U.S. History.
Prereq or concur: English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

Embedded Honors Seminar in Modern U.S. History
Advanced research and readings on selected topics in Modern U.S. History.
Prereq or concur: Honors standing, English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

Honors Seminar in Modern U.S. History
Advanced research and readings on selected topics in Modern U.S. History.
Prereq or concur: Honors standing, English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

Honors Seminar in Modern U.S. History
Advanced research and readings on selected topics in African American History.
Prereq or concur: English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

Honors Seminar in African American History
Advanced research and readings on selected topics in African American History.
Prereq or concur: Honors standing, English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

Study Tour
This course is an interdisciplinary exploration of the real world impact of- and response to HIV/AIDS.
Prereq: English 1110.xx, or permission of instructor. Not open to students with credit for Microbio 3798.05. GE historical study and education abroad course. Cross-listed in Microbio.
History

4217E Embedded Honors Seminar in Late Antiquity U 3
Advanced research and readings on selected topics in Late Antiquity.
Prereq or concur: Honors standing, English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

4217H Honors Seminar in Late Antiquity U 3
Advanced research and readings on selected topics in Late Antiquity.
Prereq or concur: Honors standing, English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

4218E Embedded Honors Seminar in Byzantine History U 3
Advanced research and readings on selected topics in Byzantine History.
Prereq or concur: Honors standing, English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

4218H Honors Seminar in Byzantine History U 3
Advanced research and readings on selected topics in Byzantine History.
Prereq or concur: Honors standing, English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

4235H Honors Seminar in Medieval History U 3
Advanced research and readings on selected topics in Medieval History.
Prereq or concur: Honors standing, English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

4245 Seminar in Early Modern European History U 3
Advanced research and readings on selected topics in Early Modern European History.
Prereq or concur: English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

4245E Embedded Honors Seminar in Early Modern European History U 3
Advanced research and readings on selected topics in Early Modern European History.
Prereq or concur: Honors standing, English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

4245H Honors Seminar in Early Modern European History U 3
Advanced research and readings on selected topics in Early Modern European History.
Prereq or concur: Honors standing, English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

425 Seminar in Modern European History U 3
Advanced research and readings on selected topics in Modern European History.
Prereq or concur: Honors standing, English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

425E Embedded Honors Seminar in Modern European History U 3
Advanced research and readings on selected topics in Modern European History.
Prereq or concur: Honors standing, English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

425H Honors Seminar in Modern European History U 3
Advanced research and readings on selected topics in Modern European History.
Prereq or concur: Honors standing, English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

428 Seminar in Russian, East European and Eurasian History U 3
Advanced research and readings on selected topics in Russian, East European and Eurasian History.
Prereq or concur: English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

428E Embedded Honors Seminar in Russian, East European and Eurasian History U 3
Advanced research and readings on selected topics in Russian, East European and Eurasian History.
Prereq or concur: Honors standing, English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

428H Honors Seminar in Russian, East European and Eurasian History U 3
Advanced research and readings on selected topics in Russian, East European and Eurasian History.
Prereq or concur: Honors standing, English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

432 Seminar in African History U 3
Advanced research and readings on selected topics in African History.
Prereq or concur: English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

432E Embedded Honors Seminar in African History U 3
Advanced research and readings on selected topics in African History.
Prereq or concur: Honors standing, English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

432H Honors Seminar in African History U 3
Advanced research and readings on selected topics in African History.
Prereq or concur: Honors standing, English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

4575E Embedded Honors Seminar in Islamic History U 3
Advanced research and writing on selected topics in Islamic History.
Prereq or concur: English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

4575H Honors Seminar in Islamic History U 3
Advanced research and readings on selected topics in Islamic History.
Prereq or concur: Honors standing, English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

4410 Seminar in Chinese History U 3
Advanced research and readings on selected topics in Chinese History.
Prereq or concur: English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

4410E Embedded Honors Seminar in Chinese History U 3
Advanced research and readings on selected topics in Chinese History.
Prereq or concur: Honors standing, English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

4410H Honors Seminar in Chinese History U 3
Advanced research and readings on selected topics in Chinese History.
Prereq or concur: Honors standing, English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

4430 Seminar in Japanese History U 3
Advanced research and readings on selected topics in Japanese History.
Prereq or concur: English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

4430E Embedded Honors Seminar in Japanese History U 3
Advanced research and readings on selected topics in Japanese History.
Prereq or concur: Honors standing, English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

4430H Honors Seminar in Japanese History U 3
Advanced research and readings on selected topics in Japanese History.
Prereq or concur: Honors standing, English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

4475 Seminar in Jewish History U 3
Advanced research and readings on selected topics in Jewish History.
Prereq or concur: English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

4475E Embedded Honors Seminar in Jewish History U 3
Advanced research and readings on selected topics in Jewish History.
Prereq or concur: Honors standing, English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

4475H Honors Seminar in Jewish History U 3
Advanced research and readings on selected topics in Jewish History.
Prereq or concur: Honors standing, English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

452 Seminar in International History U 3
Advanced research and readings on selected topics in International History.
Prereq or concur: English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

452E Embedded Honors Seminar in International History U 3
Advanced research and readings on selected topics in International History.
Prereq or concur: Honors standing, English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

452H Honors Seminar in International History U 3
Advanced research and readings on selected topics in International History.
Prereq or concur: Honors standing, English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

457 Seminar in Military History U 3
Advanced research and readings on selected topics in Military History.
Prereq or concur: English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

457E Embedded Seminar in Military History U 3
Advanced research and readings on selected topics in Military History.
Prereq or concur: Honors standing, English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

457H Honors Seminar in Military History U 3
Advanced research and readings on selected topics in Military History.
Prereq or concur: Honors standing, English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.
4625 Seminar in Women’s/Gender History   U   3
Advanced research and readings on selected topics in Women’s/Gender History.
Prereq or concur: English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

4625E Embedded Honors Seminar in Women’s/Gender History   U   3
Advanced research and readings on selected topics in Women’s/Gender History.
Prereq or concur: Honors standing, English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

4625H Honors Seminar in Women’s/Gender History   U   3
Advanced research and readings on selected topics in Women’s/Gender History.
Prereq or concur: Honors standing, English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

4675 Seminar in World/Global/Transnational History   U   3
Advanced research and readings on selected topics in World/Global/Transnational History.
Prereq or concur: English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

4675E Embedded Honors Seminar in World/Global/Transnational History   U   3
Advanced research and readings on selected topics in World/Global/Transnational History.
Prereq or concur: Honors standing, English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

4675H Honors Seminar in World/Global/Transnational History   U   3
Advanced research and readings on selected topics in World/Global/Transnational History.
Prereq or concur: Honors standing, English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

4705 Seminar in the History of Environment, Technology, and Science   U   3
Advanced research and readings on selected topics in Environmental History, Technology and Science.
Prereq or concur: English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

4705E Embedded Honors Seminar in the History of Environment, Technology, and Science   U   3
Advanced research and readings on selected topics in Environmental History, Technology and Science.
Prereq or concur: Honors standing, English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

4705H Honors Seminar in the History of Environment, Technology, and Science   U   3
Advanced research and readings on selected topics in Environmental History, Technology and Science.
Prereq or concur: Honors standing, English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

4730 Seminar in the History and Theory of the State   U   3
Advanced research and readings on selected topics in the History and Theory of the State.
Prereq or concur: English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

4730E Embedded Honors Seminar in the History and Theory of the State   U   3
Advanced research and readings on selected topics in the History and Theory of the State.
Prereq or concur: Honors standing, English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

4730H Honors Seminar in the History and Theory of the State   U   3
Advanced research and readings on selected topics in the History and Theory of the State.
Prereq or concur: Honors standing, English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

4795 Seminar in History   U   3
Advanced research and readings on selected topics in History.
Prereq or concur: English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

4795E Embedded Honors Seminar in History   U   3
Advanced research and readings on selected topics in History.
Prereq or concur: Honors standing, English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

4795H Honors Seminar in History   U   3
Advanced research and readings on selected topics in History.
Prereq or concur: Honors standing, English 1110.xx, a grade of C or above in History 2800, and any 3000-level History course; or permission of instructor.

4797 Study at a Foreign Institution   U   1 - 6
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Prereq or concur: Any 3000-level History course, and English 1110.xx; or permission of instructor. Repeatable to a maximum of 12 or hrs or 4 completions.
### History

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>6193.01</td>
<td>Independent Study in History</td>
<td>G 1-6</td>
<td>Repeatable to a maximum of 15 cr hrs or 5 completions.</td>
</tr>
<tr>
<td>6193.02</td>
<td>Independent Study in History</td>
<td>G 1-6</td>
<td>Repeatable to a maximum of 15 cr hrs or 5 completions.</td>
</tr>
<tr>
<td>6194</td>
<td>Graduate Studies Groups</td>
<td>G 1-6</td>
<td>The investigation of particular problems in various fields of history through graduate-level individual studies. Prereq: Grad standing. Not open to students with credit for 791. Repeatable to a maximum of 15 cr hrs or 5 completions.</td>
</tr>
<tr>
<td>6999</td>
<td>Master’s Thesis Research</td>
<td>G 1-12</td>
<td>Research for Master's thesis. Prereq: Grad standing. Repeatable to a maximum of 12 cr hrs or 3 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>7000</td>
<td>Studies in Early American History to 1877</td>
<td>G 1-6</td>
<td>Graduate readings in selected topics in Early American history to 1877. Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions.</td>
</tr>
<tr>
<td>7001</td>
<td>Graduate Readings in Colonial America</td>
<td>G 1-6</td>
<td>Readings in the historical literatures of Colonial America in its Atlantic World context to 1763. Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions.</td>
</tr>
<tr>
<td>7002</td>
<td>Graduate Readings in the American Revolution and Early Republic</td>
<td>G 1-6</td>
<td>Readings in the historical literatures of the American Revolution and early nation-building through approximately 1800. Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions.</td>
</tr>
<tr>
<td>7003</td>
<td>Graduate Readings in the Early Republic &amp; Antebellum America</td>
<td>G 1-6</td>
<td>Reading in the historical literatures of the Early and Antebellum Republics from approximately 1800 through the 1850s. Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions.</td>
</tr>
<tr>
<td>7014</td>
<td>Studies in American Urban History</td>
<td>G 1-6</td>
<td>Graduate Reading Seminar in American Urban History. Chronology and Themes will vary. Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions.</td>
</tr>
<tr>
<td>7086</td>
<td>The Civil Rights and Black Power Movements</td>
<td>G 1-6</td>
<td>This course examines the origins, evolution, and outcomes of the African American freedom struggle, focusing on the Civil Rights and Black Power movements. Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions. Cross-listed in AAS 7085.</td>
</tr>
<tr>
<td>7087</td>
<td>Black Women in the United States</td>
<td>G 1-6</td>
<td>A study of historical and relational scholarship on the history and experience of black women in the United States. Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions. Cross-listed in AfrAmSt.</td>
</tr>
<tr>
<td>7100</td>
<td>Studies in Latin American History</td>
<td>G 1-6</td>
<td>An intensive study of problems in selected periods of Latin American history. Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions.</td>
</tr>
<tr>
<td>7193.01</td>
<td>Independent Study in History</td>
<td>G 1-6</td>
<td>The investigation of particular problems in various fields of history through graduate-level individual studies. Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions.</td>
</tr>
<tr>
<td>7193.02</td>
<td>Independent Study in History</td>
<td>G 1-6</td>
<td>The investigation of particular problems in various fields of history through graduate-level individual studies. Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>7210</td>
<td>Graduate Reading Seminar in Ancient History</td>
<td>G 3</td>
<td>Graduate seminar, with focus on methodological approaches to ancient history and/or a particular problem or theme in Greek, Roman, late antique, or Byzantine history. Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>7230</td>
<td>Studies in Medieval History</td>
<td>G 1-6</td>
<td>Advanced reading course in sources and monographs on the principal issues and problems in medieval history, with a stress on bibliography. Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions.</td>
</tr>
<tr>
<td>7240</td>
<td>Studies in Early Modern European History</td>
<td>G 3</td>
<td>Selected topics in western European history of the 17th and 18th centuries. Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>7255</td>
<td>Studies in 20th Century European History</td>
<td>G 1-6</td>
<td>This intensive reading course is designed to give graduate students an introduction to historiographical questions in 20th-century European history. Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions.</td>
</tr>
<tr>
<td>7265</td>
<td>Studies in French History</td>
<td>G 1-6</td>
<td>Selected topics in French political, social, cultural, and intellectual history and historiography. Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions.</td>
</tr>
<tr>
<td>7275</td>
<td>Studies in Eastern European History</td>
<td>G 1-6</td>
<td>Selected topics in Eastern European political, social, cultural, and intellectual history and historiography, theoretical and comparative emphasis. Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions.</td>
</tr>
<tr>
<td>7280</td>
<td>Studies in Russian, Soviet, and Eurasian History</td>
<td>G 3</td>
<td>Graduate readings seminar on Russian, East European, and Eurasian history. Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>7301</td>
<td>African Historiography and Methodology</td>
<td>G 3</td>
<td>The study of sources, research methods, interpretations, and research trends in the field of African history. Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs. Cross-listed in AfrAmSt.</td>
</tr>
<tr>
<td>7302</td>
<td>Comparative History of the African Diaspora and Enslavement and Emancipation</td>
<td>G 1-6</td>
<td>Examination of the dispersal of Africans, mainly through the slave trade across the Sahara, the Indian Ocean, the Mediterranean, and the Atlantic Ocean. Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions. Cross-listed in AfrAmSt. 7302.</td>
</tr>
<tr>
<td>7303</td>
<td>Comparative History of the African Diaspora and Post-Emancipation, Colonial, &amp; Post-Colonial Reality</td>
<td>G 3</td>
<td>Examination of social, political, and cultural developments and realities in the Black world, from the period of the emancipation to the beginning of the 21st century. Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs and 5 completions.</td>
</tr>
<tr>
<td>7350</td>
<td>Studies in Islamic History</td>
<td>G 3</td>
<td>Graduate reading seminar on a topic in Islamic history, stressing topical coverage and/or historiography. May be repeated for credit when the topic changes. Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>7401</td>
<td>East Asia and the Modern/Contemporary World</td>
<td>G 1-6</td>
<td>East Asia in modern and contemporary contexts: comparisons of / interactions between China, Japan, and Korea; also with Europe, Southeast and Central Asia and the US. Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions.</td>
</tr>
<tr>
<td>7405</td>
<td>Introduction to Graduate-level East Asian Studies</td>
<td>G 1</td>
<td>The origins, development and current state of East Asian Area Studies in the U.S., including East Asian Studies relationship with other intellectual disciplines. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 797, EALL 7897 (797), or HistArt 6801 (797). This course is graded S/U. Cross-listed in EALL 7897 and HistArt 6801.</td>
</tr>
<tr>
<td>7410</td>
<td>Studies in Pre-Modern Chinese History</td>
<td>G 1-6</td>
<td>Intensive study, through reading and discussion, of major issues and recent scholarship in pre-modern Chinese history. Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions.</td>
</tr>
<tr>
<td>7411</td>
<td>Studies in Modern and/or Contemporary Chinese History</td>
<td>G 1-6</td>
<td>Intensive study, through reading and discussion, of major issues and recent scholarship in modern and/or contemporary Chinese history. Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions.</td>
</tr>
<tr>
<td>7425</td>
<td>Studies in Japanese History</td>
<td>G 3</td>
<td>An intensive study, through reading and discussion, of major issues and recent scholarship in Japanese history. Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs.</td>
</tr>
</tbody>
</table>
7500 Studies in International History G 3
Colloquium in International History.
Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs.

7550 Studies in Military History G 3
Studies in military history; emphasis on military institutions and activities in war and peace, along with works of historiographical interest to the military history field.
Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs.

7575 Theories of War and Strategy G 1 - 6
This course focuses on an analysis and comparison of the most influential writers on the theory and practice of warfare including Thucydides, Machiavelli, Clausewitz, Jomini, Mahan, and Liddell Hart, but it also questions the utility of the 'greater thinkers' model in military history while applying theory to current events.
Prereq: Grad standing. Repeatable to a maximum of 12 cr hrs or 2 completions.

7600 Studies in the History of Women and Gender G 1 - 6
Readings course for graduate students focusing on the history of women and gender. The course content will be international, emphasizing cross-cultural comparisons.
Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions.

7650 Studies in World History G 1 - 6
Analysis of seminal works and concepts in the development of global-scaled integrative approaches to world history.
Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions.

7700 Graduate Readings in Environmental History G 1 - 6
Graduate level readings course in the historiography and key themes in environmental history.
Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions.

7705 Graduate Readings in the History of Technology G 1 - 6
Graduate level readings in the history of technology.
Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions.

7711 Graduate Readings in the History of Medicine and Health G 3
A graduate readings course that introduces students to the history of medicine and health as a historical field and will explore how work in the history of medicine and health intersects with scholarly insights in other fields.
Prereq: Grad standing.

7725 Graduate Readings in Power, Culture and State G 1 - 6
Graduate readings in comparative topics in power, culture, and the state.
Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions.

7750 Comparative Historiographies and Theories in Race, Ethnicity, and Nation G 3
Graduate reading course that examines the historical scholarship and theories in race, ethnicity, and nation in comparative geographical and chronological contexts.
Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs.

7755 The History of the Idea of Race in Europe G 1 - 6
Examines the use and abuse of ideas of race in Western Europe from the Enlightenment to the present.
Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions.

7777 Study at a Foreign Institution G 1 - 6
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Prereq: Grad standing, and permission of department. Repeatable to a maximum of 15 cr hrs or 5 completions.

7800 Introduction to Public History G 1 - 6
Survey of the field of Public History.
Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions.

7801 Independent Study in Public History G 1 - 6
Permits individual students, or small groups of students, to pursue independent work in public history with a faculty sponsor.
Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions.

7900 Colloquium in the Philosophy of History, Historiography, and the Historian's Skills I G 3
Colloquium on the principles of historical thought, historiography, and methods of historical research.
Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs.

7901 Colloquium in the Philosophy of History, Historiography, and the Historian's Skills II G 3
Colloquium on the principles of historical thought, historiography, and methods of historical research. Particular attention is paid to historical methods.
Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs.

7902 Graduate Colloquium on Historical Writing G 1 - 6
Designed to develop skills in historical writing.
Prereq: Grad standing.

7905 Pedagogy & Professional Development G 1 - 6
Basic ideas and techniques for effective teaching of college history; emphasis on classroom application. Also, professional development, esp. locating funding sources for their study, research, conferences & other professional activities.
Prereq: Grad standing. Not open to students with credit for 795.01. This course is graded S/U.

7910 Prospectus Writing & Professional Development G 3
Seminar dedicated to researching and writing Dissertation Prospectus. Also review of professional development skills: grant writing, building a resume and planning a career, how to write and present a conference paper, book reviews.
Prereq: Grad standing. Not open to students with credit for 795.02. This course is graded S/U.

8000 Seminar in Early American History to 1877 G 3
Graduate Research Seminar in Early American History to 1877. Topics will vary.
Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs.

8010 Seminar in Modern U.S. History G 3
Graduate Research Seminar in Modern U.S. History. Topics will vary.
Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs.

8100 Seminar in Latin American History G 3
Graduate Research Seminar in Latin American History. Topics will vary.
Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs.

8193.01 Independent Study in History G 1 - 6
The investigation of particular problems in various fields of history through graduate doctoral-level individual studies.
Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions.

8230 Seminar in Medieval History G 3
Graduate Research Seminar in Medieval History. Topics will vary.
Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs.

8250 Seminar in Modern European History G 3
Graduate Research Seminar in Modern European History. Topics will vary.
Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs.

8280 Seminar in Russian, East European and Eurasian History G 1 - 6
Graduate Research Seminar in Russian, East European, and Eurasian History. Topics will vary.
Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions.

8300 Seminar in African History G 1 - 6
Graduate Research Seminar in African History. Topics will vary.
Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions. Cross-listed in AAAS 8300.

8350 Seminar in the History of the Islamic World G 1 - 6
Graduate Research Seminar in the History of the Islamic World. Topics will vary.
Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions.

8400 Seminar in East Asian History G 1 - 6
Graduate Research Seminar in East Asian History. Topics will vary.
Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions.

8410 Chinese History Research Methodology G 1 - 6
Introduction to sources and methods in Chinese historical research (pre-modern and modern periods).
Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions.

8500 Seminar in International History G 1 - 6
Graduate Research Seminar in International and Diplomatic History. Topics will vary.
Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions.

8550 Seminar in Military History G 3
Graduate Research Seminar in Military History. Topics will vary.
Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs.

8630 Seminar in the history of Sexuality G 1 - 6
Graduate Research Seminar in the History of Sexuality. Topics will vary.
Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions.

8801 Seminar in History G 1 - 6
Graduate Research Seminar in History.
Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions.

8999 Dissertation Research G 1 - 12
Research for dissertation.
Prereq: Grad standing. Repeatable. This course is graded S/U.

History of Art
**History of Art**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>Western Art I: Ancient and Medieval Worlds</td>
<td>U 3</td>
<td>Examination of the history of Western Art from the third millennium BCE to the fifteenth century CE. This course is available for EM credit. GE VPA and historical study and diversity global studies course.</td>
</tr>
<tr>
<td>2001H</td>
<td>Western Art I: Ancient and Medieval Worlds</td>
<td>U 3</td>
<td>Examination of the history of Western Art from the third millennium BCE to the fifteenth century CE. Prereq: Honors standing, or by permission of dept or instructor. Not open to students with credit for 201, 201H, 210, or 210H. This course is available for EM credit. GE VPA and historical study and diversity global studies course. VSP Admis Cond course.</td>
</tr>
<tr>
<td>2002</td>
<td>Western Art II: The Renaissance to the Present</td>
<td>U 3</td>
<td>Examination of the history of art in Europe and the United States, from 1400 to the present. This course is available for EM credit. GE VPA and historical study and diversity global studies course.</td>
</tr>
<tr>
<td>2002H</td>
<td>Western Art II: The Renaissance to the Present</td>
<td>U 3</td>
<td>Examination of the history of art in Europe and the United States, from 1400 to the present. Prereq: Honors standing, or by permission of dept or instructor; GE VPA or historical study and diversity global studies course.</td>
</tr>
<tr>
<td>2003</td>
<td>The Art and Visual Culture of East Asia</td>
<td>U 3</td>
<td>Art of East Asian cultures from ancient through contemporary times. Prereq: Not open to students with credit for 210 or 2003H. GE VPA and historical study and diversity global studies course.</td>
</tr>
<tr>
<td>2003H</td>
<td>The Art and Visual Culture of East Asia</td>
<td>U 3</td>
<td>Art of East Asian cultures from ancient through contemporary times. Prereq: Honors standing. Not open to students with credit for 2003 (213). GE VPA and historical study and diversity global studies course.</td>
</tr>
<tr>
<td>2005</td>
<td>History of Latin American Art: Prehispanic and Early Modern</td>
<td>U 3</td>
<td>Examines the art of Latin America from about 1500 BC to 1521, surveying both prehistoric civilizations as well as those of Spahish and Portuguese from first encounters in 1492 to the wars of independence in the early twentieth century. A wide range of objects and images will be discussed, from painting, sculpture, and architecture to ceramics, featherwork, and textiles. GE VPA and historical study course.</td>
</tr>
<tr>
<td>2101</td>
<td>Introduction to African Art and Archaeology</td>
<td>U 3</td>
<td>The Art and Archaeology of Africa with emphasis on the historic cultures of Rock Art (8,000 B.C.), Egypt (3,000 B.C.), Nok (900 B.C.), Igbo-Ukwu (800 A.D.), Ife (1200 A.D.), and Benin (1400-1900 A.D.). Prereq: Not open to students with credit for 216 or AFAM 2101. GE VPA and diversity global studies course. VSP Admis Cond course. Cross-listed in AFAM 2101.</td>
</tr>
<tr>
<td>2194</td>
<td>Group Studies</td>
<td>U 1-3</td>
<td>The investigation of particular problems in various fields of the history of art. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions.</td>
</tr>
<tr>
<td>2301</td>
<td>Classical Archaeology</td>
<td>U 3</td>
<td>Introduction to the principles, methods, and history of archaeological investigation in the ancient Greek and Roman world, illustrated through a selection of major classical sites. Prereq: Not open to students with credit for Clas 2301 or History 2210. GE cultures and ideas and historical study and diversity global studies course. Cross-listed in Clas 2301 and History 2210.</td>
</tr>
<tr>
<td>2901</td>
<td>Introduction to World Cinema</td>
<td>U 3</td>
<td>Chronological survey of the most influential and recognized film artists and film movements of the world. GE VPA and diversity global studies course.</td>
</tr>
<tr>
<td>3002</td>
<td>The History of Western Architecture</td>
<td>U 3</td>
<td>Major buildings of Western Civilization from antiquity to the present in their historical and cultural contexts. Prereq: Not open to students with credit for 250, or 300, or more than one course from 2001-2002 (201-202) or from 210-212 sequences, or History 2220, or any course from Clas 5110-5120 (600-602) sequence. GE VPA and diversity global studies course.</td>
</tr>
<tr>
<td>3005</td>
<td>Christian Art</td>
<td>U 3</td>
<td>An introduction to the wide range of forms and functions of Christian images and spaces from the origin until 1700. Prereq: Soph standing. Not open to students with credit for 301. GE VPA course.</td>
</tr>
<tr>
<td>3010H</td>
<td>Gender and Sexuality in Western Art</td>
<td>U 3</td>
<td>Introduction to the study of gender and sexuality in the history of art. Topics to be explored include the construction of gender through visual images, viewership and the gaze, the historical status of female artists and patrons, queer and feminist art history, and the depiction of the body. GE VPA course.</td>
</tr>
<tr>
<td>3211</td>
<td>Art and Civiliztion in the Near East</td>
<td>U 3</td>
<td>An examination of the development of the visual arts and architecture of the Near East from the Neolithic Revolution to the Islamic period. Prereq: Soph standing. Not open to students with credit for 305. GE VPA course.</td>
</tr>
<tr>
<td>3251</td>
<td>Renaissance Art in Italy</td>
<td>U 3</td>
<td>Art and society in Renaissance Italy. Prereq: Soph standing. Not open to students with credit for 315, 515, 4521 (529), or 4630 (530). GE VPA and diversity global studies course.</td>
</tr>
<tr>
<td>3303</td>
<td>Introduction to Modern and Contemporary Latin American Art and Culture</td>
<td>U 3</td>
<td>Provides students with an overview of the major trends and movements of Latin American art and culture from the late 19th to the 21st centuries. GE VPA and diversity global studies course.</td>
</tr>
<tr>
<td>3305H</td>
<td>Honors History of Photography</td>
<td>U 3</td>
<td>This course will begin with the emergence of photography and will provide a thematic overview and critical introduction to the main debates and achievements in the history of photography. No previous experience in photography required. Prereq: Honors standing, or permission of instructor. Not open to students with credit for 3605. GE VPA course.</td>
</tr>
<tr>
<td>3311</td>
<td>Impressionism, Then and Now</td>
<td>U 3</td>
<td>An examination of the emergence and evolution of French Impressionism and its impact on subsequent artistic production from the early 20th century to the present. GE VPA course.</td>
</tr>
<tr>
<td>3901</td>
<td>World Cinema Today</td>
<td>U 3</td>
<td>An introduction to the art of international cinema today, including its forms and varied content. Prereq: Soph standing, or permission of instructor. GE VPA and diversity global studies course.</td>
</tr>
<tr>
<td>4001</td>
<td>Writing Seminar in History of Art</td>
<td>U 3</td>
<td>Training in writing a variety of assignments commonly undertaken by art historians. Prereq: History of Art Major. Not open to students with credit for 415.</td>
</tr>
<tr>
<td>4005</td>
<td>An Introduction to Artistic Media and Techniques</td>
<td>U 3</td>
<td>A survey of the major historical and contemporary artistic media and techniques. Prereq: History of Art major, or permission of instructor. Not open to students with credit for 450.</td>
</tr>
<tr>
<td>4010</td>
<td>An Introduction to the Methods and Theories of Art History</td>
<td>U 3</td>
<td>An introduction to the fundamental methods and theories of art historical investigation. Prereq: History of Art major, or permission of instructor.</td>
</tr>
<tr>
<td>4016</td>
<td>Senior Research Seminar in History of Art</td>
<td>U 3</td>
<td>A research seminar required of all History of Art majors designed to develop and perfect their research and writing skills. Prereq: 4001 or 4010; or permission of instructor.</td>
</tr>
<tr>
<td>4020</td>
<td>Special Topics in Architecture</td>
<td>U 3</td>
<td>This is a lecture course, the contents of which would change with each offering. Prereq: 2001 (201), or 2002 (202), or permission of instructor. Repeatable to a maximum of 6 cr hrs.</td>
</tr>
<tr>
<td>4030</td>
<td>Museum Studies Seminar</td>
<td>U 3</td>
<td>Provide a hands-on exploration of museum exhibitions and how they shape knowledge in the field. Prereq: Permission of instructor. Not open to students with credit for 430.</td>
</tr>
<tr>
<td>4050</td>
<td>Art of Paris</td>
<td>U 3</td>
<td>Study of the painting, sculpture, buildings, and public and private spaces created in and for the people of Paris. Prereq: Soph standing. Not open to students with credit for 550.</td>
</tr>
<tr>
<td>4191</td>
<td>Internship in Art History</td>
<td>U 1-3</td>
<td>A cooperative education or internship assignment conducted under the supervision of a faculty member. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs or 2 completions. This course is graded SU.</td>
</tr>
<tr>
<td>4193</td>
<td>Individual Studies</td>
<td>U 1-3</td>
<td>Individual study in some field of historical development; designed to allow the student to work on a problem of particular interest. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded SU.</td>
</tr>
<tr>
<td>4212</td>
<td>Egyptian Art and Archaeology</td>
<td>U 3</td>
<td>A specialized study of the architecture, sculpture, painting, and minor arts of ancient Egypt. Prereq: 2001 (201), or equiv with permission of instructor. Not open to students with credit for 621 or 521.</td>
</tr>
<tr>
<td>4301</td>
<td>Art of Ancient Greece and Rome</td>
<td>U 3</td>
<td>Explores the art of Ancient Greece and the Roman world from the early Bronze Age (c. 3000 BCE) to the era of Constantine (337 CE). While focusing on sculpture, painting and architecture, the approach in this course will also employ the methods of a wide variety of disciplines, including art history, archaeology, anthropology, history, epigraphy and Classical philology. Prereq: Not open to students with credit for Clas 4301.</td>
</tr>
</tbody>
</table>
4421 Medieval Art
Art and architecture of Europe and the Eastern Mediterranean from the 5th to the 15th centuries; focuses on visual culture of monasteries, cathedrals, and castles.
Prereq: Soph standing. Not open to students with credit for 603, 625, 651, 525. GE VPA and diversity global studies course.

4510 Northern Renaissance Art
Art of Northern Europe from the late 14th to the mid 16th century, with emphasis on the major masters.
Prereq: 2001 (201), or 2002 (202), or permission of instructor. Not open to students with credit for 527 or 627.

4531 17th-Century Art of the Netherlands
17th Century Dutch and Belgian art: focuses on major artists and various functions of art (propagating religious beliefs, shaping values, defining identities).
Prereq: 2001 (201), 2002 (202), or permission of instructor. Not open to students with credit for 533.

4541 17th-Century Art of Italy and Spain
17th century Italian and Spanish art and architecture: focuses on major artists and various functions of art and architecture.
Prereq: 2001 (201), or 2002 (202), or permission of instructor. Not open to students with credit for 523 or 631.

4550 18th-Century European Art
Prereq: 2002, or permission of instructor. Not open to students with credit for 534 or 634.

4605 Aspects of Modernity
Explores questions of the distinctively "modern" in relation both to particular works of art and to various explicit reflections on broader cultural notions of modernity. The content will change with each offering.
Prereq: English 1110 (110), and Soph standing. Not open to students with credit for 340. GE VPA course.

4620 Twentieth-Century European Art
Historical/Conceptual survey of European art of the twentieth century.
Prereq: 2002 (202) or 4625 (340), or permission of instructor. Not open to students with credit for 540.

4621 Twentieth-Century Architecture
A historical and conceptual survey of architecture from the late 19th century to the beginning of the 21st and portions of the late 21st century developments.
Prereq: 2002 (202), or permission of instructor. Not open to students with credit for 559.

4630 American Art
A study of architecture, painting, and sculpture in America.
Prereq: Soph standing, and 2002 (202), and English 1110 (110). Not open to students with credit for 330 or 530. GE VPA course.

4640 Contemporary Art Since 1945
Visual arts of Europe and the United States from 1945 to the present.
Prereq: 2002 (202), or permission of instructor. Not open to students with credit for 541.

4798.01 Foreign Study in History of Art: Medieval Art in Rome and Florence
This course traces the development of Christian architecture in Italy from its earliest examples in Rome to the late Middle Ages. We will study examples in Rome, Florence, Pisa, and Siena. The course is organized around intensive reading and instruction in the first week in Columbus, followed by two and a half weeks on-site in Italy looking at these early Christian and medieval buildings.
Prereq: Permission of instructor. GE VPA course.

4798.02 The Arts of Japan
This study abroad program investigates the art of Japan, with a specific emphasis on art and architecture from the 14th century to the present in Tokyo and Kyoto. Students will spend a week in May on campus doing preparatory coursework, reading and research, and will then travel to Japan for two weeks of intensive study, including seeing artworks, temples, and shrines firsthand.
Prereq: Permission of instructor.

4810 The Arts of China
An overview of the visual arts of China and their cultural context from prehistoric times to the modern era.
Prereq: Soph standing, or permission of instructor. Not open to students with credit for 576. GE VPA and diversity global studies course.

4815 Modern and Contemporary Chinese Art
Modern Chinese art (late 19th century to today) with emphasis on artists, artworks, and their social, artistic, institutional, and theoretical contexts.
Prereq: Soph standing. Not open to students with credit for 679.

4820 The Arts of Japan
Major trends in the visual arts of Japan, from prehistory through the 19th century.
Prereq: English 1110 (110) or 111 or equiv. Not open to students with credit for 582. GE VPA and diversity global studies course.

4825 From Modernism to Manga: Modern and Contemporary Art in Japan
Explore the arts of Japan from 1868-present, covering a wide range of materials, including sculpture, performance art, photography, contemporary painting, and manga. We will discuss historical & social contexts and the burst of the economic bubble in the 1990s. We will address issues such as gender and representations of the body, the cult of cuteness, and the dynamics of nationalism since 1945.
Prereq: Permission of instructor. GE VPA and diversity global studies course.

4998 Undergraduate Scholarship: Research and Creative Activity in History of Art
Undergraduate research or creative activities in varying topics.
Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 9 completions. This course is graded S/U.

4998H Undergraduate Research (Honors)
Undergraduate research or creative activities in varying topics.
Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 9 cr hrs or 9 completions. This course is graded S/U.

4999 Thesis Research
Undergraduate research or creative activities in varying topics.
Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 9 completions. This course is graded S/U.

4999H Thesis Research Honors
Undergraduate research or creative activities in varying topics for an Honors thesis project.
Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 9 cr hrs or 9 completions. This course is graded S/U.

5001 Topics: Western Art
Topics to be announced.
Repeatable to a maximum of 9 cr hrs.

5002 Topics in Asian and Non-Western Art
Topics to be announced.
Repeatable to a maximum of 9 cr hrs.

5060 Alternative Histories
An exploration of the strategies and techniques developed by both academic and non-academic historians to re-imagine the past, with an emphasis on interpreting non-alphabetic traces of the past.

5222 Later Islamic Art
Introduction to the history of Islamic art and architecture in the later period (14th through the 18th centuries) including the Mongol, Timurid, Mamluk, Ottoman, Safavid, and Indo-Muslim art.
Prereq: 2001 (201), or 2002 (202), or 2003 (213), or Grad standing, or permission of instructor.
Not open to students with credit for 684.

5312 Art and Archaeology of Ancient Greece
This course will explore the art history, archaeology, and material culture of Ancient Greece to the end of the Hellenistic Period (c. 3000-31 BCE).
Prereq: 2001 or 2002, or Grad standing, or permission of instructor.

5322 Roman Art and Archaeology
This course will explore the art history, archaeology, and material culture of the Roman Republic and Empire. Students will be encouraged both to consider the wide range of disciplines that contribute to the field of Classical Archaeology, including such sources of evidence as material remains, inscriptions, and literature, and to apply the methodologies of art history, archaeology, anthropology.
Prereq: 2001 or 2002, or Grad standing, or permission of instructor. Not open to students with credit for Class 5322.

5422 Medieval and Renaissance Manuscript Illumination
A chronological survey of Medieval and Renaissance illuminated manuscripts in the West.
Prereq: 2001 (201), or Grad standing, or permission of instructor. Not open to students with credit for 652.

5430 The Age of Giott
Art of the Late Middle Ages in Western Europe in its social context, with new developments and major artists (Giotto, Duccio, Pisano, Stefan, Piero) emphasized.
Prereq: 2001 (201), or Grad standing, or permission of instructor. Not open to students with credit for 628.

5521 Renaissance Painting in Central Italy
A history of the arts of Florence and Rome from 1400 to 1600.
Prereq: 2002 (202), or Grad standing, or permission of instructor.

5531 17th-Century Dutch Art
Major artists, including Rembrandt and Vermeer, and developments of 17th century Dutch art examined with a focus on modes of representation and issues of interpretation.
Prereq: 2002 (202), or 6031 (333), or Grad standing, or permission of instructor. Not open to students with credit for 632 or 633 prior to Au Qtr 1998.
History of Art

5562 Art and History in Early Modern Latin America, 1492-1580
Explores the visual culture of early modern Latin America through studies of wide range of objects—from featherwork shields to beadwork "idols" to paintings on paper and canvas—interpreted from a range of disciplinary (art history, anthropology, history) and theoretical perspectives.

5611 European Art in the Age of Revolution, 1774-1851
Survey of major trends in European art from the French Revolution until the middle of the 19th Century.
PreReq: 2002 (202), or 4610 (535), or Grad Standing, or permission of Instructor. Not open to students with credit for 657.

6015 Practicum for Graduate Teaching Associates in the History of Art
A teacher-training and professional development workshop for new Graduate Teaching Associates in Art History.
PreReq: Open only to students with a GTA appointment in the department of history of art. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

7015 Curatorial Studies: Exhibition Histories
This course examines the art exhibition (from the 19th century to the present) as an exemplary cultural form. It traces the history of modern art through specific exhibitions that have redefined the parameters of art-making, on the one hand, and its reception on the other, defining along the way the terms that inform curatorial practice.
PreReq: Grad standing.

7200 Curatorial Elective
Courses offered under this number serve as electives within the Contemporary Art and Curatorial Practice program. They are designed to examine specific curatorial topics, and are sometimes offered in conjunction with current exhibitions.
PreReq: Grad standing. Repeatable to a maximum of 12 cr hrs.

7198.01 Curatorial Practicum: Exhibition Planning
This course is intended to give students in the Contemporary Art and Curatorial Practices MA program the opportunity to design and prepare an exhibition.
PreReq: Students must be in their final year of the MA program in Contemporary Art and Curatorial Practice. This course is graded S/U.

7198.02 Curatorial Practicum: Exhibition Execution
This course is intended to give students in the Contemporary Art and Curatorial Practices MA program the opportunity to install an exhibition of their own design and to write the accompanying catalog essays.
PreReq: 7198.01. This course is graded S/U.

8000 Topics in Art History
A graduate-level equivalent of a course being offered at the 500-level.
PreReq: Grad standing. Not open to students with credit for 880. Repeatable to a maximum of 6 cr hrs.

8401 Studies in Medieval Art
Selected problems in architecture, painting, sculpture, and the minor arts from the Early Christian through Byzantine and Gothic periods.
Repeatable to a maximum of 12 cr hrs.

8521 Studies in Italian Renaissance Art
Advanced study and specialized research on topical problems in the painting, sculpture, and architecture of Italy in the 14th, 15th, and 16th centuries.
Repeatable to a maximum of 12 cr hrs.

8561 Studies in Latin American Art
Advanced study and specialized research on topical issues in Latin American Art.
PreReq: Grad standing, or permission of instructor. Repeatable to a maximum of 12 cr hrs.

8601 Studies in Modern Art
Advanced study and specialized research on topical problems in the art of the United States or modern Europe.
PreReq: Grad level course in Modern Art, or permission of instructor. Repeatable to a maximum of 12 cr hrs.

8631 Studies in American Art
Problems in American art.
PreReq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

8641 Wexner Seminar
Graduate seminar offered in conjunction with Wexner exhibitions, performance series, media series, or symposia; may be taught by visiting artists, performers, or critics.
Repeatable to a maximum of 12 cr hrs or 12 completions. Cross-listed in CompStd 8891.

8811 Studies in Chinese Art
Advanced study and specialized research in the history of Chinese art.
PreReq: 5811 (677), 5815 (678), or 5816, or permission of instructor. Repeatable to a maximum of 12 cr hrs.
8821 Studies in Japanese Art       G   4
Advanced study and specialized research in the history of Japanese art. 
Prereq: 8821 (681), 8822 (682), or 8821 (781), or permission of instructor. Repeatable to a 
maximum of 12 cr hrs.

8901 Cinema Studies                     G   4
Intensive studies of specific movements, artists, periods and theories of cinema. 
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

8999 Dissertation Research in History of Art                           G   1 - 12 
Research for dissertation purposes only.  
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions. 
This course is graded S/U.

Honors, University

1891 Eminence First Year Seminar          U   0
This seminar offers new Eminence Fellows a venue to build community and increase resilience 
in college by providing Eminence specific academic, personal, and life management tools 
needed to function effectively as a first year Eminence Fellow. Fellows will understand and be 
able to utilize the Cifton Strengths Assessment as a tool to help develop a team dynamic as 
well as their own personal path.  
Prereq: First-year student in the Eminence Fellows Program. This course is graded S/U.

1892 Eminence Second Year Seminar         U   0
You will actively engage in the development of a personal vision and mission for your future. 
You will craft a strengths-based, professional mission statement. You will investigate 
opportunities aimed at polishing your presentation and writing skills, identify best-fit graduate 
and professional programs, and understand the intricacies of faculty interaction on many 
levels.

2296H University Honors Seminar         U   1 - 3
Designed to foster an understanding of concepts, issues, and problems which transcend the 
boundaries of a single discipline; topic varies.  
Prereq: Honors standing, or permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 
completions.

2396H London Honors                      U   3
An introduction to British life and culture. Students study the formation of British rule, political 
structures, immigration, diversity, global position, art, and literature and how these experiences 
have shaped the worldviews, beliefs, policies, and practices of English society. At the end of the 
semester, students participate in a week long study abroad in London/England.  
Prereq: Honors standing, and enrollment in London Honors program, and permission of 
department. GE education abroad course.

2596H Interdisciplinary and Collaborative Research U   3
Provides an introduction to and practicum on interdisciplinary and collaborative research and 
creative activity. Students separate into teams and execute a project of their own, the results of 
which will be shared in the final weeks of the semester. The students, guided by faculty, will 
formulate projects that relate specifically to the Ohio State University.  
Prereq: Honors standing. GE cross-disciplinary seminar.

3596H University Honors Seminar          U   1 - 3
University Honors Seminar. 
Prereq: Honors standing. Repeatable to a maximum of 9 cr hrs or 3 completions.

Horticultural Technology

1201T Exploring Horticulture                U   %
Promotes student success in college and preparation for a career; explores personal and 
career interests, needs, goals, and the support services available for student success.

2110T Plant Materials I                      U   3
Plant identification course to include: trees, shrubs, evergreens, vines, annuals, perennials 
and tropical plants common to the Midwest covering: identification, morphology, classification, 
nomenclature and adaptability. A grade of C or better required to meet graduation 
requirements for Landscape Horticulture and Turfgrass Management.  
Prereq: Not open to students with credit for 243T and 244T. This course is available for EM credit.

2120T Plant Materials II                     U   3
Plant identification including: less common deciduous and evergreen trees, shrubs, vines and 
herbaceous plants common to the Midwest covering: identification, morphology, classification, 
nomenclature and adaptability. A grade of C or better is required to meet graduation 
requirements for Landscape Horticulture.  
Prereq: Not open to students with credit for 243T and 244T. This course is available for EM credit.

2140T Horticultural Photography            U   1
Introductory digital photography and image editing course emphasizing composition, lighting, 
and exposure. Digital correction and editing with emphasis on horticultural marketing and 
portfolio development.  
Prereq: Not open to students with credit for 270T. This course is available for EM credit.

2189.10T Practicum in Floral Design          U   1 - 2
Supervised experiences in floral design and flower shop work. A grade of C or better is 
required to meet graduation requirements.  
Prereq: 2600T. Repeatable to a maximum of 4 cr hrs or 4 completions.

2189.21T Practicum in Greenhouse Management   U   1
Supervised experiences in greenhouse crop production. A grade of C or better is required to 
meet graduation requirements.  
Repeatable to a maximum of 4 cr hrs.

2189.22T Practicum in Nursery Management       U   1
Supervised experiences in nursery crop production and management. A grade of C or better is 
required to meet graduation requirements.  
Repeatable to a maximum of 4 cr hrs.

2189.30T Practicum in Landscape Horticulture     U   1 - 2
Supervised experiences in landscape maintenance work. A grade of C or better is required to 
meet graduation requirements.  
Repeatable to a maximum of 4 cr hrs or 4 completions.

2189.50T Turfgrass Management Practicum        U   1
Practical experience in supervised horticultural/turfgrass laboratories, with emphasis on 
developing and improving competencies related to classroom, laboratory and career activities. 
A grade of C or better is required to meet graduation requirements.  
Prereq: Open to Turfgrass Management major. Repeatable to a maximum of 3 cr hrs.

2190.10T Practical Leadership in Floral Design  U   1 - 2
Supervised experiences in flower shop leadership and management. A grade of C or better is 
required to meet graduation requirements.  
Prereq: 2189.10T (264T and 265T). Repeatable to a maximum of 2 cr hrs or 2 completions.

2190.21T Practical Leadership in Greenhouse Management U   1
Supervised experiences in greenhouse leadership and management. A grade of C or better is 
required to meet graduation requirements.  
Prereq: 2189.21T. Repeatable to a maximum of 2 cr hrs.

2190.10T Floral Design and Marketing Internship    U   1 - 2
Employment in the floral industry, structured to provide varied occupational experiences, 
supervised by an industry employer, and coordinated by faculty. A grade of C or better is 
required to meet graduation requirements.  
Prereq: 2101T and 2620T (264T). Repeatable to a maximum of 4 cr hrs or 4 completions.

2190.21T Greenhouse Management Internship         U   1 - 3
Employment in the greenhouse industry, structured to provide varied occupational experiences, 
supervised by an industry employer, and coordinated by faculty. A grade of C or better is 
required to meet graduation requirements.  
Prereq: 2101T, 2189.21T, and 2500T. Repeatable to a maximum of 6 cr hrs or 2 completions.

2191.22T Nursery Management Internship           U   3
Employment in the nursery industry, structured to provide varied occupational experiences, 
supervised by an industry employer, and coordinated by faculty. A grade of C or better is 
required to meet graduation requirements.  
Prereq: 2101T and 2189.22T. Repeatable to a maximum of 6 cr hrs.

2191.23T Greenhouse Engineering Technology Internship U   3
Experience of employment in the greenhouse industry, structured to provide varied 
occupational experiences, supervised by an industry employer, and coordinated by faculty. A grade of C or better is required to meet graduation requirements.  
Prereq: 2101T, 2189.21T, and 2500T. Repeatable to a maximum of 6 cr hrs.

2191.30T Landscape Horticulture Internship       U   3
Employment in the landscape industry structured to provide varied occupational experiences. 
supervised by an industry employer and coordinated by faculty. A grade of C or better is 
required to meet graduation requirements.  
Prereq: 2101T (230T); a grade of C or above in 2110T (244T); GPA 2.0 or above. Repeatable 
to a maximum of 6 cr hrs.

2191.50T Turfgrass Management Internship         U   3
Employment in turfgrass management industry at an approved facility structured to provide 
varied occupational experiences. Supervised by an industry professional and coordinated by 
faculty. A grade of C or better is required to meet graduation requirements.  
Prereq: A grade of C or above in 2225T (289.05T and EngTech 219T), 2230T (223T) and 
2250T (225T), and CPRH 2.0 or above. Repeatable to a maximum of 6 hrs.

2191.55T Turfgrass Equipment Manager Internship     U   2
Employment in turfgrass equipment management industry at an approved facility structured 
to provide varied occupational experiences. Supervised by an industry professional and 
coordinated by faculty. A grade of C or above is required to meet graduation requirements. 
Prereq: A grade of C or above in 2225T and 2227T.

2193T Individual Studies                      U   1 - 3
Designed to give an individual student an opportunity to pursue special studies not offered in 
other courses.  
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions. 
This course is graded S/U.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2194T</td>
<td>Group Studies</td>
<td>U 1-3</td>
<td>Designed to give groups of students an opportunity to pursue special studies not offered in other courses. Permission of instructor. Repeatable to a maximum of 10 or hrs or 10 completions.</td>
</tr>
<tr>
<td>2225T</td>
<td>Turf Equipment Operation and Maintenance</td>
<td>U 3</td>
<td>Principles and practices of turf facilities organization and management, equipment maintenance, operation, safety and fleet management. A grade of C or better required to meet graduation requirements for Turfgrass Management. Prereq or conc. GenMath 1040T or Math 1050 or math placement level R or higher.</td>
</tr>
<tr>
<td>2227T</td>
<td>Turfgrass Reel Mower Maintenance</td>
<td>U 3</td>
<td>Theory, configuration, and maintenance of turfgrass reel mower cutting units, including a study of the bedknife attitude, spin vs relief grinding, backlapping, bedknife selection.</td>
</tr>
<tr>
<td>2230T</td>
<td>Fundamentals of Turfgrass Science and Maintenance</td>
<td>U 3</td>
<td>Identification, growth and development characteristics and responses, uses, and fundamental practices essential to the production and management of fine quality turf. A grade of C or better required to meet graduation requirements for Landscape Horticulture and Turfgrass Management. Prereq or conc. GenBio 1250T and GenMath 1040T or Math 1050 or math placement level R or higher. This course is available for EM credit.</td>
</tr>
<tr>
<td>2240T</td>
<td>Golf Course and Sports Turf Irrigation and Drainage</td>
<td>U 3</td>
<td>Principles of design, selection, installation, maintenance, and operation of equipment and materials used in golf course and sports turf irrigation and drainage systems. A grade of C or better required to meet graduation requirements for Turfgrass Management. Prereq. GenMath 1040T or Math 1050 or math placement level R or higher.</td>
</tr>
<tr>
<td>2260T</td>
<td>Sports Turf Operations Organization and Management</td>
<td>U 3</td>
<td>Specialized course in sports turf management including the organization, design, construction, equipment, field surface quality, safety, personnel, finances, renovation, and maintenance of a sports turf facility. A grade of C or better required to meet graduation requirements for Turfgrass Management. Prereq. 2191.50T (280.05T), BioTech 2218T (218T). Prereq or conc: 2880T (272T) or 2890T (274T).</td>
</tr>
<tr>
<td>2270T</td>
<td>Golf Course Organization and Management</td>
<td>U 3</td>
<td>Specialized course in golf course management including the organization, design, construction, equipment, personnel, finances, and maintenance of the golf course. A grade of C or better required to meet graduation requirements for Turfgrass Management. Prereq. 2191.50T (280.05T), BioTech 2218T (218T). Prereq or conc: 2880T (272T) or 2890T (274T). Not open to students with credit for 225T.</td>
</tr>
<tr>
<td>2320T</td>
<td>Landscape Construction</td>
<td>U 3</td>
<td>Techniques for building, pricing, bidding and installing various landscape plantings, features and structures including (but not limited to): pavers, retaining walls and wooden structures. A grade of C or better required to meet graduation requirements for Landscape Horticulture. Prereq. GenMath 1040T or Math 1050 or math placement level R or better. This course is available for EM credit.</td>
</tr>
<tr>
<td>2360T</td>
<td>Landscape Design</td>
<td>U 3</td>
<td>Introduction to landscape drafting, CAD, design and planning emphasizing the design program, form composition, drafting techniques, design representation and 2 and 3-dimensional CAD. A grade of C or better required to meet graduation requirements for Landscape Horticulture. Prereq. or conc: 2110T. Not open to students with credit for 231T.</td>
</tr>
<tr>
<td>2410T</td>
<td>Sustainable Nursery Management and Production</td>
<td>U 4</td>
<td>Principles of sustainable nursery management, marketing and production operations with an emphasis on nursery facilities and practices necessary to produce field grown and container nursery stock. Prereq: 2120T; and GenBio 1250T (125T) or Biology 1113 (113). Not open to students with credit for 241T and 242T.</td>
</tr>
<tr>
<td>2420T</td>
<td>Garden Center Management</td>
<td>U 2</td>
<td>Principles of retail garden center management including sales, marketing, advertising, personnel management, customer relations and management of product lines, stock and displays. Prereq: 2120T. Not open to students with credit for 248T.</td>
</tr>
<tr>
<td>2500T</td>
<td>Greenhouse Environment Control</td>
<td>U 4</td>
<td>Principles and practices of sustainable greenhouse operation and management. Topics include glazing, frames, heating, cooling, energy conservation, nutrition, irrigation, light, plant growth and operations management. A grade of C or better required to meet graduation requirements in Greenhouse and Nursery Management, Nursery Specialization. This course is available for EM credit.</td>
</tr>
<tr>
<td>2520T</td>
<td>Greenhouse Perennial Production</td>
<td>U 3</td>
<td>Principles and practices of greenhouse perennial plant production, including propagation, vernalization, photoperiodic treatments, propagation techniques, integrated pest and plant health management, and post-harvest marketing. Prereq: 2500T (251T). Not open to students with credit for 25ST. This course is available for EM credit.</td>
</tr>
<tr>
<td>2540T</td>
<td>Greenhouse Production of Annuals</td>
<td>U 3</td>
<td>Principles and practices of greenhouse bedding and flowering container plant production, including propagation, transplanting, nutrition, environmental requirements, height control, harvesting, pests, pathogens and post-harvest marketing. Prereq: 2500T.</td>
</tr>
<tr>
<td>2560T</td>
<td>Greenhouse Vegetable Production</td>
<td>U 3</td>
<td>Principles and practices of greenhouse vegetable crop production, including propagation, production systems, nutrition, environmental requirements, management practices, harvesting, pests, pathogens, food safety and post-harvest handling. Prereq: 2500T.</td>
</tr>
<tr>
<td>2600T</td>
<td>Commercial Floral Design</td>
<td>U 4</td>
<td>A basic course introducing the elements and principles of floral design as they relate to the construction of saleable flower arrangements and corsages. Prereq: Not open to students with credit for 262T and 264T. This course is available for EM credit.</td>
</tr>
<tr>
<td>2620T</td>
<td>Retail Flower Shop Operation</td>
<td>U 2</td>
<td>Principles and practices of management and operation of a retail flower shop with emphasis on purchasing, pricing, merchandising, selling, delivery and wire services. Prereq: 260T. This course is available for EM credit.</td>
</tr>
<tr>
<td>2640T</td>
<td>Flowers for Celebrations</td>
<td>U 4</td>
<td>A specialized course dealing with consulting, planning, organizing and creating floral designs and decor for wedding ceremonies and receptions, parties, and celebrations of life. Prereq: 260T (262T and 264T). Not open to students with credit for 26ST and 269T.</td>
</tr>
<tr>
<td>2660T</td>
<td>Post-Harvest Flower Care</td>
<td>U 2</td>
<td>Principles and practices of post-harvest flower care from producer to consumer with emphasis on identification and proper care and handling at the retail level. Prereq: 260T. Conc. 260ST. Not open to students with credit for 26ST. This course is available for EM credit.</td>
</tr>
<tr>
<td>2680T</td>
<td>Contemporary Floral Design</td>
<td>U 3</td>
<td>An advanced course emphasizing the artistic nature of floral design with a global perspective of contemporary styles, techniques and trends. Prereq: 260T. Conc. 260ST. Not open to students with credit for 267T.</td>
</tr>
<tr>
<td>2740T</td>
<td>Plant Propagation</td>
<td>U 4</td>
<td>Principles, techniques, skills, materials, and facilities used to propagate herbaceous and woody plants with emphasis on commercial propagation methods. Prereq: GenBio 1250T or Biology 1113 or HCS 2202.</td>
</tr>
<tr>
<td>2890T</td>
<td>Principles of Weed Science</td>
<td>U 3</td>
<td>A study of weed classification, ecology, plant competition, herbicide formulation, properties and uses of herbicides and weed management in horticultural crops. A grade of C or better required to meet graduation requirements for Landscape Horticulture and Turfgrass Management. Prereq: GenBio 1250T (125T). Prereq or conc: GenChem 1100T (113T). Not open to 2890T.</td>
</tr>
<tr>
<td>2900T</td>
<td>Plant Diseases of Ornamentals and Turf</td>
<td>U 3</td>
<td>Principles and practices in diagnosing and treating plant diseases on woody ornamentals and turf. A grade of C or better required to meet graduation requirements for Landscape Horticulture and Turfgrass Management. Prereq: 2110T or 2120T or 2230T; GenBio 1250T. This course is available for EM credit.</td>
</tr>
<tr>
<td>3550T</td>
<td>Components of Greenhouse Technologies</td>
<td>U 3</td>
<td>A study of selected components of modern greenhouse technology, including electric motors, automated material handling and watering controls, pesticide application, and supplemental lighting. Prereq: 2500T; GenMath 1145T; EngTech 2312T and 2322T. This course is available for EM credit.</td>
</tr>
<tr>
<td>3560T</td>
<td>Integrated Greenhouse Climate Control</td>
<td>U 4</td>
<td>Computerized climate control for greenhouse plant production, including data acquisition and control basics, use of the data, and climate control strategies for improved production efficiency. Prereq: 250T and 3550T. This course is available for EM credit.</td>
</tr>
</tbody>
</table>
1101  Plant Parenting U  2
This course demonstrates how propagating, growing, and caring for plants is based on scientific principles that are appreciated by developing skills in plant parenting. By the end of the term, students should be confident in their ability to grow a wide variety of houseplants and some popular garden plants.  

2194  Group Studies U  1 - 3
Special group studies in the area of horticulture and crop science. Repeatable to a maximum of 6 cr hrs or 6 completions.  

2200  The World of Plants U  3
Study of the cultivation, environmental, genetic, and social/cultural factors which influence the sustainable production of plants for food, fiber, ornamental and recreational uses. This course is available for EM credit. GE nat sci bio course.  

2201  Ecology of Managed Plant Systems U  4
Origin, diversification, and biogeography of plants inhabiting managed landscapes. GE nat sci bio course.  

2201E  Ecology of Managed Plant Systems U  4
Origin, diversification, and biogeography of plants inhabiting managed landscapes. Prereq: Honors standing. GE nat sci bio course.  

2202  Form and Function in Cultivated Plants U  4
An introduction to plant growth and development with special emphasis on structure function relationships important to productivity and quality in cultivated plants. Prereq: Not open to students with credit for 300, 300E, 310, 315, or PlntBio 300. GE nat sci bio course.  

2202E  Form and Function in Cultivated Plants U  4
An introduction to plant growth and development with special emphasis on structure function relationships important to productivity and quality in cultivated plants. Prereq: Honors standing. Not open to students with credit for 300, 300E, 310, 315, or PlntBio 300. GE nat sci bio course.  

2250  Introduction to Professional Golf Management U  2
Acquaints students with the PGA program, including program facilities and resources, components of the PGA/PGM Program, golf history, PGA Constitution, Career Enhancement, Golf Operations, and Customer Relations. Prereq: Not open to students with credit for 250 or 350.04.  

2260  Data Analysis and Interpretation for Decision Making U  3
Basic concepts of probability and statistics applied to the interpretation of quantitative data. Prereq: Math1130 or higher. Not open to students with credit for ADEDEcon 205, AnimSc 2260, ComLtr 3537, ENR 2000, or Stat 1450. GE data only course.  

2270  Historical Perspectives on Golf Course Design and Management U  2
A historical survey of golf course design and management and its effect on contemporary design and management.  

2300  Introduction to Hydroponics U  1
This hands-on intensive course will introduce students to soilless hydroponic crop production. The course will provide basic information on key components of hydroponics, different systems adopted for different crop species, as well as ideas of implementing them in commercial settings, home gardening as well as school science teaching programs.  

2305  Organic Gardening U  1
An overview and assessment of organic gardening practices for sustenance and recreation. Prereq: Not open to students with credit for 305.  

2306  Sustainable Vegetable Production Practicum: Planning, Growing and Marketing U  3
Provides students with an introduction to small-scale vegetable farm planning and management through consideration of plant growth and production, farm design, farm management and operations, and produce marketing. Prereq: Not open to students with credit for 213.  

2307  Sustainable Agriculture Practical Experience U  2
This course will introduce students to basic theory, practical skills, and tools associated with small-scale sustainable agriculture and farm enterprises. Topics will include soil management, tools and infrastructure, crop management, weed and pest management, enterprise management, and teamwork and leadership and will center on small-scale vegetable production. Repeatable to a maximum of 4 cr hrs.  

2340.01  Woody Ornamental Plants U  3
A survey of the most important woody ornamentals used in horticulture in the Midwest U.S. Weekly lectures will emphasize ornamental attributes, usage and management. Weekly plant walks (outdoor lecture) will emphasize plant identification. Prereq: Not open to students with credit for 234.  

2340.02  Herbaceous Ornamental Plants U  3
A survey of the most important annual and perennial herbaceous ornamentals used in horticulture in the Midwest U.S. Weekly lectures will emphasize ornamental attributes, usage and management. Weekly plant walks (outdoor lectures) will emphasize plant identification.  

2401  Sustainable Landscape Design I U  3
An introduction to sustainable landscape design for residential and small scale properties with an emphasis on principles of design and graphic communication. Prereq or concur: 2340. Not open to students with credit for 204.  

2501  Basic Golf Club Design and Repair U  1
Introduces students to fundamentals of modern golf club design and provides hands-on experience in basic golf club repair skills. Prereq: Not open to students students with credit for 3501 or 350.01, or students enrolled in the Professional Golf Management program.  

2502  Understanding the Rules of Golf and Golf Etiquette U  1
The course is designed to provide students the opportunity to learn the rules of golf and golf etiquette in detail so they can be better educated players and golf spectators.  

3100  Introduction to Agronomy U  3
An introductory course of row crop and forage agricultural production (agronomy). This course introduces students to row and forage crop species common in Ohio and surrounding states, and provides fundamental information on how these crops are managed in the region. Management aspects include site preparation, seasonality of management activities, and fundamentals of nutrient and pest management.  

3200  Introduction to Horticulture U  3
An introduction to the principles and practices of production and landscape horticultural science and the horticulture industry in Ohio and the USA. Emphasis on the diversity of crops, production systems, diversity of the horticulture industry and an introduction for students to possible careers in horticulture in Ohio and the USA.  

3220  Crop Origins and Diversity U  2
A survey of plant taxonomy including principles of nomenclature and classification. Students will learn important botanical characteristics of major plant families. Course emphasis is on plant taxa of economic importance in horticulture and agricultural production.  

3310  Crop Responses to the Environment U  3
The physiological basis of crop responses to abiotic and biotic environmental factors. Prereq: 2202 or 2202E, and Biology 1113 or 1113H.  

3320  Plant Propagation: The Manipulation of Plant Reproduction U  3
Principles, methods, and facilities involved in the sexual and asexual multiplication of plants. Credit for 2201 highly recommended prior to enrollment. Prereq: Not open to students with credit for 320.  

3370  Sports Turf Management U  2
Issues pertaining to sports field management including playing surface preparation, safety and playing quality, field maintenance and renovation techniques, turf sport IFPM practices and administration. This course is available for EM credit.  

3380  The Latino Workforce in Land Based Industries U  2
Current issues faced by immigrant workers in agriculture and the cultural, historical and legal context affecting work relations with their American supervisors. Prereq: Honors standing. Not open to students with credit for 380.  

3410  Sustainable Landscape Maintenance Practices U  2
An integrated approach to the sustainable maintenance of constructed landscapes - residential, commercial, and institutional, combining research based knowledge with field experience in maintenance practices. Prereq: 2201 or 2202.  

3420  Seed Science U  3
A study of the physiological processes of seed formation, dormancy, and germination; the production and marketing of seed in commerce. Prereq: 2201 or 2202, or permission of instructor. Not open to students with credit for 420.  

3438  Theme and Specialty Gardens U  2
Study of the principles and techniques of theme and specialty gardening. Prereq: 2201. Not open to students with credit for 438.  

3470  Introduction to Turfgrass Management U  3
Adaptation, identification, uses, growth characteristics, growth responses, and fundamental principles essential to the production of quality turf.  

3475  Turf Management for Golf Course Managers U  3
Survey of the cultural and management practices important in the daily agronomic operations of a golf course.  

3488.01  Professional Development U  1
Participation in structured co-curricular programs leading to professional development. Prereq: GPA 2.00 or above, and permission of instructor. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.  

3488.02  PGAM Player Development U  1
Focus on assisting students who have not passed the PGA of America's Playing Ability Test. Encourages golf skills evaluation, mental approach, development of a corrective action plan and re-evaluation of skills progress. Prereq: Permission of instructor. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.
### Horticulture and Crop Science

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credits</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>3501</td>
<td>PGM Basic Golf Operations</td>
<td>U 2</td>
<td>This course encompasses learning objectives and materials pertaining to Checkpoint 1 of the PGA of America's PGM/PGM program including tournament operations, golf car fleet management, rules of golf and introduction to teaching. Sp Sem. Prereq: 2250. Not open to students with credit for 350.01, 350.02, or 350.03.</td>
</tr>
<tr>
<td>3502</td>
<td>PGM Club Design, Performance, Fitting and Repair</td>
<td>U 2</td>
<td>This course encompasses learning objectives and work experience-related materials pertaining to Checkpoints 1 and 2 of the PGA of America's PGM/PGM Program including golf club design, performance, fitting and repair. Sp Sem. Prereq: 2250 and 3501. Not open to students with credit for 350.01 and 350.05.</td>
</tr>
<tr>
<td>3521</td>
<td>Greenhouse Systems and Management</td>
<td>U 2</td>
<td>Introduction to greenhouse systems, structural designs, controlled environment technologies, and management practices to commercially grow ornamental and vegetable crops under a controlled environment. Prereq: 2200, 2201, or 2202. Not open to students with credit for 5521.</td>
</tr>
<tr>
<td>4191.01</td>
<td>Sustainable Plant Systems Major Internship</td>
<td>U 2</td>
<td>This course encompasses learning objectives and materials pertaining to Checkpoints 1 and 2 of the PGA of America's PGM/PGM Program including golf club design, performance, fitting and repair. Sp Sem. Prereq: 2250 and 3501. Not open to students with credit for 350.01 and 350.05.</td>
</tr>
<tr>
<td>4191.02</td>
<td>PGM Internship</td>
<td>U 1</td>
<td>This course encompasses learning objectives and materials pertaining to Checkpoints 1 and 2 of the PGA of America's PGM/PGM Program including golf club design, performance, fitting and repair. Sp Sem. Prereq: 2250 and 3501. Not open to students with credit for 350.01 and 350.05.</td>
</tr>
<tr>
<td>4194</td>
<td>Group Studies</td>
<td>U 1 - 3</td>
<td>Special studies in the field of horticulture and crop science. Prereq: GPA 2.50 or above, and permission of instructor. Repeatable to a maximum of 3 cr hrs or 3 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>4300</td>
<td>Hydroponic Crop Production</td>
<td>U 2</td>
<td>This course will offer students the foundational understanding of the greenhouse food crop production technologies and practices and introduction to the science behind them. Lectures will overview the history and basic principles of greenhouse crop production using soilless (hydroponics) approach. Students will learn conventional/advanced production technologies and more. Prereq: 2202 or 2202E, and 2202 or 2202E.</td>
</tr>
<tr>
<td>4301</td>
<td>Hydroponic Crop Production Lab</td>
<td>U 1</td>
<td>This course will offer students the foundational understanding of the greenhouse food crop production technologies and practices and introduction to the science behind them. Lectures will overview the history and basic principles of greenhouse crop production using soilless (hydroponics) approach. Students will learn conventional/advanced production technologies and more. Prereq: 2202 or 2202E, and 2202 or 2202E.</td>
</tr>
<tr>
<td>4325</td>
<td>Plant Genetics</td>
<td>U 3</td>
<td>A study of plant transmission and functional genetics and their role in crop improvement. Prereq: 2200 (200) or 2201 or 2202 or 300 or MolGen 3300 (PntBio 300); and Chem 1110 (101) or 1210 (121); and Biology 1101 (101) or 1113 (113), or MolGen 1101 (PntBio 101). Not open to students with credit for 325.</td>
</tr>
<tr>
<td>4501.01</td>
<td>PGM Advanced Professional Experience I</td>
<td>U 1</td>
<td>Enhances professional development for students intending a career within the golf industry. While on this experience, students will complete specified Advanced Professional Experience activities. Students will learn about career opportunities and better understand the types of tasks/challenges associated with a career in professional golf management. Prereq: 4501.02, and PGM major or pre-major. Concur: 4191.02. This course is graded S/U.</td>
</tr>
<tr>
<td>4501.02</td>
<td>PGM Advanced Professional Experience II</td>
<td>U 1</td>
<td>Enhances professional development for students intending a career within the golf industry. While on this experience, students will complete specified Advanced Professional Experience activities. Students will learn about career opportunities and better understand the types of tasks/challenges associated with a career in professional golf management. Prereq: 4501.01, and PGM major or pre-major. Concur: 4191.02. This course is graded S/U.</td>
</tr>
<tr>
<td>4501.03</td>
<td>PGM Advanced Professional Experience III</td>
<td>U 1</td>
<td>Enhance professional development for students intending a career within the golf industry. While on this experience, students will complete specified Advanced Professional Experience activities. Students will learn about career opportunities and better understand the types of tasks/challenges associated with a career in professional golf management. Prereq: 4501.02, and PGM major or pre-major. Concur: 4191.02. This course is graded S/U.</td>
</tr>
</tbody>
</table>

4501.04 | PGM Advanced Professional Experience IV           | U 1     | Enhances professional development for students intending a career within the golf industry. While on this experience, students will complete specified Advanced Professional Experience activities. Students will learn about career opportunities and better understand the types of tasks/challenges associated with a career in professional golf management. Prereq: 4501.03, and PGM major or pre-major. Concur: 4191.02. This course is graded S/U. |

4501.05 | PGM Advanced Professional Experience V            | U 1     | Enhances professional development for students intending a career within the golf industry. While on this experience, students will complete specified Advanced Professional Experience activities. Students will learn about career opportunities and better understand the types of tasks/challenges associated with a career in professional golf management. Prereq: 4501.04, and PGM major or pre-major. Concur: 4191.02. This course is graded S/U. |

4503 | PGM Advanced Teaching and Swing Analysis          | U 2     | This course encompasses learning objectives and work experience-related materials pertaining to Checkpoints 2 and 3 of the PGA of America's PGM/PGM Program including swing concepts, analysis of the golf swing, and philosophy of teaching. Prereq: 2250, 3521, and 3502. |

4504 | Advanced Golf and Turf Operations                 | U 3     | Use a golf facility as a “model system” to apply a case study approach to demonstrate that golf professionals and turfgrass specialists must work together to meet the needs of their customers and supervisors. Golf professionals and turfgrass specialists have the common need to prepare integrated business plans. Prereq: 3470 or 3474. Not open to students with credit for 350.04 or 350.07. |

4560 | Creating a Virtual Perspective                    | U 3     | Examine a variety of open source and Web 2.0 communication technologies applicable to turf and landscape and other professionals. Identify issues related to authoring, delivering, and integrating applications into a professional social network. Prereq: Not open to students with credit for 560. |

4570 | Turfgrass Management and Science                  | U 3     | The course is designed to provide students with the principles based in ecology and plant physiology to manage intensively managed turfgrass systems in a holistic framework. Through the understanding of ecological principles that apply to turfgrass and the understanding of how turfgrass plants grow, the student will be able to develop management practices based on sound scientific grounds. Prereq: 3470 or 3474. |

4600 | Capstone                                         | U 2     | Examination of issues related to economic viability, social and ethical responsibility, environmental compatibility, and production efficiency of HCS-related enterprises to prepare students for transition from university to workplace. Prereq: Sr standing in Sustainable Plant System or Professional Golf Management major. Not open to students with credit for 600 or 601. |

4998 | Undergraduate Research                           | U 1 - 5 | Undergraduate research in Horticulture and Crop Science may take place in a laboratory, greenhouse, and/or field setting at The Ohio State University in Columbus, Wooster, and/or outlying branch farms. HCS 4998 should not be taken for Research with Distinction. Repeatable to a maximum of 12 cr hrs or 4 completions. This course is graded S/U. |

4999 | Research with Distinction                         | U 1 - 3 | Conducting and reporting research with distinction. Students are expected to present at the CFAES Undergraduate Research Forum and the Denman University Undergraduate Research Forum. Prereq: CPRH 3.00 or above, and GPA 3.00 or above in major, and permission of project supervisor. Repeatable to a maximum of 6 cr hrs or 3 completions. This course is graded S/U. |

4999H | Honors Research with Distinction                  | U 1 - 3 | Conducting and reporting research with distinction. Students are expected to present at the CFAES Undergraduate Research Forum and the Denman University Undergraduate Research Forum. Prereq: Honors standing, and FAES 4500.01H (5900H), and GPA 3.4 or above. Repeatable to a maximum of 6 cr hrs or 3 completions. This course is graded S/U. |

5097.03 | Chile Study Abroad Pre Departure                 | U 1     | This is a pre departure program for students enrolled in Agriculture & Agro Ecosystems in Chile. |

5100 | Advanced Cropping Systems                        | U 3     | Students will examine issues related to economic and environmental sustainability, legal and ethical responsibility, and production efficiency to help students transition to being professionals. Students will apply their knowledge regarding row and forage crop management to address production issues. Students will practice communication through enhanced analytical thinking experiences. Prereq: 3100, or Grad standing. |

5194 | Group Studies                                    | U 1 - 3 | Special group studies in the area of horticulture and crop science. |
5200 Advanced Horticultural Principles and Practices  U G 3
This course will prepare students for transition from student to professional by advancing their
mastery of edible and ornamental horticultural crop principles and practices as they are driven by
the interaction of cultivar genetics, plant physiology, and environmental influences; and by
exploring issues of economic and environmental sustainability and production efficiencies on a
global scale. Prereq: 3200, or Grad standing.

5306 Sustainable Vegetable Production Practicum: Planning, Growing and Marketing  U G 3
Provides students with an introduction to small-scale vegetable farm planning and management
through consideration of plant growth and production, farm design, farm management and operations, and produce marketing. Prereq: 5450 (450), or permission of instructor. Not open to students with credit for 613.

5401 Sustainable Landscape Design II  U G 4
Students synthesize the knowledge and skills learned in previous course work to achieve a
command of the skills necessary to practice Sustainable Landscape Design. The development of
a design package (construction documents, bidding, cost estimating, project management, marketing) is the focus. Professionalism and communication skills to work with clients and other professionals are stressed. Prereq: 2201, 2202, and 2401, Prereq or concur: 2340.01 or 2340.02.

5411 Domestication and Utilization of Agronomic Crops  U G 3
To gain a fundamental understanding of the historical development and scientific principles
underlying crop domestication and utilization, and how they impact current and future
development and utilization of selected grain, oilseed, and fiber crops. Prereq: 2201, 2201E, 2202, or 2202E, and Biology 1101, 1113, or 1113H. Not open to students with credit for 411.

5412 Agroecology of Grasslands and Prairies  U G 3
Growth characteristics, adaptation and utilization of grassland species for hay/silage, grazing, fuel and conservation. Prereq: 2201, 2201E, 2202, or 2202E, and Biology 1101, 1113, or 1113H; or Grad standing. Not open to students with credit for 412.

5422 Biology and Management of Weeds and Invasive Plants  U G 3
A study of weeds and invasive plant biology and ecology, and methods of vegetation management. Enrollment in the Masters in Plant Health Management Program required for online offering only. Prereq: 3100, 3200, or 3470, and Biology 1101, 1113, or 1113H; or Grad standing. Not open to students with credit for 422 or 461.

5450 Vegetable Crop Production and Physiology  U G 3
A physiological and ecological study of the principal vegetable crop species grown for
processing and fresh market use. The impacts of integrated crop management and other
production systems on vegetable yields and quality are also considered. Prereq: 2200 (200), 2201, 2202, 300 or MolGen 3300 (PlantBio 300), and Chem 1110 (101) or 1210 (121), and Biology 1101 (101), 1113 (113), or MolGen 1101 (PlantBio 101); or Grad standing. Not open to students with credit for 450 or 605.

5460 Fruit Crop Physiology and Production  U G 3
Sustainable fruit crop production principles/practices and their physiological bases as affected
by environmental and economic factors. Prereq: 2201 or 2202, and Biology 1101 or 1113; or Grad standing. Not open to students with credit for 460.

5521 Advanced Greenhouse Production  U G 3
Advanced considerations in the manipulation of the greenhouse environment to control
the growth and development of greenhouse crops. Prereq: 3521, Chem 1110 or 1210, and Biology 1101 or 1113; or Grad standing. Not open to students with credit for 521.

5601 Digital Portfolio Development  U G 1
This course will provide an overview of digital portfolio development of prior learning and/or on-going learning. Portfolios may be used to assess and compare learning with contemporary job requirements. Students will learn to select, categorize, and document their achievements and accomplishments for use in the review and assessment, relative to career readiness skills and co-curricular competencies.

5602 The Ecology of Agriculture  U G 3
Examines the key ecological and evolutionary processes at work in agricultural systems and the ways those processes interact with human systems. Prereq: ENR 3000 (300.01), and 5 sem hrs of HCS taken at the 3000-level or above; or Grad standing. Not open to students with credit for 602.

5621 Physiology of Cultivated Plants  U G 3
A study of basic physiological processes in plants and how they impact crop production and productivity. Online section requires enrollment in the Masters of Plant Health Management Program. Prereq: 3310, and Biology 1113 or 1113H, and Chem 1110 or 1210; or Grad standing. Not open to students with credit for 621.

5622 Biochemical Processes in Cultivated Plants  U G 3
A study of basic biochemical processes in crop plants and how they impact production, productivity, and quality. Prereq: Biology 1113 or 1113H, and Chem 2310 or 2510, and HCS 3310; or Grad standing.

5670 Golf Courses and the Environment  U G 2
Principles and practices of golf course design for sustainability. Prereq: 2270 (270), or Grad standing. Not open to students with credit for 670.

5797.01 Artistry, History and Horticulture of European Gardens  U G 3
Study of European gardens known for artistry, historical importance, and/or horticultural practices. Prereq: 5097.01, and 2.5 QPA or above. Repeatable to a maximum of 6 cr hrs.

5797.03 Agriculture and Agro-Ecosystems in Chile  U G 3
An eight-day study tour of agriculture industries and agroecosystems in Chile. Prereq: GPA 2.5 or above. Concur: 5097.03.

5797.04 Professional Golf Management: History of Golf Outside the United States - Scotland  U G 3
Provides undergraduate Professional Golf Management students the opportunity to learn about the rich history of golf in other countries and how the business and game of golf differs globally. Prereq: 5097.04, and 2.5 QPA or above. Not open to students with credit for 697.06.

5798 Agroecology Field Studies  U G 3
This course is a 2-week field study of New Mexico to demonstrate the factors that shape agriculture in the semi-arid southwestern United States and be exposed to Navajo and Pueblo agriculture. Students will learn about the biophysical, climatic, economic, and cultural drivers of agriculture by reading and discussing literature and by visiting farms, research centers, processing plants, and more. Prereq: 2201 or 2201E, and permission of instructor.

5801 Introduction to Experimental Design  U G 3
Introduction to experimental design, including selection and layout of plots, data analysis software, and data interpretation. Prereq: 2260 or Stat 1450, or equiv; or Grad standing.

5890 Turfgrass Seminar  U G 1
This course uses case studies and discussion to provide students with an appreciation of the process involved in solving turfgrass problems at the managerial level. Using real-life scenarios, students will learn to recognize problems, analyze problems, identify issues that need to be addressed to correct the problems, formulate a set of strategies for solving the problems, and more. Prereq: 4570, or Jr, Sr, or Grad standing.

7001 Graduate Student Professional Development  G 1
Introduction to the procedures, resources, and requirements needed to succeed as graduate Horticulture and Crop Science students and in subsequent career(s). This course is graded S/U.

7003.02 Agricultural Genomics: Principles and Applications  G 2
Reviews the principles of most genetic technologies, new developments in the field and
emphasize their application in agriculture. Prereq: MolGen 4500 or Biochem 5613 (613), or permission of instructor. Concur: PlntPth 7003.01. Not open to students with credit for 7003 (703) or PlntPth 7003 (703).

7004 Genome Analytics  G 4
The Genome Analytics course will facilitate a hands-on analytical and quantitative approach for graduate students to learn the basic pipelines for analysis of genomic sequences, focusing on incorporating these bioinformatics pipelines into their own research.

7193 Individual Studies  G 1 - 3
Selected topics not included in regular HCS courses. Prereq: Permission of instructor. This course is graded S/U.

7194 Group Studies  G 1 - 3
Special group studies in the area of horticulture and crop science.

7600 Metabolomics, Principles and Practice  G 3
Introduces students to the principles and practice of metabolomics. Metabolomics is the study of the totality of small molecules existing within a system. We will focus here on the application of metabolomics to plant, food, nutrition and health-related research, although concepts are applicable to other disciplines. Prereq: Permission of instructor. Cross-listed in BMI, FdsTe, and HumnNtr.

7625 Plant Breeding and Biotechnology  G 3
Introduction to the principles of plant breeding and biotechnology. Prereq: Undergraduate plant breeding or genetics course, or permission of instructor. Not open to students with credit for 625.

7761 Crop Secondary Products for Survival, Health and Wellbeing  G 3
The synthesis, metabolism and agricultural, industrial, medicinal or aesthetic uses of crop secondary products affecting our daily lives. Prereq: Chem 1110 (102).

7806 Methods in Horticulture and Crop Science  G 1 - 2
Instruction of a specific method used in the Horticulture and Crop Science professions. Repeatable to a maximum of 12 cr hrs or 6 completions.

7821 Environmental Physiology of Managed Plant Systems  G 3
An advanced study of the interaction of cultivated plants with their environment. Prereq: 5621. Not open to students with credit for 821.
256 Horticulture and Crop Science

7830 Phytochemicals in Human Health: Crops to the Clinic G 3
Covers the function and control of phytochemicals in plants, the function of phytochemicals in human health, delivery of phytochemicals through foods in the diet, strategies when designing studies examining foods for health, and policy and sustainability considerations. Prereq: Biochem 4511 (511) or 5613 (613), or equiv; or permission of instructor. Not open to students with credit for FdScTe 7810. Cross-listed in FdScTe, HumnNtr, BSGP, and PubHEpi.

7890 Seminar on HCS Topics G 1
Research seminar on varying topics in HCS. Repeatable to a maximum of 4 cr. This course is graded S/U.

7999 Graduate Research MS G 1 - 18
Research for thesis purposes for students pursuing a MS degree. MS thesis research in Horticulture and Crop Science may take place in laboratory, greenhouse, and/or field resources at The Ohio State University in Columbus, Wooster, and outlying branch farms. Prereq: MS Grad student standing in Horticulture and Crop Science, or permission of instructor. Repeatable. This course is graded S/U.

8825 Advanced Plant Breeding G 3
Advanced Plant Breeding examines theory and methods for improving plant varieties including genetics, breeding designs, tools and techniques, and marker-assisted selection. Sp Sem. Prereq: 7625 (625). Not open to students with credit for 825.

8830 Current Topics in Horticulture and Crop Science G 1
Readings from the current literature will be examined in detail for both technical and conceptual content. Repeatable to a maximum of 10 cr hrs.

8887 Experimental Design G 4
Intended to develop student's ability to use appropriate and robust statistical techniques of experimental design in research, with an emphasis on approaches for biological and agricultural sciences. Prereq: 5887, PrinPth 5550, Stat 5301, MoGen 5650, or AnimSci 7000; or permission of instructor.

8899 Graduate Research Pre-Candidacy PhD G 1 - 18
Research for dissertation purposes only. Graduate research in Horticulture and Crop Science may take place in laboratory, greenhouse, and/or field resources at The Ohio State University in Columbus, Wooster, and outlying branch farms. Prereq: PhD Grad student standing in Horticulture and Crop Science, or permission of instructor. Repeatable. This course is graded S/U.

8999 Graduate Research Post-Candidacy PhD G 1 - 18
Research for dissertation purposes only. Dissertation research in Horticulture and Crop Science may take place in laboratory, greenhouse, and/or field resources at The Ohio State University in Columbus, Wooster, and outlying branch farms. Prereq: PhD Grad student standing in Horticulture and Crop Science and completion of candidacy exam, or permission of instructor. Repeatable. This course is graded S/U.

Human Development And Family Science

2189 Introduction to Field Work U 4
Participation in community agency, learning roles and responsibilities, with increasing involvement in program development and evaluation. Department application must be filed one semester in advance. Prereq: 2210, and CPHR 2.5 or above, and permission of instructor. Not open to students with credit for 589.01 and 589.02.

2200 Family Development U 3
Dynamics of family interaction over the life cycle; emphasis on developmental, social, and cultural influences on the family experience. GE soc sci indivs and groups course.

2210 Helping Skills in Context U 3
The study of various strategies and techniques used to assess and work with individuals and families in the context of family service organizations. Prereq: 2200.

2239 Land-Grant Universities: Mission and Leadership U 3
This course provides students with the opportunity to learn about land-grant institutions and their place in the American higher education system, including evolving nature of the land-grant mission in 21st century America, as well as how higher education leaders are reconfiguring our nation's preeminent public institutions to meet the needs of the communities they were designed to serve. Cross-listed in ESHESA.

2350 Parenting U 3
Identification and examination of the theoretical approaches applicable to child rearing in families; emphasis on developing practical skills for working with parents and children. Prereq: Not open to students with credit for 665. GE soc sci indivs and groups course.

2367 American Family Issues U 3
Development of writing, presentation, and oral discussion skills while critically examining family and related community issues. Prereq: English 1110.01 (110.01), 1110.02 (110.02), or 1110.03 (110.03). Not open to students with credit for 367. GE writing and comm course: level 2.

2400 Life Span Human Development U 3
Survey of human development across the life span directed toward an applied understanding of the individual and forces that shape development. This course is available for EM credit. GE soc sci indivs and groups course.

2410 Child Development U 3
Study of the nature, nurture, and development of children from conception through the childhood years. GE soc sci indivs and groups course.

2420 Adolescence and Emerging Adult Development U 3
Current theory and research on individual development during the adolescent and emerging adulthood years.

2800 Promoting Early Language and Literacy in EC&D&E U 3
This EC&D&E course focuses on theories of language development, the sequence of speech and language development and differentiating between normal and atypical speech. Emphasis will also be placed on the teacher's role in facilitating communication and literacy skills, on planning and implementing appropriate language and literacy activities, and on selecting & using literature to enhance language.

2810 Developing Age Appropriate Curriculum for Infants and Toddlers U 3
This course is an overview of care giving for infants and toddlers in group settings. Developmentally appropriate programming for infants and toddlers is emphasized across developmental areas through routines, environment, and experiences with a focus on language and brain development. The role of staff and parent relationships is explored as is state rules for licensed child care centers.

2900 Methods in Human Ecology Research U 3
Introduction to the fundamental elements of human ecology research, using qualitative, quantitative, and historical perspectives.

3189.01 Field Work with Targeted Populations: Children U 1 - 3
Field Work for students who are interested in working with children. Prereq: 2410, and Jr or Sr standing; or permission of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions.

3189.02 Field Work with Targeted Populations: Adolescents U 1 - 3
Field Work for students who are interested in working with adolescents. Prereq: 2420, and Jr or Sr standing. Repeatable to a maximum of 6 cr hrs or 6 completions.

3189.06 Field Work with Targeted Populations: Children with Disabilities U 1 - 3
Field work for students who are interested in working with children with disabilities; promoting independent and productive inclusion in home, school, and community environments. Prereq: 2410, and Jr or Sr standing. Not open to students with credit for 689.02. Repeatable to a maximum of 6 cr hrs or 6 completions.

3193 Practicum in Human Development and Family Science U 1 - 3
Research
Provides students with opportunity to work individually with faculty member on research project. Arr. Prereq: 2900 or equiv, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

3200 Foundations of Family Science U 3
Examination of theories and perspectives of family development with an emphasis on the family systems perspective and application. Prereq: 2200.

3440 Human Sexuality U 3
Examination of the intellectual, physical, social, and emotional aspects of human sexuality. GE soc sci indivs and groups course.

3450 Managing and Supporting Behavior in Social Contexts U 3
Examines strategies to help promote adaptive behavior in home, school, and community contexts. Students will learn strategies for managing and preventing behavioral problems and develop an understanding of behavior management practices. Prereq: Socph, Jr, or Sr standing; or permission of instructor. Not open to students with credit for 461.

3620 Intervention and Prevention Practices: Development U 3
and Evaluation
Students will identify practices that have empirical support and focus on development, integration, and evaluation of intervention and prevention practices applied to teaching important skills that improve functional outcomes in everyday contexts. Prereq: Socph, Jr, or Sr standing, or permission of instructor.

3800 Professional Development U 1
The professional performance, role in society, position security, involvement in organizations, and continuing development. Students are encouraged to take this course early in the major.

Prereq: Not open to students with credit for 595.
4194  Group Studies U 1 - 3
Selected topics in human development and family science.
Prereq: Jr or Sr standing, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions.

4370  Families and Stress U 3
Examination of normative and developmental stressors and crises that impact on the family; implications for practitioners drawn from conceptual frameworks and recent research.
Prereq: 2200, or permission of instructor.

4640  Promoting Emotional Well-Being U 3
Explores the development of emotional competence and emotional problems in the family and larger socio-cultural context. Topics include foundations and antecedents of emotional development, understanding, regulation, and socialization.
Prereq: Soph, Jr, or Sr standing; or permission of instructor.

4998  Undergraduate Research in Human Development and Family Science
Undergraduate research in areas of study related to the unit and the instructor's research agenda.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

4998H  Undergraduate Honors Research in Human Development and Family Science
Undergraduate honors research in areas of study related to the unit and the instructor's research agenda.
Prereq: Honors standing, Jr or Sr standing, or permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

5200  Foundations of Couple and Family Therapy U G 3
Overview and development of key theories of couple and family therapy.
Prereq: Jr, Sr, or Grad standing, or by petition. Not open to students with credit for 650.

5340  Intimate Relationships U G 3
An examination of the individual, couple, and contextual factors that affect the development and maintenance of intimate relationships across the life course.
Prereq: 2400, or Grad standing. Not open to students with credit for 670.03.

5350  Families with Adolescents U G 3
This is an upper level advanced course that is designed to provide students with an understanding of theory, research, and application efforts targeting families with adolescents.
Prereq: 2200 or 2400, or equiv; or Grad standing.

5410  Infant-Toddler Development: Current Research and Controversies
Infant and toddler development during the first four years of life with special consideration of bases of support for provision of effective care.
Prereq: 2410 or equiv, and Jr or Sr standing.

5430  Adult Development and Aging U G 3
Examination of change and continuity in human development from young adulthood to very old age using a psycho-social-biological perspective.
Prereq: 2400 or 2420, or equiv, and/or standing. Not open to students with credit for 670.01.

5440  Human Sexuality in Context U G 3
Examination of issues in human sexuality across the lifespan in the context of peoples' lived experiences within families, communities, and society, using film, texts, and narratives.
Prereq: Jr standing or above, and 2400 or 2200 or equiv, or Sexuality Studies major or minor. Not open to students with credit for 370.

5890  Special Topics in Family Development U G 3
Review, interpretation, and evaluation of current literature and research in family development.
Prereq: 2400 or 2200, or equiv, and Jr or Sr standing. Not open to students with credit for 695.02.

6780  Research Seminar G 1
Expose graduate students to a wide variety of research projects and findings in the field of Human Development and Family Science through weekly seminars presented by various faculty within and outside the department.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

6782  Research Methods G 3
Overview of research methods and related conceptual issues relevant to study of human development and family science; creative approaches to research problems.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 760.

6890  Proseminar G 1
This 1-credit course exposes graduate students to the field of Human Development and Family Science and the current research, teaching and outreach interests of the existing HDFS faculty.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 701.03. This course is graded S/U.

6892  Professional Development Seminar G 1 - 3
Aids students in professional development. Topics include: setting goals in graduate school, creating a CV; choosing research projects, submission of articles for publication, grant writing, career planning, navigating the job market.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 15 cr hrs or 15 completions. This course is progress graded (S/U).

7189  Field Experience G 1 - 3
Supervised practice in couple and family assessment and intervention in an agency setting.
Prereq: Grad standing, or permissions of instructor. Repeatable to a maximum of 9 cr hrs or 9 completions. This course is progress graded (S/U).

7350  Adolescence and Emerging Adulthood G 3
Theoretical perspectives and empirical studies on adolescent development and emerging adulthood are covered. Focus will be on the reasons for this emerging life stage, recent research, contextual factors, and historical context/cohorts differences.
Prereq: Grad standing, or permission of instructor.

7500  Families, Systems, and Health G 3
A study of illness and its impact on individuals, couples, and family systems across the lifespan. Covered are common illnesses (especially chronic), family systems interventions, challenges, and collaborative models of care. A collaborative approach to interdisciplinary practice, intervention design, and research will be discussed, applied, and reinforced.
Prereq: Grad standing, or permission of instructor.

7570  Obesity, A Multidisciplinary Foundation G 2
This course examines the context, causes, and consequences of obesity in the United States today by examining trends in obesity and a description of the scope of the problem. Next, by examining the physiological, psychological, sociological and economic factors that contribute to the obesity problem. Finally by describing adverse health outcomes associated with obesity.
Cross-listed in PubHHP.

7765  Advanced Child Development G 3
Growth and development of children with emphasis on maturation patterns and individual differences.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 765.

7770  Professional and Ethical Issues in Couple and Family Therapy G 3
A preclinical introduction to the central issues and resources in professional development, including personal growth, legal responsibilities, regulation, ethics, and special areas of practice.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 770.

7780  Research Methods in Couple and Family Therapy G 3
Explore major design, measurement and analysis strategies for conducting and understanding couple and family therapy research.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 581.

7999  Thesis Research G 1 - 12
Research for masters thesis.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions. This course is progress graded (S/U).

8081  Introductory Seminar: Applied Developmental Science in Education
An introductory professional seminar for doctoral students seeking the Interdisciplinary PhD Specialization in Applied Developmental Science in Education (ADS-E).
Cross-listed in EduTL and EduSt.

8082  Capstone Seminar: Applied Developmental Science in Education
A capstone professional seminar for doctoral students enrolled in the Interdisciplinary PhD Specialization in Applied Developmental Science in Education (ADS-E).
Prereq: 5801 or EduTL 5801 or EduSt 5801. Cross-listed in EduTL and EduSt.

8189  Practicum in Couple and Family Therapy G 1 - 3
Supervised practice in couple and family assessment and intervention in the department's couple and family therapy clinic.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 27 cr hrs or 27 completions. This course is progress graded (S/U).

8189.01  Practicum in Research G 1 - 3
Participation in the research process under the supervision of a faculty member.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 581. This course is progress graded (S/U).

8189.02  Practicum in Teaching G 1 - 3
Supervised college teaching experience for department graduate students.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is progress graded (S/U).

8189.11  Pre Practicum in Couple and Family Therapy G 3
This course is an introduction to the practice of couple and family therapy for masters and Ph.D. students in the Couple and Family Therapy specialization. It will cover such topics as assessment and diagnosis, psychopharmacology, in session interventions, and ethical and legal issues that are commonly observed in couple and family therapy.
Practicum in Couple and Family Therapy, Masters G 1 - 9
This course is a practicum course for masters students assigned to see clients in the on-campus Couple and Family Therapy Clinic and/or at placements in the community. PreReq: 8189.11. Repeatable to a maximum of 9 cr hrs or 3 completions.

Practicum in Couple and Family Therapy, Masters, Placement G 1 - 6
The practicum course is designed to train Couple and Family Therapy Students in systemic assessment, diagnosis, and treatment planning in order to provide couple and family therapy to a variety of client presentations. Students in the masters program must obtain 500 hours of client contact, of those hours in relational therapies. Students are required to be supervised during those hours. PreReq: 8189.11 and 8189.12. Repeatable to a maximum of 6 cr hrs or 2 completions.

Practicum in Couple and Family Therapy, Doctoral G 1 - 3
This is a practicum course for doctoral students who are assigned to see clients at the on-campus Couple and Family Therapy Clinic and/or provide supervision to trainees at the clinic. This course is graded S/U.

The Ph.D. Job Market G 2
This 2-credit course examines issues related to the job market for Ph.D.s. Both academic and nonacademic jobs are discussed. Application, interviewing, and negotiating techniques are described. PreReq: Doctoral standing. This course is graded S/U.

Independent Studies for Doctoral Students G 1 - 3
Problems in various phases of human development chosen for individual study. PreReq: Grad standing, or permission of instructor. Repeatable to a maximum of 12 hrs or 12 completions. This course is progress graded (S/U).

Individuation G 3
Designed as an advanced adolescent development course. The major focus is on the individuation process discussed from several perspectives. PreReq: Grad standing, or permission of instructor. Not open to students with credit for 840.03.

Adolescence: Risk in Context G 3
Examines the ways that social relationships and contexts (family, peers, community, etc.) shape development, specifically risk and problem behavior during the adolescent period. PreReq: Grad standing, or permission of instructor. Not open to students with credit for 840.04.

Quantitative Methods Capstone Course G 3
This seminar is the capstone experience of the GIS in Quantitative Research Methods. Much of the work will be student-identified and student-led. The course will consist of work in: identification of new or emerging topics or software in quantitative methods; readings and discussion on advanced topics: student-led demonstrations or presentations; and GISQRM paper updates and progress reports. Students entering this course must have completed or nearly completed their GISQRM coursework. See the GISQRM website for details. Cross-listed in ESQRREM and VetPrev.

Theoretical Perspectives on the Family G 3
Provides an overview of theoretical perspectives used to study families and family change topics in HDFS from the perspective of psychology, sociology, economics, demography, anthropology, and others. PreReq: Grad standing, or permission of instructor.

General Systems Theory G 3
Doctoral level course designed to provide students with an introduction to foundational ideas concerning general systems theory as applied to children, family, schools, and communities. PreReq: Grad standing, or permission of instructor. Not open to students with credit for 824.

Theories of Human Development G 3
Examination of foundational theories of human development with an emphasis on evaluating, comparing and contrasting the major theories. PreReq: Doctoral standing, or permission of instructor. Not open to students with credit for 825.

Seminar in Couple and Family Therapy G 3
Seminar in Couple and Family Therapy. Topics to be announced. PreReq: Grad standing, or permission of instructor. Repeatable to a maximum of 12 cr hrs.

Seminar in Human Development and Family Science G 3
Seminar in Human Development and Family Science, topics to be announced. PreReq: Grad standing, or permission of instructor. Repeatable to a maximum of 15 cr hrs.

Family Systems Assessment G 3
A survey of issues and techniques used in assessment of families for purposes of research and practice, including issues and design for family therapy research. PreReq: Grad standing, or permission of instructor. Not open to students with credit for 870.

Family Therapy Theory I G 3
An emphasis on the theoretical orientation of the structural, strategic, MRI, and Milan approaches to family therapy. PreReq: Grad standing, or permission of instructor. Not open to students with credit for 874.

Family Therapy Theory II G 3
An emphasis on the theoretical orientation of the intergenerational, behavioral, experimental and solution-focused approaches to family therapy. PreReq: Grad standing, or permission of instructor. Not open to students with credit for 875.

Marital Therapy Theory G 3
An emphasis on theoretical approaches, intervention techniques, and basic issues or problems of application for couple therapy. PreReq: Grad standing, or permission of instructor. Not open to students with credit for 876.

Supervision of Couple and Family Therapy G 3
Preparation of Couple and Family Therapy doctoral students to provide supervision of therapy. PreReq: Grad standing, or permission of instructor. Not open to students with credit for 878.

Dissertation Research G 1 - 12
Research for thesis or dissertation purposes only. PreReq: Grad standing, or permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions. This course is graded S/U.

Individual Studies U 1 - 6
Problems in various phases of human nutrition chosen for Intermediate level undergraduate individual study. PreReq: Written permission of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

Group Studies U 1 - 3
Selected topics for intermediate undergraduate study in human nutrition. Repeatable to a maximum of 6 cr hrs or 6 completions.

Science of Human Nutrition U 3
Basic principles of biological science, emphasizing the interaction between nutrients and physiological (including cellular) processes. PreReq: Not open to students with credit for 210. GE nat sci bio course.

CAREERS IN NUTRITION U 1
Exploration of careers in nutrition/dietetics through self-assessment, employer presentations; professional readings; internship and job search strategies. PreReq: Not open to students with credit for 295.

Fundamentals of Nutrition U 3
Nutrient and energy needs of the human biological system throughout the life cycle including energy balance with consideration of socio-psychological factors. PreReq: Biology 1113 (113), or 1101 (101), or equiv; and Chem 1210, or 1610, or 1910H; and Chem 1220, or 1620, or 1920H, or 1250. Not open to students with credit for 310. This course is available for EM credit.

Fundamentals of Food U 3
Scientific principles of food components, of major food groups and their interactions, with reference to nutritional properties, food preparation, food chemistry, optimum quality, microbiological safety and preservation of nutrients. PreReq: 2210 (210) or 2316 (310), and premajor, major, or minor in the following: Human Nutrition, Animal Science, Medical Dietetics, or Family and Consumer Science Education. Not open to students with credit for 314.

Foodservice Sanitation and Safety U 1
Organization of a facility to ensure safe and sanitary foodservice program. Includes National Restaurant Association's ServSafe Sanitation Certification program and Ohio Department of Health Certification in Food Protection. PreReq: Not open to students with credit for 450.

Food in Different Cultures U 2
Food practices of selected peoples of the world with consideration of the existing social, cultural, and economic conditions. Class content through lecture, discussion, and guest speakers. PreReq: 2210 or 2310; and FCSEd major, Human Nutrition major, Human Nutrition pre-major, or Human Nutrition minor.

Global Nutrition Issues U 2
Topics in global nutrition with critical appraisal of research basis and alternative viewpoints. Current issues include research and evaluation, major global nutrition issues (obesity, food insecurity, malnutrition, bioengineering, vegetarianism). PreReq: 2310; or AnimSci 3130; or HumNut 2210, and major in FCSEd; or HumNut 2210, and minor in Human Nutrition.

Nutrition Across the Life Span U 3
Nutrition issues during major life stages from pre-pregnancy through the dying elderly. PreReq: 2210 or 2310.

Public Health Nutrition U 2
Review of evidence base for public health nutrition including examination of food assistance and education programs; Description of public health nutrition efforts; Investigation of practices aimed at empowering the public to choose healthy foods. PreReq: 2210 or 2310.

Research Methods in Nutrition U 1
Development of hypotheses and choosing appropriate methods to test them. Work with advisor to write Honors research proposal. PreReq: Honors standing.
Human Nutrition 259

3998 Undergraduate Research in Human Nutrition
Undergraduate research in areas of study related to human nutrition and the instructor's research agenda.
Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs or 12 completions. This course is graded S/U.

3998H Undergraduate Honors Research in Human Nutrition
Undergraduate honors research in areas of study related to human nutrition and the instructor's research agenda.
Prereq: Honors standing and written permission of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

4189 Professional Experience in Human Nutrition
Supervised pre-professional employment experience with approved biomedical or medical professional.
Prereq: Soph standing and HumNtr major. This course is graded S/U.

4193 Individual Studies
Problems in various phases of human nutrition chosen for advanced undergraduate individual study.
Prereq: Permission of instructor. Not open to students with 10 qtr cr hrs for HumNtr 593. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

4194 Group Studies
Selected topics for advanced undergraduate study in human nutrition.
Repeatable to a maximum of 6 cr hrs or 6 completions.

4504 Nutrition Education and Behavior Change
Contemporary theories and models of health education and behavior change related to individuals, groups and communities and applied to field of nutrition. Review of effective communication techniques with individuals and groups.
Prereq: 2310, and HumNtr major or minor, or MedDiet major, or HPNES major.

4596 Dietsetics Seminar
Advanced professional development issues in dietetics: Leadership, marketing, research, continuing education, licensure, and preparation for dietetic internship/graduate education.
Prereq: 2295, and 5r standing in full Dietetics major.

4609 Macronutrients
Application of biochemistry and physiology to the regulation of carbohydrate, lipid, and protein during fed, fasted and exercise states; nutrient digestion, absorption, metabolism, excretion, requirements, and interactions.
Prereq: C or above in 2310 (310) or AnimSci 3130 (330); and Biochem 2210 (211 and 212) and Chem 231 (2310), or Biochem 4511 (511), or MolBiol 3311 (311) and 3312 (312); and EEOB 2520 (232), or Physio 3101 (311) and 3102 (312), or 3200.

4610 Micronutrients and Phytochemicals
Application of biochemistry and physiology to understanding micronutrients, including structure, digestion, absorption, metabolism, excretion, requirements, sources, and interactions of vitamins, phytochemicals, water, electrolytes, and minerals.
Prereq: 4609 (610) and C or higher in 2310; and HumNtr, MedDiet, AnimSci, or HPNES major.

5611 Medical Nutrition Therapy I
The role of medical nutrition therapy in the treatment of established chronic diseases with emphasis on the biochemical and physiological rationale for dietary modifications.
Prereq: 4609, and Human Nutrition or Medical Dietetics major; or Grad standing. Prereq or concur: MedDiet 4900.

5612 Medical Nutrition Therapy II
The role of medical nutrition therapy in the treatment of established disease with emphasis on the biochemical and physiological rationale for dietary modifications.
Prereq: 5611 (611), and Human Nutrition or Medical Dietetics major; or Grad standing. Not open to students with credit for 612.

5622 Medical Nutrition Therapy I Lab
Laboratory and practical application of the nutrition care process through assessment, management and treatment of various disease states.
Concur: 5611, and enrollment in DPD.

5705 Nutrition and Physical Performance
Integration of nutrition, exercise physiology, and biochemistry. Use of nutrients as fuel, interaction between nutrients and exercise performance, assessment of energy expenditure and nutritional status, interactions among diet, exercise and health.
Prereq: 4609 (610). Not open to students with credit for 705.

6010 Motivational Interviewing for Behavioral Change
Students will gain knowledge and skills in promoting nutrition-related behavioral change. The spirit behind motivational interviewing and strategies for promoting change will be presented.
Prereq: Grad standing, or permission of instructor.

7193 Individual Studies
Problems in various phases of human nutrition chosen for intermediate level graduate individual study.
Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

7194 Group Studies
Selected topics for intermediate graduate study in human nutrition.
Prereq: Open to students who meet department's stated prerequisites. Repeatable to a maximum of 6 cr hrs or 6 completions.

7600 Metabolomics, Principles and Practice
This course aims to introduce students to the principles and practices of metabolomics with a focus on the application of metabolomics to plant, food, nutrition and health-related research.
Prereq: Permission of instructor. This course is available for EM credit. Cross-listed in BMI, FdScTe, and HCS.

7761 Macronutrient Metabolism
In-depth treatment of digestion, absorption, transport, and utilization of dietary carbohydrates and fat for energy production and fat deposition in humans and other higher animals.
Prereq: 2310 (310) or AnimSci 3130 (330), and Biochem 4511 (511). Not open to students with credit for 761 and 762, AnimSci 761 and 762, or FdScTe 761 and 762. Cross-listed in AnimSci.

7762 Vitamin and Mineral Metabolism
Biochemical functions, absorptions, transport, utilization, interrelationships and nutritional requirements of selective vitamins and minerals in higher vertebrates and humans.
Prereq: Credit in Biochem and Physiol. Not open to students with credit for AnimSci, FdScTe, or HumNtr 763. Cross-listed in AnimSci.

7789 Nutrition Research Ethics
Exploring critical aspects in conducting research, including ethical consideration, authorship, conflicts of interests, and intellectual property rights.

7790 Animal Models and Mechanistic Research Design
The course will provide fundamental principles in establishing effective research hypothesis, through student evaluation of primary literature and student interactions.

7791 Community and Clinical Nutrition Research Design
The course will provide fundamental principles in establishing effective research hypotheses and designs to answer specific research questions. A focus on research designs, specifically randomized controlled trials, commonly used in community-based studies and clinical trials will be employed.
Prereq: 7789 or AnimSci 7789.

7804 Advanced Community and International Nutrition
Current issues in community and international nutrition.
Prereq: 304 (704), or permission of instructor. Not open to students with credit for 804.

7806 Advanced Nutrition Education
Discussion of principles of nutrition education and behavior change target audience will be discussed. Course will focus on concepts and methods from related disciplines such as behavioral medicine, psychology, sociology, and education.
Prereq: Not open to students with credit for 806.

7830 Phytochemicals in Human Health: Crops to the Clinic
Covers the function and control of phytochemicals in plants, the function of phytochemicals in human health, delivery of phytochemicals through foods in the diet, strategies when designing studies examining foods for health, and policy and sustainability considerations.
Prereq: Biochem 4511 or 5613, or equiv; or permission of instructor. Not open to students with credit for FdScTe 7810. Cross-listed in FdScTe, HCS, BSGP, and PubHEpi.

7899 Oral Research Communication
Critical analysis of the scientific literature and demonstration of effective oral presentation skills tailored to the target audience with use of information technologies as needed.
Prereq: Grad standing. Cross-listed in AnimSci.

7999 Research; Thesis
Research for masters thesis.
Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

8193 Individual Studies
Problems in various phases of human nutrition chosen for advanced level graduate individual study.
Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

8194 Group Studies
Selected topics for advanced graduate study in human nutrition.
Repeatable to a maximum of 6 cr hrs or 6 completions.

8801 Macronutrients-Lipids and Energy Balance
Discussion of lipids as storage molecules used for energy and to modulate metabolism and influence energy balance conditions such as obesity, cachexia, weight loss and weight gain.
Prereq: 7761 (761), AnimSci 7761 (761), or FdScTe 761. Not open to students with credit for 830.1, AnimSci 830.1, or FdScTe 830.1. Cross-listed in AnimSci.
8802 Advanced Micronutrient Metabolism G 3
Comparative study of the regulation of micronutrient status and its influence on physiological and molecular events including nuclear receptor activity and transcription. Prereq: 7761 (761), AnimSci 7761 (761), or FdScTe 761. Not open to students with credit for 830.02, or AnimSci 830.02, or FdScTe 830.02. Cross-listed in AnimSci.

8833 Diet, Nutrition and Cancer G 3
Epidemiological, clinical and basic perspective of how diet and nutrition practices. Prereq: 7761 (761), AnimSci 7761 (761), or FdScTe 761. Not open to students with credit for 830.12, AnimSci 830.12, or FdScTe 830.12. Cross-listed in AnimSci.

8834 Comprehensive Approach to Food Safety G 2
A comprehensive overview of food safety challenges and solutions as experienced through the food chain from farm to consumers. Demonstration of food safety system from cellular aspects through public policy. Prereq: Microbio 509, or equiv. Not open to students with credit for 830.10, AnimSci 830.10, or FdScTe 830.10. Cross-listed in AnimSci.

8835 Grantsmanship G 1
Capstone course for the OSUN PhD program will train students on grantsmanship skills. Prereq: Grad standing. Cross-listed in AnimSci.

8836 Advanced Nutritional Genomics G 3
The primary goal of the course is to stimulate critical thinking and discussion among graduate students about current research findings in the areas of genomics, proteomics and metabolomics as they apply to studies in the nutritional sciences. Prereq: 7761 or AnimSci or FdScTe 7761, and HumNtr or AnimSci 7762. Cross-listed in AnimSci.

8888 OSUN Research Seminar G 1
Recent advances in nutrition science are presented by locally, nationally and internationally recognized scientists. Prereq: Grad standing. Repeatable to a maximum of 5 cr hrs. This course is graded S/U. Cross-listed in AnimSci.

8898 Graduate Research G 1 - 15
Graduate research in areas of study related to human nutrition and the instructor's research agenda. Prereq: Permission of Instructor. Repeatable. This course is graded S/U.

8999 Research: Dissertation G 1 - 15
Research for dissertation. Prereq: Permission of Instructor. Repeatable. This course is graded S/U.

Hungarian

1101 Elementary Hungarian I U 4
Introduction to Hungarian (Magyar); development of speaking, listening, reading, & writing skills in cultural context. Not open to native speakers through regular course enrollment or EM credit, or to students with 2+ years of high school study. Prereq: Not open to students with credit for Hungarian 101. This course is available for EM credit. GE for lang course. Fl. Admis Cond course.

Industrial and Systems Engineering

2040.01 Engineering Economics In-Person U 2
Economic analysis of engineering project alternatives. Cash flow modeling; time value of money; techniques for comparing project alternatives and making solid business recommendations; influence of financial accounting and cost accounting on cash flow models. Course uses MS Excel as primary business tool for modeling. Prereq: Soph standing in Engineering.

2194 Group Studies in Integrated Systems Engineering U 1 - 4
Special topics of general interest to students enrolled in Integrated Systems Engineering. Prereq: Permission of Instructor. Repeatable to a maximum of 8 cr hrs or 4 completions.

2400 Design of Work: Methods and Measurement U 2
Introduces students to tools and techniques used in work methods design and productivity improvement, including operation analysis, motion study, value engineering, predetermined time systems, time study, line balancing. Prereq: Soph standing, and enrollment in Industrial and Systems Engineering major or Engineering Physics major. Additional prereq for students enrolled in ISE major, a grade of C or above in English 1110, Math 2568, Stat 3470, and CSE 1222 or 1223 or 1224.

2500 Introduction to Manufacturing Engineering U 3
Fundamentals of common manufacturing processes, materials and tooling; relationship of product design to required processing sequences and steps, attributes of manufacturing systems. Prereq: Not open to students with credit for 350 or IndEng 311.

3194 Group Studies in Integrated Systems Engineering U 1 - 4
Special topics of general interest to students enrolled in Integrated Systems Engineering and related fields. Prereq: Permission of Instructor. Repeatable to a maximum of 8 cr hrs or 4 completions.

3200 Linear and Integer Programming U 3
Introduction to formulation, solution and analysis of continuous and discrete linear models to optimize the design of production and service systems and other engineering applications. Prereq: Math 2568 or 2714, and CSE 1222 or 1223 or Engr 1281.01H or 1281.02H, and enrollment in ISE or Engineering Physics major. Additional prereq for students enrolled in ISE major: ISE 2400 and CSE 2112.

3210 Nonlinear and Dynamic Optimization U 3
Introduction to nonlinear, dynamic, and network optimization models and solution techniques. Prereq: 3200 and MechEng 2850, and enrollment in ISE or Engineering Physics major.

3230 Systems Modeling and Optimization for Analytics U 3
Introduction to formulation, solution and analysis of continuous and discrete linear and nonlinear models to optimize systems using data-driven techniques. Prereq: Math 1152, 2568, and CSE 2231. Not open to ISE majors or to students with credit for 3260 or 3210.

3400 Production Planning and Facilities Design U 4
Introduction to production systems control: deterministic and stochastic, static and dynamic, single-stage and multi-stage inventory control, MRP systems, just-in-time, scheduling. Facility and machine location models, storage models (warehouse, AS/RS), simple layout models, systematic layout planning with applications in manufacturing, health care, service and logistics. Prereq: 3200, Stat 3470, and enrollment in ISE or Engineering Physics major. Additional prerequisite for students enrolled in ISE major: ISE 3600.

3500 Process Engineering for Machining Operations U 3
Introduction to the machines, tooling, set-ups, processing sequences, processing times, metrology, and safety issues for traditional and selected non-traditional metal cutting operations. Prereq: 2500, and enrollment in ISE major.

3600 Workplace Ergonomics: Analysis and Design of U 3
Physical Work Systems
Explores physiological and biomechanical principles used to analyze and design work systems (tasks, tools, equipment) so people can perform their jobs more effectively and safely. Prereq: 2040 and Stat 3470, and enrollment in ISE or Engineering Physics major; CPHR 3.0 or above for students not enrolled in ISE or Engineering Physics major. Prereq or concour: ISE 2400 and MechEng 2040 for students enrolled in ISE major.

3700 Cognitive Engineering Systems U 3
Human-centered design of cognitive tools and work systems. Human-computer interaction; decision making; human error; computer-supported distributed work; design of decision support systems. Prereq: Jn standing, and admission to the ISE or Eng. Phys. major. Not open to students with credit for 670, IndEng 570, or 670.  

3800 Engineering Project Management U 3
Project management for engineers, including project life cycle, planning, optimization models, management of change and scheduling and budgeting. Prereq: Jn standing, and major in ISE or Engineering Physics; or permission of ISE Academic Advisor. Not open to students with credit for 681.

4100 Stochastic Modeling and Simulation U 4
Methods for stochastic process and discrete event simulation modeling and system design and decision-making using simulation tools. Prereq: Stat 3470 or equiv, and enrollment in Industrial & Systems Engineering major; or permission of instructor. Not open to students with credit for 501.

4120 Quality and Reliability Engineering U 3
Techniques associated with the Total Quality Management and Lean Six Sigma as well as the foundations of reliability engineering. Prereq: Stat 3470, and enrollment in ISE major or EngPhys major. Not open to students with credit for 510 and 610, or IndEng 509 or 610.

4193 Individual Studies in Integrated Systems Engineering U 1 - 4
Special topics of general interest to undergraduate students in Integrated Systems Engineering. Prereq: Permission of instructor. Repeatable to a maximum of 8 cr hrs or 4 completions. This course is graded S/U.

4194 Group Studies in Integrated Systems Engineering U 1 - 4
Special topics of general interest to undergraduate students in Integrated Systems Engineering and related fields. Prereq: Permission of instructor. Repeatable to a maximum of 8 cr hrs or 4 completions.

4500 Manufacturing Process Engineering U 3
A thorough quantitative understanding of contemporary manufacturing processes; exposure to laboratory exercises and computer simulations in major manufacturing processes; design for manufacturing and assembly. Prereq: Option 1: MechEng 3670. Prereq or concour: MechEng 3503, Or Option 2: MechEng 2040 or 2040, and WdEng 4201 or MechEng 3500 or MatSciEn 3151; or permission of instructor.
4900 Capstone Design U 4
In-depth systems design project for industrial engineering. Exploration and selection of design alternatives; justification, recommendation, and presentation of problems and potential solutions. Prereq: 2040, 2400, 2500, 3200, 3210, 3400, 3600, 3700, 3800, 4100, and 4120, and enrollment in ISE major.

4998 Undergraduate Research in Integrated Systems Engineering U 1 - 4
Opportunity for undergraduates to conduct research in Integrated Systems Engineering. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 4 completions. This course is graded S/U.

4998H Honors Undergraduate Research in Integrated Systems Engineering U 1 - 4
Opportunity for undergraduate honors students to conduct research in Integrated Systems Engineering. Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 10 cr hrs or 4 completions. This course is graded S/U.

4999 Undergraduate Research for Thesis U 1 - 4
Opportunity for undergraduates to conduct research in Integrated Systems Engineering. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 4 completions.

4999H Honors Undergraduate Research for Thesis U 1 - 4
Opportunity for Honors undergraduates to conduct research in Integrated Systems Engineering. Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 10 cr hrs or 4 completions.

5043 Power Systems - Analysis and Operation U G 3
Power systems analysis and operations, including steady-state analysis, state estimation, and economic operation. Prereq: 3040, and ECE major; or Sr standing and ISE major; and Math 2268; or Grad standing in engineering or biological sciences or math and physical sciences. Cross-listed in ECE.

5110 Design of Engineering Experiments U G 3
Plan and analyze experiments relevant to system design. Also, students will learn regression and alternative approaches for on-hand data analysis. Prereq: 4210; or Stat 3470 or equiv, and Grad standing. Not open to students with credit for 610 or IndEng 610.

5193 Individual Studies in Integrated Systems Engineering U G 3
Special topics of general interest to graduate students in Integrated Systems Engineering. Prereq: Enrollment in department BS/MS program, and permission of instructor. Repeatable to a maximum of 8 cr hrs or 4 completions. This course is graded S/U.

5194 Group Studies in Integrated Systems Engineering U G 3
Special topics of general interest to undergraduate and graduate students in Integrated Systems Engineering and related fields. Prereq: Permission of instructor. Repeatable to a maximum of 8 cr hrs or 4 completions.

5200 Linear Optimization U G 3
Introduction to the linear optimization and applications. Topics include model formulation, solution methods, polyhedral and duality theory, sensitivity analysis, and software usage. Prereq: Math 2174, 2415, 2568, or 4568, and permission of instructor; or Grad standing. Not open to students with credit for 720 or IndEng 702.

5201 Theory of Linear Optimization U G 3
Introduction to linear optimization with an emphasis on theory. Topics include model formulation, solution methods, polyhedral and duality theory, sensitivity analysis, and software. Prereq: Math 2174, 2415, 2568, or 4568, and permission of instructor; or Grad standing. Not open to students with credit for 720 or IndEng 702.

5220 Complementarity Theory & Applications U G 3
Describes complementarity models and their solution techniques. It includes optimality conditions, equilibrium, mathematical programs with equilibrium constraints and equilibrium problems with equilibrium constraints. Prereq: 3200, or permission of instructor.

5225 Electricity Market Analytics U G 3
This course provides an analysis of decision-making tools for electricity markets, addressing the perspectives of the market operator, producers, retailers, and consumers. Prereq: 3200, or permission of instructor.

5230 Decomposition Techniques in Mathematical Programming U G 3
This course provides a description of decomposition techniques to solve large-scale optimization problems with decomposable structure. Partitioning techniques considered include Dantzig-Wolfe, Benders and Lagrangian decompositions. The considered techniques are illustrated using examples and case studies from the energy sector. Prereq: 3200 and 3210, or Grad standing.

Industrial and Systems Engineering 261

5350 Probabilistic Models and Methods in Operations U G 3
Research
Introduces probabilistic modeling techniques in operations research like Markov Chains, Poisson Processes, and Markov Decision Processes. Modeling, theory, and applications are discussed. Prereq: 3200 and Stat 3470; or permission of instructor. Not open to students with credit for 730.

5410 Quantitative Models in Production and Distribution Logistics U G 3
Introduction to quantitative models in supply chain management and logistics including: location analysis, inventory management, vehicle routing, coordination, risk pooling, reverse logistics. Prereq: 3210 or 3300. Not open to students with credit for 742.

5430 Warehouse and Facility Design U G 3
Broad exposure to facility planning and design, and distribution center layout and operations. Topics include current material handling equipment technology, and warehouse systems and operations. Prereq: Calculus, Linear Algebra, and Linear Programming. Not open to students with credit for 742.

5501 Fundamentals of Solid State Processing U G 3
Application of basic principles of heat transfer, tribology, and elastic/plastic deformation for metallic solids to manufacturing processes. Prereq: MechEng 2010, 2020, and 2040, or equiv, and Sr or Grad standing in Engineering.

5503 Manufacturing Processes and Simulation U G 3
An introduction to theory and simulation of different manufacturing processes. Learn to apply numerical methods to manufacturing processes such as machining, hot embossing, and injection molding. Prereq: Jr or Grad standing in Engineering, or permission of instructor.

5520 Industrial Automation U G 1½
Industrial Automation teaches the design, application, and computer logic and control of various mechanical, pneumatic, electrical, and electronic sensors and actuator devices for industrial systems. Prereq: 2500, or Grad standing in Engineering.

5525 Industrial Robotics U G 1½
Operating principles, selection, use of proximity and optical sensors; switches, relays, actuators; electric motors and controls; electro-pneumatic devices; integration of these for automated industrial systems. Prereq: 2500, or Grad standing in Engineering.

5540 Polymer Processing Fundamentals U G 3

5550 Principles of Precision Engineering U G 3

5555 Manufacturing Processes and Machine Tools U G 3
Focuses on machining processes: cutting, grinding and milling. It includes descriptive and analytical treatment of machining processes, equipment, computer control and integrated systems. Prereq: Jr, Sr, or Grad standing in Engineering, or permission of instructor. Not open to students with credit for 651.01 or IndEng 611.

5600 Principles of Occupational Biomechanics and Ergonomics U G 3
Introduction to anatomical, physiological, and biomechanical bases of physical ergonomics; workplace assessment techniques; biomechanical modeling; bioinstrumentation; preparation for advanced topics and research. Prereq: Grad standing. Not open to students with credit for 660.

5610 Ergonomics in the Product Design Process U G 3
Provides students with an understanding of where and how ergonomic principles are incorporated into the design and evaluation of consumer products. Prereq: 3600 and 3700 or equiv. Not open to students with credit for 769.

5620 Risk Assessment Tools for Occupational Musculoskeletal Disorders U G 3
Provides students with an understanding and working knowledge of tools used to assess risk of occupationally related musculoskeletal disorders. Prereq: 3600 or equiv. Not open to students with credit for 761.01 or 761.02.
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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>UG</th>
<th>Cr Hrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>5640</td>
<td>Occupational Safety: Analysis and Design of Work Environments</td>
<td>U G</td>
<td>3</td>
</tr>
<tr>
<td>5682.01</td>
<td>Fundamentals of Product Design Engineering</td>
<td>U G</td>
<td>3</td>
</tr>
<tr>
<td>5682.02</td>
<td>Product Design Engineering for Entrepreneurs</td>
<td>U G</td>
<td>3</td>
</tr>
<tr>
<td>5683</td>
<td>Fundamentals of Product Design Engineering Laboratory</td>
<td>U</td>
<td>1</td>
</tr>
<tr>
<td>5700</td>
<td>Introduction to Cognitive Systems Engineering</td>
<td>U G</td>
<td>3</td>
</tr>
<tr>
<td>5720</td>
<td>Human Systems Integration</td>
<td>U G</td>
<td>3</td>
</tr>
<tr>
<td>5740</td>
<td>Cognitive Engineering Systems: Human-Centered Automation</td>
<td>U G</td>
<td>3</td>
</tr>
<tr>
<td>5760</td>
<td>Visual Analytics and Sensemaking</td>
<td>U G</td>
<td>3</td>
</tr>
<tr>
<td>5770</td>
<td>Advanced Project Management</td>
<td>U G</td>
<td>3</td>
</tr>
<tr>
<td>5810</td>
<td>Lean Sigma Foundations</td>
<td>U G</td>
<td>4</td>
</tr>
<tr>
<td>5811</td>
<td>Lean Sigma Certification Project (Part I)</td>
<td>U G</td>
<td>3</td>
</tr>
<tr>
<td>5812</td>
<td>Lean Sigma Certification Project II</td>
<td>U G</td>
<td>3</td>
</tr>
<tr>
<td>5820</td>
<td>Systems Thinking in Engineering and Design</td>
<td>U G</td>
<td>3</td>
</tr>
<tr>
<td>5830</td>
<td>Decision Analysis</td>
<td>U G</td>
<td>3</td>
</tr>
<tr>
<td>5870</td>
<td>Resilience Engineering</td>
<td>U G</td>
<td>3</td>
</tr>
<tr>
<td>6020</td>
<td>Foundations of Data-Driven Sustainable Energy Systems</td>
<td>G</td>
<td>3</td>
</tr>
<tr>
<td>6021</td>
<td>Quality Improvement and Analytics</td>
<td>G</td>
<td>3</td>
</tr>
<tr>
<td>6022</td>
<td>Individual Studies in Integrated Systems Engineering</td>
<td>G</td>
<td>1-4</td>
</tr>
<tr>
<td>6040</td>
<td>Group Studies in Integrated Systems Engineering</td>
<td>G</td>
<td>1-4</td>
</tr>
<tr>
<td>6190</td>
<td>Stochastic Optimization</td>
<td>G</td>
<td>3</td>
</tr>
<tr>
<td>6200</td>
<td>Simulation for System Analytics and Decision-Making</td>
<td>G</td>
<td>3</td>
</tr>
<tr>
<td>6255</td>
<td>Advanced Metallic Materials and Processing</td>
<td>G</td>
<td>2</td>
</tr>
<tr>
<td>6280</td>
<td>Project Management for Engineers</td>
<td>G</td>
<td>3</td>
</tr>
<tr>
<td>6300</td>
<td>Research for Thesis in Industrial &amp; Systems Engineering</td>
<td>G</td>
<td>1-15</td>
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</tbody>
</table>

- Introduction to workplace hazards and controls for engineers and others who design workplaces, equipment, tools, and processes. Prereq: Enrolled in a major in the College of Engineering, or Construction Systems Management; or Grad standing. Not open to students with credit for 684 or 685, or to pre-majors.
- Lecture covering the fundamentals of the product design process, from concept creation to final implementation, including product architecture and design for manufacture and assembly. An optional, corresponding project-based lab course (ME/ISE 5883) offers practical application of this material. Only open to students enrolled in majors in the College of Engineering. Prereq: Jr, Sr, or Grad standing in the College of Engineering; or permission of instructor. Not open to students with credit for 5682 (682), 5682.02, 5650, IndEng 582, MechEng 5682 (682), and 5682.02. Cross-listed in MechEng.
- Fundamentals of the product design process, from concept creation to final implementation, including product architecture and design for manufacture and assembly. Prereq: Not open to students with credit for 5682, 5682.01, MechEng 5682, 5682.01, or 5914 (Abell - AU15, SP16, AU16). Cross-listed in MechEng.
- This course is an optional laboratory to go with ISE/ME 5682.01. This project-based lab gives students hands-on experience with the product design process directly in lecture. Students will work with real people to identify opportunities to create innovative, product-based solutions. Students will go through the design process from conducting user research all the way to constructing prototypes. Prereq or concour: 5682.01 or MechEng 5682.01, and enrollment in a major within the College of Engineering. Not open to students with credit for 5682, 5682.02, MechEng 5682, or 5682.02. Cross-listed in MechEng.
- Human-centered design of consumer products, web sites and complex sociotechnical systems. Topics include human-computer interaction and the design of decision support and distributed work systems. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 3700 (770).
- Covers how complex systems fail and the human contribution to success and failure by studying actual disasters in diverse fields. Prereq: Sr or Grad standing, or permission of instructor. Not open to students with credit for 875.
- Concepts and methods for considering the human as part of the design and operation of any system, especially large scale systems and enterprises. Prereq: Sr or Grad standing, or permission of instructor.
- Provides key concepts to make autonomous systems, robots, and artificially intelligent systems team players with responsible people. Prereq: Sr or Grad standing, or permission of instructor. Not open to students with credit for 771.01. Repeatable to a maximum of 8 cr hrs or 4 completions.
- Students learn about information visualization techniques that help people analyze massive amounts of digital data to combat overload and aid sensemaking with applications in retail and financial decision making, logistics, information systems, manufacturing, healthcare, energy and smart grids, cybersecurity and social networks. Prereq: Jr, Sr, or Grad standing. Not open to students with credit for 773.01. Repeatable to a maximum of 80 cr hrs or 40 completions.
- Evaluation of product and system design to assess usefulness and usability; advanced design concepts for consumer products, web sites, educational tools and information retrieval systems. Prereq: Sr or Grad standing, or permission of instructor. Not open to students with credit for 772.
- Advanced project management engineering techniques to implement and optimize project-driven change; communication and leadership strategies critical to successful optimization of a firm’s processes and systems. Prereq: 3900, or permission of instructor.
- Comprehensive foundation course for the Black Belt Level Certificate (not certification) that is required to complete Green and Black Belt Certification. Prereq: Stat 3470, and permission of instructor. Not open to students with credit for 685.
- Focuses on industry sponsored Lean Sigma DMAIC Certification Projects. Project Selection, Definition and Measure are covered in this course. Prereq: 5810, and Sr standing, and enrollment in Industrial and Systems Engineering, and permission of instructor. Not open to students with credit for 680.01.
- Focuses on industry sponsored Lean Sigma DMAIC Certification Projects. Improve and Control are the phases covered in this course. Prereq: 5810 and 5811, and permission of instructor. Not open to students with credit for 680.02. Cross-listed in MechEng.
- Concepts and heuristics in systems thinking and complex systems analysis and how these concepts apply to engineering and design projects. Prereq: Sr or Grad standing, or permission of instructor. Not open to students with credit for 688.
- Introduction to decision analysis, modern utility theory and risk modeling, Bayesian inference, value of information, multiattribute decision modeling, and application to engineering decisions under uncertainty. Prereq: 3210 and Stat 3470. Not open to students with credit for 684.
- Provides a comprehensive treatment of Resilience Engineering tools to measure, manage, and design complex systems to be resilient in the face of surprising disrupting events. Prereq: Sr or Grad standing, or permission of instructor.
- Introduction to issues impacting sustainable energy systems across technology, law and policy, business models, resilience, climate, geospatial, and decision sciences. Prereq: Enrollment in Data-Driven Sustainable Energy Systems Graduate Interdisciplinary Specialization, or permission of instructor. Not open to students with credit for ADEcon 6500, EnEng 6020, FABEng 6020, Geog 6020, or PubAfrs 6020. Cross-listed in ADEcon 6500, EnEng 6020, FABEng 6020, Geog 6020, and PubAfrs 6020.
- Learn skills and concepts associated with Quality Management, Lean Six Sigma, and related research with an awareness of recent research. Prereq: Grad standing in Engr. Not open to students with credit for 4120.
- Special topics of general interest to graduate students in Integrated Systems Engineering. Prereq: Permission of instructor. Repeatable to a maximum of 8 cr hrs or 4 completions. This course is graded S/U.
- Special topics of general interest to graduate students in Integrated Systems Engineering and related fields. Prereq: Permission of instructor. Repeatable to a maximum of 8 cr hrs or 4 completions.
- Examines the modeling, theory, and solution algorithms for stochastic optimization problems. Prereq: 5200, and Stat 3470 or ISE 7300; or permission of instructor. Prereq: Stat 3470 or equiv, and Calculus-based Probability. Not open to students with credit for 730.
- A graduate class in design, processing and simulation of advanced metallic materials including alloys (ferrous and non-ferrous) and metal matrix composites. Prereq: Grad standing in MatSciEn, WeldEng, MechEng, AeroEng, NuclEn, ISE; or permission of instructor. Not open to students with credit for MatSciEn 6757. Cross-listed in MatSciEn.
- Students learn how to collect data and perform input analysis, model systems using discrete-event simulation, and inform system design decision-making through defensible output analysis. Prereq: Stat 3470 or equiv, and Calculus-based Probability. Not open to students with credit for 730.
- Provides foundational and advanced project management education in an interactive online learning environment as part of the Master of Global Engineering Leadership program. Prereq: Enrollment in Master of Global Engineering Leadership program, and permission of instructor. Not open to students with credit for 3900.
- Introduction to market engineering concepts and applications to contemporary market design problems such as resource allocation, information aggregation, and decentralized control. Prereq: 3210 or equiv, and Econ 2001.01 or equiv, and Stat 3470 or equiv, and graduate standing; or permission of department. Not open to students with credit for 5840, or 603, or 703.
- Research for the Masters Thesis in Industrial and Systems Engineering. Prereq: Grad standing in the M.S. program in Industrial and Systems Engineering. Repeatable to a maximum of 50 cr hrs or 10 completions. This course is graded S/U.
7120 Advanced Quality Control and Improvement

Students learn techniques associated with Total Quality Management and Lean Sigma and additional advanced quality technology. These techniques facilitate measurements of system quality, data-driven system design, and system control/standardization.

Prereq: Grad standing, or permission of instructor. Not open to students with credit for 4120 (510), 510, IndEng 509, or 610.

7193 Individual Studies in Integrated Systems Engineering

Individual studies for advanced graduate students in Integrated Systems Engineering and related fields.

Prereq: Permission of instructor. Repeatable to a maximum of 8 cr hrs or 4 completions. This course is graded S/U.

7194 Group Studies in Integrated Systems Engineering

Special topics of general interest to advanced graduate students in Integrated Systems Engineering and related fields.

Prereq: Permission of instructor. Repeatable to a maximum of 8 cr hrs or 4 completions.

7200 Advanced Nonlinear Optimization

Unconstrained and constrained nonlinear optimization, covering applications, theory dealing with convexity, optimality conditions, duality, and algorithms.

Prereq: Calculus, linear algebra, computer programming, and an introductory optimization course, or permission of instructor. Not open to students with credit for both 620 and 821.

7202 Reinforcement Learning

Fundamentals of Markov decision processes and reinforcement learning algorithms.

Prereq: Grad standing in Engineering or Math. Cross-listed in ECE.

7210 Large Scale Optimization

Introduction to decomposition-coordination methods. Topics include cutting-stock problems, column and row generation methods, and stochastic programming.

Prereq: 5200. Not open to students with credit for 622.

7250 Operations Research Models and Methods

Examines many basic operations research models from network theory, integer programming, queuing theory, inventory theory and nonlinear programming. Algorithmic concepts are discussed.

Prereq: 5200. Not open to students with credit for 681.

7300 Stochastic Processes

Stochastic processes commonly used in Industrial and Systems Engineering, including renewal processes and continuous time Markov chains.

Prereq: 6300 or equiv. Not open to students with credit for 681.

7420 Sequencing and Scheduling

Survey of sequencing/scheduling problems encountered in management systems. Emphasis is given to those problems and solution methods found in the literature.

Prereq: 5200, Calculus, and Linear Algebra. Not open to students with credit for 841.

7510 Computational Analysis of Manufacturing Processes

This course is designed to teach graduate students about constitutive models used for numerical simulation of the inelastic behavior of bulk and sheet materials.

Prereq: Grad standing in ISE, or MechEng, or MatSciEn; and knowledge using commercial math software (Matlab, etc.), or ability to write simple codes with Fortran, C++, etc.; and knowledge using commercial FEA code (e.g. ABAOUS, LS-Dyna, PAM STAMP, ANSYS, DEFORM, etc.). Prereq: or concurs MechEng 7100, or equiv.

7610 Advanced Topics in Biomechanics and Musculoskeletal Disorders: Spine Biomechanics

Advanced readings course of papers on occupational epidemiology, physiology, work-related musculoskeletal disorders, pathophysiology, biomechanics, anthropometry, electromyography, imaging, and modeling as related to spine biomechanics.

Prereq: 5600 (860), or permission of instructor. Repeatable to a maximum of 9 cr hrs.

7615 Biomechanics Research Practicum: Experience in Spine Biomechanics

Builds upon theoretical information developed in ISE 7610. Provides link between theory and laboratory measurement in assessment of biomechanical issues for occupational low back disorder.

Prereq: 7610 or 7620 or 7630 or permission of instructor. Repeatable to a maximum of 9 cr hrs.

7620 Advanced Topics in Biomechanics and Musculoskeletal Disorders: Upper Extremity Biomechanics

Advanced readings course of papers on occupational epidemiology, physiology, work-related musculoskeletal disorders, pathophysiology, biomechanics, anthropometry, electromyography, imaging, and modeling as related to upper extremity biomechanics.

Prereq: 5600 (860), or permission of instructor. Repeatable to a maximum of 9 cr hrs.

7625 Biomechanics Research Practicum: Experience in Upper Extremity Biomechanics

Builds upon theoretical information developed in ISE 7620. Provides link between theory and laboratory measurement in assessment of biomechanical issues for occupational upper extremity disorders.

Prereq: 7610 or 7620 or 7630 or permission of instructor. Repeatable to a maximum of 9 cr hrs.

7700 Cognitive Systems Engineering: Advanced Topics

Seminar on emerging themes about human-machine systems and how these relate to current societal issues.

Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs.

7720 Cognitive Systems Engineering: Models and Methods

Covers models of human-machine cognitive systems and methods to study of human-machine cognitive systems in complex work settings.

Prereq: Grad standing. Repeatable to a maximum of 9 cr hrs.

7882 Interdepartmental Seminar for MBLE program

Seminar of general interest to students in the MBLE program, Integrated Systems Engineering, and related fields.

Prereq: Enrollment in the MBLE program, or permission of instructor. Repeatable to a maximum of 8 or 4 or 4 completions.

8194 Group Studies in Integrated Systems Engineering

Special topics of general interest to doctoral students in engineering and related fields.

Prereq: Permission of instructor. Repeatable to a maximum of 8 cr hrs or 4 completions.

8299 Special Topics in Optimization

Selected topics in optimization, of special interest to advanced graduate students in Industrial and Systems Engineering and related fields.

Repeatable to a maximum of 16 cr hrs or 4 completions.

8850 Practice in Operations Research

Application of Operations Research methods in manufacturing, financial, governmental, educational, and service organizations. Students work on actual problems of a sponsoring organization and present oral and written reports.

Prereq: 861. Not open to students with credit for 885. Repeatable to a maximum of 6 or 12 cr hrs.

8998 Research in Integrated Systems Engineering

Opportunity to conduct research in Integrated Systems Engineering.

Prereq: Permission of instructor. Repeatable to a maximum of 50 cr hrs or 10 completions. This course is graded S/U.

8999 Research in Integrated Systems Engineering for Dissertation

Opportunity to conduct dissertation research in Integrated Systems Engineering.

Prereq: Permission of instructor. Repeatable to a maximum of 50 cr hrs or 10 completions. This course is graded S/U.

Internal Medicine

4998 Undergraduate Research Independent Study Course

To gain laboratory research experience and knowledge of the cellular, molecular, and immune biology principles fundamental to gastrointestinal research and relate these principles to the normal and diseased gastrointestinal system.

Prereq: Permission of instructor. This course is graded S/U.

4999 Undergraduate Research Independent Study Course

Research under the direction of a department of Internal Medicine Faculty member.

Prereq: Permission of instructor. This course is graded S/U.

7000 Foundation in Medicine I

Normal human systems and pathophysiology needed for the practice of genetic counseling and working with a healthcare team. This course will cover cell biology, tumor biology, metabolism, musculoskeletal, skin, reproductive, and cardiovascular systems. One hour a week of course will include a practice or case-based learning approach in alignment with content delivered in IntMed 7020 & 7040.

Repeatable to a maximum of 6 or 12 cr hrs.

7010 Foundations in Medicine II

Continuation of Fin Med 1. Normal human systems & pathophysiology for the practice of genetic counseling and working with a healthcare team. Course will cover cell biology, tumor biology, metabolism, musculoskeletal, skin, reproductive and cardiovascular systems. 1 hr/week of course will include a practice or case-based learning approach which will be in alignment with content delivered in IntMed 7030.

Prereq: 7000.
7020 Foundations in Genetics I  
G 3

Covers etiology, natural history, and treatment of genetic disorders needed for the practice of genetic counseling and working with a healthcare team. One hour a week of this course will include a practice based or case-based learning approach which will be in alignment with the content delivered in alignment with the content delivered in IntMed 7000.

7030 Foundations in Genetics II  
G 3

Continuation of Fdn Gen I. It will cover etiology, natural history, and treatment of genetic disorders needed for the practice of genetic counseling and working with a healthcare team. One hour a week of this course will include a practice based or case-based learning approach which will be in alignment with the content delivered in alignment with the content delivered in IntMed 7010.

7040 Foundations in Genetic Counseling I  
G 2

Provides a framework for the evolution and models of genetic counseling practice. An introduction to the fundamental skills, including pedigree taking and analysis, case preparation, obtaining medical and developmental histories, and interview techniques, necessary to practice will be provided.

7050 Foundations in Genetic Counseling II  
G 2

Continuation of Fdn GenCoun I provides a framework for the evolution and models of genetic counseling practice. An introduction to the fundamental skills, including pedigree taking and analysis, case preparation, obtaining medical and developmental histories, and interview techniques, necessary to practice will be provided. 
Prereq: 7040.

7080 Advanced Genetic Counseling I  
G 3

Explore psychological impact of genetic conditions on the individual & family; review and application of counseling theory & interview techniques in GC practice. Role-play, case discussion, and interactions with consumers of genetic services will be utilized to achieve the course goals and learning objectives.

7090 Advanced Genetic Counseling II  
G 3

Advanced genetic counseling practice with attention to ethical, legal, social issues. Sessions on professional development topics, such as CV development, employment interview preparation, involvement in professional organizations, and advocacy roles will be addressed. Role-play, case discussion, and interactions with consumers of genetic services will be utilized to achieve goals & objectives.
Prereq: 7080.

7100.01 Advanced Clinical Skills: Reproductive Counseling  
G 1

Students will gain skills needed to provide reproductive genetic counseling. Aspects of discipline explored in the context of case preparation, med and fam history analysis, risk assess and counseling, diff diag, offering appropriate testing options, interpreting results, explaining complex genetics concepts to patients, creating visual aids for counseling, and psychosocial assessment.

7100.02 Advanced Clinical Skills: Cardiogenetic Counseling  
G 1

Students will focus on the skills needed to provide adult genetic counseling services (cardiogenetics, neurogenetics, and medical genetics). Aspects of discipline explored in the context of case preparation, med and fam history analysis, risk assess and counseling, diff diag, offering appropriate testing options, interpreting results, explaining complex genetics concepts to patients, creating visual aids for counseling, and psychosocial assessment & counseling.

7100.03 Advanced Clinical Skills: Pediatric Counseling  
G 1

Students will gain skills needed to provide pediatric genetic counseling. Aspects of discipline explored in context of case prep, med and fam hist, analysis, risk assess, and counseling, differential diagnosis, offering appropriate testing options, interpreting results, explaining complex genetics concepts to patients, creating visual aids for counseling, and psychosocial assessment & counseling.

7100.04 Advanced Clinical Skills: Cancer Counseling  
G 1

Students will gain skills needed to provide cancer genetic counseling. Aspects of discipline explored in context of case prep, med and fam hist, analysis, risk assess, and counseling, differential diagnosis, offering appropriate testing options, interpreting results, explaining complex genetics concepts to patients, creating visual aids for counseling, and psychosocial assessment & counseling.

7189.01 Clinical Practicum I  
G 3

Students will observe and be introduced to content, skills, and resources utilized in genetic testing laboratories and counseling. Students will be placed in various different genetic testing laboratories and participate in laboratory activities to understand the techniques used in the laboratory setting. Students will participate in a clinical placement in a designated clinic for seven weeks.
This course is graded S/U.

7189.02 Clinical Practicum II  
G 1½

Students will observe and begin to participate in clinical care. Placements will be 1-2 days per week.
Prereq: 7189.01. This course is graded S/U.

7189.03 Clinical Practicum III  
G 1½

Students will gain practical experience by providing genetic counseling services in a clinical placement 2-3 days per week. They will apply content learned in other courses and will work to achieve goals based on Practiced Based Competencies determined by the American Board of Genetic Counseling.
This course is graded S/U.

7189.04 Summer Clinical Practicum IV  
G 5

Students will gain practical experience by providing genetic counseling services in a five day a week, six week long clinical placement. They will apply content learned in other courses and will work to achieve comprehensive cases towards their ABGC clinical log book.
This course is graded S/U.

7189.05 Clinical Practicum V  
G 5

Students will gain practical experience by providing genetic counseling services in a five day a week, six week long clinical placement. They will apply content learned in other courses and will work to achieve comprehensive cases towards their ABGC clinical log book.
This course is graded S/U.

7189.06 Clinical Practicum VI  
G 2

Students will participate in clinical care. Placements will be 2-3 days per week.
This course is graded S/U.

7189.07 Clinical Practicum VII  
G 2

Students will participate in clinical care. Placements will be 2-3 days per week.
This course is graded S/U.

7189.08 Clinical Practicum VIII  
G 2

Students will observe and begin to participate in clinical care. Placements will be 2-3 days per week.
This course is graded S/U.

7189.09 Clinical Practicum IX  
G 2

Students will observe and begin to participate in clinical care. Placements will be 2-3 days per week.
This course is graded S/U.

7193.01 Individual Studies: Allergy/Immunology  
G 1 - 18

All months, 1 or more months to be elected. Research on a minor problem under faculty supervision in the following specialties of medicine: Allergy/Immunology.
Prereq: Permission of instructor. Repeatable. This course is graded S/U.

7193.02 Individual Studies: Cardiology  
G 1 - 18

All months, one or more months to be elected. Research on a minor problem under faculty supervision in the following specialties of medicine: Cardiology.
Prereq: Permission of instructor. Repeatable. This course is graded S/U.

7193.04 Individual Studies: Endocrinology  
G 1 - 18

All months, 1 or more months to be elected. Research on a focused problem under faculty supervision in the following specialties of medicine: Endocrinology.
Prereq: Permission of instructor. Repeatable. This course is graded S/U.

7193.05 Individual Studies: Gastroenterology  
G 1 - 18

All months, 1 or more months to be elected. Research on a focused problem under faculty supervision in the following specialties of medicine: Gastroenterology.
Prereq: Permission of instructor. Repeatable. This course is graded S/U.

7193.07 Individual Studies: Hematology  
G 1 - 18

All months, one or more months to be elected. Research on a focused problem under faculty supervision in the following specialties of medicine: Hematology.
Prereq: Permission of instructor. Repeatable. This course is graded S/U.

7193.09 Individual Studies: Pulmonary Diseases/Allergy/Critical Care and Sleep Medicine  
G 1 - 4

All months, 1 or more months to be elected. Research on a minor problem under faculty supervision in the following specialties of medicine: Pulmonary Diseases (PACCS).
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

7193.10 Individual Studies: Renal Disease  
G 1 - 18

All months, 1 or more months to be elected. Research on a focused problem under faculty supervision in the following specialties of medicine: Renal Diseases.
Prereq: Permission of instructor. Repeatable. This course is graded S/U.

7193.11 Individual Studies: Rheumatology  
G 1 - 18

All months, one or more months to be elected. Research on a focused problem under faculty supervision in the following specialty of medicine: Rheumatology.
Prereq: Permission of instructor. Repeatable. This course is graded S/U.

7300 Public Health Genetics  
G 1

Introduction to the complex issues that exist when integrating genetic technology and information into public health. Basic public health concepts, the history of public health genetics and programs will be covered. Examine the integration of genetic information into public health policy, assess public access to genetic services and information and consider ways in which genetic counselors disseminate genetic information and influence health behavior.
Research Methods

Develop skills to conduct genetic research studies; including choosing research mentors, writing human research protocols, obtaining informed consent, developing research projects, study design, the scientific method, the basics in obtaining research funding, and presentation of research in the form of abstracts and posters.

Genetic Counseling Seminar Series I

Discussion of pertinent literature, research problems, and clinical cases in various specialties with an emphasis on the application to genetic counseling research and clinical services. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

Genetic Counseling Seminar Series II

Discussion of pertinent literature, research problems, and clinical cases in various specialties with an emphasis on the application to genetic counseling research and clinical services. This course is graded S/U.

Thesis I

Students will implement their IRB-approved graduate level research project developed in IntMed 7998 under the supervision of a thesis advisory committee. Prereq: 7998. This course is graded S/U.

Thesis II

Students will implement IRB approved graduate level research project developed in IntMed 7998. Prereq: 7998. This course is graded S/U.

Thesis III

Students complete data collection and data analysis. Manuscript will be prepared and reviewed by thesis committee. This course is graded S/U.

Thesis IV

Students complete manuscript for approval by thesis committee and oral defense is scheduled. This course is graded S/U.

The Business of Genetics

Explore the strategic planning and program development aspects of clinical genetics services and reinforce the communication, administration and analytical skills developed in other areas of coursework. Specific areas: making a business plan, marketing and public relations, government relations, credentialing and licensure will be addressed.

Current Technologies

Through clinical cases, laboratory reports, and in-class exercises, we will investigate the techniques used in clinical diagnostic testing and screening to identify alterations in the genome and the bioinformatics resources used to interpret them.

Research

Research for thesis or dissertation purposes only. Repeatable to a maximum of 25 cr hrs or 25 completions. This course is graded S/U.

Introduction to China and Japan

Multidisciplinary survey of contemporary Asian civilizations: their geographical and racial backgrounds, historical and cultural heritages, social organizations, economic and political problems and international relations. Prereq: Not open to students with credit for 235. GE soc sci orgs and polities and diversity global studies course.

Introduction to Latin America

Interdepartmental survey of Latin American societies, anthropology, economics, history, literature, geography, and agriculture. Prereq: Not open to students with credit for 240. GE soc sci human, nat, and econ resources and diversity global studies course.

Group Studies

Groups of students are offered the opportunity to pursue the interdepartmental study of special topics. Prereq: Permission of instructor. Not open to students with 15 qtr cr hrs of 294. Repeatable to a maximum of 9 cr hrs or 9 completions.

Introduction to the Modern Middle East

Interdepartmental survey of the land, people, history, politics, religions, philosophy, social institutions, economic development, literature, and the arts. Prereq: Not open to students with credit for 245. GE soc sci orgs and polities and diversity global studies course.

Russia: From Communism to Capitalism

Survey of the birth, growth, and death of the communist Soviet Union and of the cultural, social, economic, and political trajectory of its successor, Russia. Prereq: Not open to students with credit for 230 or 2250H (230H). GE soc sci orgs and polities and diversity global studies course.

Introduction to Development Studies

Examines theories of political economy and development, as well as the historical geography of global capitalism and contemporary issues in international economic development. Prereq: Not open to students with credit for 215. GE soc sci human, nat, and econ resources and diversity global studies.

Feast or Famine: the Global Business of Food

Global and regional trends in food consumption and production are surveyed. Trade, technological change, and other responses to food scarcity are analyzed. Prereq: Not open to students with credit for 2580 (280) or AEDEcon 2580 (280) or 335. GE soc sci human, nat, and econ resources and diversity global studies course. Cross-listed in AEDEcon 2580.

Study Abroad: Contemporary Uganda

Enhancing the study of the history, culture, geography and society of Uganda by visiting the country. GE education abroad course.

Introduction to Peace Studies

The meanings of peace and peacelessness in today's world, varied approaches to peace, contributions of many disciplines and professionals, and the significance of peoples' movements. Prereq: Not open to students with credit for 201. GE soc sci orgs and polities and diversity global studies course.

Introduction to Western Europe

Presents an introductory overview of the historical background to modern Western Europe. It surveys the development of society & politics, as well as the evolution of art, architecture & music. Prereq: Not open to students with credit for 210. GE historical study and soc sci human, nat, and econ resources and diversity global studies course.

The Analysis and Display of Data

Introduction to the analysis of data. Topics include sampling, data collection, probability, inference, random variables, display of data, correlation, and analysis of variance. This course does not count toward a course elective for Econ majors. Prereq: Not open to students with credit for Econ 3400, 4400, 5410, 5420, Stat 1430, 1450, 2450 or AEDEcon 2005. GE data arly course. Cross-listed in Econ.

Human Rights: An Introduction

Provides an interdisciplinary introduction to the conceptual history as well as the practice of human rights. It traces the evolution of the idea of human rights, its adoption in international and domestic covenants, its role in domestic and international political disputes and its (non-) adoption by governments and civil society. Its essentially contested nature is also discussed.

The City and Culture

Introduction to the comparative and cross-cultural study of cities, urban culture, and urbanism. Prereq: One course in CompStd or IntStd, or permission of instructor. Not open to students with credit for 4661 (531) or CompStd 4661 (531) or CompStd 3661. Cross-listed in CompStd.

Introduction to Intelligence

Comprehensive introduction to the gathering, analysis, and use of military and political intelligence in a number of countries. Prereq: Not open to students with credit for 350.

Introduction to Homeland Security

Comprehensive overview of U.S. homeland security. Threats from natural disasters, terrorism, and other domestic and external sources will be studied, as well programs and technologies involved in disaster prevention and response. Prereq: Soph standing or higher, or permission of instructor. Not open to students with credit for 350.

Herding Cyber Cats: Information Security Management

This hands on course will focus on information security governance tools and processes. Students will learn the basic structures and activities used by Information Security professionals to manage information security and cyber risks which threaten us as individuals and organizations. Prereq: Soph standing or above, or permission of instructor.

Four week Global May Programs

Course deals with global issues from the perspective of both the host country and the US. Repeatable to a maximum of 2 cr hrs.

Introduction to Globalization

Analysis of globalization in its various aspects, economic, political, environmental and technological, as well as of its extent and desirability. Prereq: Soph standing or above, or permission of instructor. Not open to students with credit for 356. GE soc sci indevs and groups and diversity global studies course.
266 International Studies

4195 Selected Problems in International Studies U 3
Class discussions, with several guest speakers, informal conferences, and a reading and research program arranged to meet the special needs of those enrolled. Repeatable to a maximum of 9 cr. hrs.

4242 Incomplete Democracies: the (Un)Rule of Law in Latin America U 3
Explores various forms of violence including electoral violence and political assassination, organized crime, police brutality, and other human rights abuses in Latin America. Prereq: Soph standing or above. Not open to students with credit for 542 or PolSci 4242. Cross-listed in PolSci 4242.

4251 Organized Crime and Corruption in Contemporary Europe U 3
Organized crime and corruption in Post-Communist Europe. Trafficking in drugs, weapons, organs, people and nuclear materials will be explored. Prereq: Soph standing or higher, or permission of instructor. Not open to students with credit for 533.

4320 Energy, the Environment, and the Economy U 3
Examines the economic implications of climate change and climate change policies for society, including discussion of major state, federal, and international legislation. Prereq: AEDEcon 2001 (200) or Econ 2001 (200). Not open to students with credit for 565, 4320E, or AEDEcon 4320 (565). Cross-listed in AEDEcon.

4320E Energy, the Environment, and the Economy U 3
Understand the role of energy in the economy and the environment. Explore the economics of clean, renewable energy, and understand the different policies for pollution control. Prereq: AEDEcon 2001 (200), or Econ 2001.01, 2001.02 or 2001.03 (200). Not open to students with credit for 4320 (565), AEDEcon 4320 (565) or 4320E. Cross-listed in AEDEcon.

4451 The Immigration Controversy through Film U 3
Examines the controversial phenomenon of immigration through the medium of film. Throughout the semester, we will examine the politics of migration through scholarly materials focusing on concepts like globalization, citizenship, and identity in order and delve into the latest policy developments in the realm of immigration regulation and border enforcement.

4515 Ethnicity, Development, and the State in Sub-Saharan Africa U 3
Takes a theoretical and comparative historical approach to analyzing problems of development and ethnic conflict in Sub-Saharan Africa. Prereq: Soph standing or above. Not open to students with credit for 515 or AFAm/AS 4515 (515). Cross-listed in AFAm/AS 4515 (515).

4532 Food Security and Globalization U 3
Examination of the causes and solutions for food insecurity. Global and local factors that affect access to food are also considered. Prereq: AEDEcon 2001 (200) or Econ 2001 (200); or permission of instructor. Not open to students with credit for 434 or 532; or AEDEcon 4532 (532) or 434. Cross-listed in AEDEcon 4532.

4534 Comparative Challenges to Economic Development: Sub-Saharan Africa, Latin America, and China U 3
An introductory survey course of issues shaping economic development in Sub-Saharan Africa, Latin America, and China, such as: population growth, agricultural development, industrialization, trade, structural adjustment, and environmental issues. Prereq: AEDEcon 2001 (200), or 2001H (200H), or Econ 2001 (200), or 2001H (200H). Not open to students with credit for 4536 (536), or 4538 (538), or 4539 (539), or AEDEcon 4534, or 4536 (536), or 4538 (538), or 4539 (539). Cross-listed in AEDEcon.

4535 International Economic Development U 3

4537 Middle Eastern Economic Development U 3
Introduction to current economic issues facing Middle Eastern countries, and the similarities and differences in their growth, inflation, unemployment, fiscal and monetary policy, imports, exports, foreign debt and exchange rate policies. Prereq: AEDEcon 2001 (200), or Econ 2001 (200) and 2002 (201), or equiv. Not open to students with credit for 437, 537, Econ 4537 (537), AEDEcon 4537 (537), or 437. Cross-listed in AEDEcon and Econ.

4540 International Commerce and the World Economy U 3
Application of trade theory and policies to world trade that impacts global business. Prereq: AEDEcon 2001 (200), 201H (200H), Econ 2001 (200), or 201H (200H), or permission of instructor. Not open to students with credit for 540 or AEDEcon 4540 (540). Cross-listed in AEDEcon.

4550 Bioterrorism: An Overview U 3
A broad awareness course on the bioterrorism threat to our food supply, crops, animal and public health, and bioterrorist organizations. Prereq: Jr or Sr standing. Not open to students with credit for 455 or PlntPth 4550 (455). Cross-listed in PlntPth.

4560 Cooperation and Conflict in the Global Economy U 3
The economic, social, and political bases for, and responses to, increasing global economic integration. Prereq: Econ 2001 (200) and 2002 (201), or 400, or equiv. Not open to students with credit for 556 or Econ 4560 (556). Cross-listed in Econ.

4597.01 Food, Population, and the Environment U 3
Issues related to world-wide population increases, food production, and associated environmental stress; policy options for lessening these concerns, especially in low-income countries. Prereq: Jr or Sr standing. Not open to students with credit for 597.01, 4597.01H (597.01H), AEDEcon 4597.01 (597.01), or AEDEcon 4597.01H (597.01H). GE cross-disciplinary seminar course. Cross-listed in AEDEcon.

4700 Terror and Terrorism U 3
Focus on the origins, evolution and place of terrorism in the modern world and the ideology, motivation, and methods of a number of terrorist groups.

4701 The Development and Control of Weapons of Mass Destruction U 3
Offers students an overview of the issues relating to atomic, biological, and chemical weapons, commonly referred to as weapons of mass destruction (WMD). Prereq: Not open to students with credit for 555.

4702 Case Studies in Information Security U 3
This course will provide students who have taken an introductory Information Security course a deeper understanding of the background, terminology and concepts of Information Security. The course will focus heavily of behavioral outcomes, such as developing security requirements from business use-cases, comparing security requirements against implementation reality.

4703 Science, Technology and the American National Security U 3
Explores how science and technology, especially computer science and arms race technologies, influence American actions and priorities in an increasingly complex national security environment. Prereq: Not open to students with credit for 554.

4704 A Global War on Terror? America’s Response to the 9/11 Attacks U 3
Explores the domestic and international impacts of the 9/11 terrorist attacks against the United States. Four different but interrelated wars will be studied: the war against the Taliban in Afghanistan and Pakistan, the war in Iraq, the global war on terror, and the war on the home front-curtailment of civil liberties, militarization of U.S. society, domestic terrorism. Prereq: Soph standing or above.

4800 Cultural Diplomacy U 3
Cultural Diplomacy is the exchange of information, ideas and values among nations and peoples. Public and private mechanisms for these exchanges are explored. Prereq: Soph standing or above, or permission of instructor. Not open to students with credit for 550.

4801 Model United Nations U 3
Interactive diplomatic simulation of the political processes of the UN system focusing on selected global problems; involves class discussion, group projects, and significant student participation. Prereq: Not open to students with credit for 552.

4802 Problems and Prospects for Peace U 3
Integrated seminar focusing on problems encountered with peace strategies and both short and long-term prospects for peaceful change. Prereq: Soph standing, or permission of instructor.

4803 Intervening for Peace: Peacekeeping and Collective Security U 3
Exploration of the theory and practice of international peacekeeping and collective security. Prereq: Not open to students with credit for 551.

4804 Applied Nonviolence I: Methods U 3
Provides an introduction to the strategies and methods of pursuing peace and social justice through nonviolence. Through a combination of reading, discussion, and practical experiments participants will develop a sound understanding of nonviolence theory and practice. Prereq: 2000.

4805 Applied Nonviolence II: Experiment U 3
Applies the knowledge acquired from Applied Nonviolence I and is intended to develop and test the skills necessary to becoming a professional nonviolent activist. Prereq: 4804.

4806 Intelligence for Diplomacy: Assessing Leadership Style U 3
The assessment of leadership style is one of several core foci for intelligence analysts. It contributes to predictions of a leader’s likely behavior. More importantly, it guides efforts, in particular diplomatic efforts, to influence the decisions of political, economic and military leaders. This course introduces students to key theories and research in the political psychology of leadership. Prereq: Soph standing or higher, or permission of instructor. Not open to students with credit for 5195 (Assessing Leadership Style).
4850 Understanding the Global Information Society U 3
Invites students to think critically about the global networks that are shaping the new knowledge creation & sharing processes. To monitor news, investigate web resources & gather information for assignments, report & case study analysis. Prereq: Soph standing, or permission of instructor.

4998 Undergraduate Research in International Studies U 1 - 9
Undergraduate research or creative activities in variable topics. Prereq: Regular faculty mentor, and permission of department. Repeatable to a maximum of 9 or hrs or 9 completions. This course is graded S/U.

4999 Thesis Research U 1 - 3
Informal conferences to maximize the student's initiative and academic maturity; student and faculty advisor choose a research topic; the results are tested by a written thesis and an oral exam. Must receive a mark of S to graduate with Research Distinction. Prereq: GPA 3.4 or above, and Jr or Sr standing; and permission of tenure-track thesis advisor and department. Repeatable to a maximum of 9 or hrs or 9 completions. This course is graded S/U.

4999H Thesis Research U 1 - 3
Informal conferences to maximize the student's initiative and academic maturity; student and faculty advisor choose a research topic; the results are tested by a written thesis and an oral examination. Prereq: Good standing in Honors College, tenure-track faculty supervisor, and permission of department. Repeatable to a maximum of 9 or hrs or 9 completions. This course is graded S/U.

5050 Two Koreas: Political Economy of Regional Rivalry U 3
Understanding the Korean peninsula. Course will focus on the nature of North and South Korean national rivalry and its global impacts. Security issues include North Korean nuclear threat, military alliances, & reunification prospects. Prereq: Soph standing, or permission of instructor.

5051 East Asia in the Post-Cold War Era: Issues in Regional Security & Economic Development U 3
Become familiar with and to analyze East Asian regional security and economic issues in the post-Cold War era. Looking at the region as an international subsystem, the course focuses on the regional level and examines its global consequences. Prereq: Soph standing, or permission of instructor.

5191 Student Intern Program in International Studies U G 3 - 9
Opportunity to gain knowledge of the policy process in a local, national, international or government agency. Prereq: GPA 3.0 or above, and Jr, Sr, or Grad standing. Repeatable to a maximum of 9 or hrs or 3 completions. This course is graded S/U.

5193 Individual Studies U 1 - 6
Designed to give able students an opportunity to pursue a special course of study not otherwise available to them in course form. Prereq: Permission of Instructor. Not open to students with credit for 693. Repeatable to a maximum of 6 or hrs or 6 completions. This course is graded S/U.

5194 Group Studies U 1 - 3
Designed to give groups of students an opportunity to pursue special studies not otherwise offered. Prereq: Permission of Instructor. Not open to students with credit for 694. Repeatable to a maximum of 9 or hrs or 9 completions.

5195 Selected Problems in International Studies U G 3
Class Discussions, with several guest speakers, informal conferences, and a reading and research program arranged to meet the special needs of those enrolled. Counts against credits inInst/ stds major can receive for 419. Prereq: Jr or Sr standing. Repeatable to a maximum of 9 or hrs.

5640 Globalization and Latin America: Multi-Disciplinary Approaches U G 3
Explores current debates on globalization in Latin America and recent and interrelated transformations in the economies, politics, and cultures of the region. Prereq: Jr standing or above. Not open to students with credit for 640 or Spanish 5640 (640). Cross-listed in Spanish.

5645 Contemporary Issues in the Middle East U G 3
Intensive examination of contemporary issues in the Middle East by applying an interdisciplinary approach. Prereq: 2200 (245), or Jr standing. Not open to students with credit for 645 or NELC 5645 (645). Cross-listed in NELC.

5700 Rebuilding Failed and Weak States U 3
Tackles the question of how to design policies and programs to rebuild failed and weak states into functioning, if not vibrant democracies. Prereq: Soph standing or above, or permission of instructor. Not open to students with credit for PubAffs 5700 (670) or PubPolM 670. Cross-listed in PubAffs.

5701 Intelligence and National Security in a Changing World U G 3
An in-depth look at US intelligence practices, effectiveness & impact on policymaking; examines the role of secret activities in a democracy; delves heavily into current events from an intelligence perspective; looks at new intelligence challenges. Prereq: 3700 or 3700H (350 or 350H), or permission of instructor.

5701E Intelligence and National Security in a Changing World U G 3
An in-depth look at US intelligence practices, effectiveness and impact on policymaking; examines the role of secret activities in a democracy; delves heavily into current events from an intelligence perspective; looks at new intelligence challenges. Prereq: Honors standing, and 3700 (350) or 3700H (350H); or permission of instructor.

5702 Research on Organized Violence U G 3
Introduces students to the process of independent research through an in-depth examination of the Troubles in Northern Ireland.

5703 Thinking And Writing: A Practicum for Intelligence Analysis U G 3
Students will practice writing forms regularly used by the US intelligence community. Designed to provide high-level US policymakers with both raw information & detailed analysis on international events. Requires extensive research.

5797 Study at a Foreign Institution U G 1 - 18
An opportunity for students to study at a foreign institution and receive OSU credit for work completed there. Students will pay OSU fees and any fees in excess of OSU tuition, as well as all travel and subsistence costs. Prereq: Permission of department chairperson. Repeatable.

5800 International Law U G 3
Examination of the varied sources, traditions, functions and structures of international law and its significance in maintaining stability, continuity and communication in the international system. Prereq: Soph standing or above, or permission of instructor. Not open to students with credit for 650.

5801 Children and War U G 3
Explores how children are affected by war, as forced participants, orphans and refugees. Long-term effects on society will be studied. Prereq: Soph standing or above, or permission of instructor. Not open to students with credit for 615.

### Islamic Studies

3201 Muslims in America and Europe: Migration and Living Between Worlds

What does it mean to live as modern Muslims in western societies? How do they cope with prejudice, Islamophobia, traditions, integration, war, migration, and new opportunities? We explore the experiences of religious minorities in the U.S. and Europe for Muslims whose families are originally from the Arab world, Iran, South Asia, Turkey, Southeast Asia, and Central Asia. Prereq: Not open to students with credit for NELC 3201. GE soc sci indv and groups and diversity soc div in the US course.

3205 Women in the Muslim Middle East U 3
Examination of the position on women in the contemporary Middle East; impact of regional environment on gender identity; gender bias studies in various Middle Eastern countries. Prereq: English 1100. Not open to students with credit for NELC 3205. GE cultures and ideas and diversity global studies course.

3320 Introduction to Shi'i Beliefs and History U 3
Introduction to the history, doctrinal tenets, and social manifestations of Shi‘ism within Islam and in the context of Islamic civilization. Prereq: English 1110. Not open to students with credit for NELC 3230.

3335 The Early Islamic Conquests (CE 630-750) U 3
Utilizing new historical methods for reading and interpreting the sparse contemporary and near-contemporary testimonies for this historical period, this course explores how these testimonies, both Muslim and non-Muslim, continue to challenge historians to revise the history of the Islamic conquests. In this course a strong focus is placed on reading primary source materials in translation. Prereq: Not open to students with credit for History 3365. GE historical study and diversity global studies course. Cross-listed in History.

3501 Introduction to Islam U 3
Examination of Islam as a world religion, enabling an understanding of its major tenets and beliefs as they are envisioned by insiders and outsiders. Prereq: English 1110. Not open to students with credit for NELC 3501. GE cultures and ideas and diversity global studies course.

3502 Islamic Civilization Through the Ages U 3
Islamic civilization through the ages offers a panographic view of the interconnected social, political, economic, religious and intellectual developments of regions of Africa and Asia where the religion of Islam has had significant historical impact. Prereq: Not open to students with credit for NELC 3502.

3508 Sufism U 3
Examination of the distinctively Islamic mystical and spiritual features of Sufism and the relevance of its historical and cultural context. Prereq: English 1110. Not open to students with credit for NELC 3508. GE cultures and ideas course.
3702 Literatures and Cultures of the Islamic World U 3
A survey of the Islamic world by way of literature and culture. Prereq: English 1110. Not open to students with credit for NELC 3702. GE lit and diversity global studies course.

4597 Islamic Revival and Social Justice: Utopian Ideals and Lived Realities U 3
Examination of modern Islamic revival movements in selected contemporary Muslim-majority societies. Prereq: Sr standing, or permission of instructor. Not open to students with credit for NELC 4597. GE cross-disciplinary seminar course.

4626 Introduction to the Arabic Qur’an U 3
A linguistic, literary, and cultural analysis of selected chapters from the Qur’an. Prereq: Arabic 2104. Not open to students with credit for Arabic 4626.

5701 The Qur’an in Translation U G 3
An introduction, in English, to the literary, religious, and cultural implications of the fundamental book of Islam. Prereq: Not open to students with credit for Arabic 5701.

5703 Common Heritage: Biblical Figures in the Qur’an U G 3
Examining and comparing the images of important prophets in the Bible and the Qur’an. Prereq: Not open to students with credit for Arabic 5703. Repeatable to a maximum of 9 cr hrs.

### Italian

1101.01 Italian I U 4
Introduction to language and culture of the Italian speaking world with emphasis placed on the acquisition of basic communication skills in a cultural context. Not open to native speakers of this language through regular course enrollment or EM credit, or to students with 2 or more years of high school Italian. Prereq: Not open to students with credit for 1101, 1101.02, 5101, or 101. This course is available for EM credit. GE for lang course. FL Admin Cond course.

1101.02 Italian I Hybrid U 4
Covers the same material presented in Italian 1101.01 but students attend class two days/week and complete the rest of their work on-line. This course is not for everyone. The successful student is organized, self-motivated, able to learn grammar concepts on his/her own, and is comfortable with technology. Not open to native speakers of this language through regular course enrollment or EM credit, or to students with 2 or more years of high school Italian. Prereq: Not open to students with credit for 101, 1101, 1101.01 or 5101. This course is available for EM credit. GE for lang course.

1101.03 Italian I Blended U 4
Introduction to language and culture of the Italian speaking world with emphasis placed on the acquisition of basic communication skills in a cultural context. Students attend class three days/week and complete the equivalent of the work of one class period online. Not open to native speakers of this language. Prereq: Not open to students with credit for 1101.01, 1101.02, or 5101. This course is available for EM credit. GE for lang course.

1101.71 Italian Distance Learning I U 4
This online version of Italian 1101.01 is designed for development of listening, reading, speaking, writing skills and cultural competency. Taught in Italian. Note: Online courses are not for everyone; the successful student is organized, self-motivated, and comfortable with technology. Prereq: Not open to students with credit for 1101.01, 1101.02, or 5101. This course is available for EM credit. GE for lang course.

1102.01 Italian II U 4
Continued development of Italian language skills and knowledge for effective communication, with emphasis on more advanced language structures, sustained interactions, reading, and writing. Not open to native speakers of this language through regular course enrollment or EM credit. Prereq: 1101, 1101.01, 1101.02, or 101. Not open to students with credit for 1102, 1102.02, or 5101. This course is available for EM credit. GE for lang course. FL Admin Cond course.

1102.02 Italian II Hybrid U 4
Covers the same material presented in Italian 1102.01 but students attend class two days/week and complete the rest of their work on-line. This course is not for everyone. The successful student is organized, self-motivated, able to learn grammar concepts on his/her own, and is comfortable with technology. Prereq: 1101, 1101.01, 1101.02, or 101. Not open to students with credit for 1102, 1102.02, or 5101. This course is available for EM credit. GE for lang course.

1102.03 Italian II Blended U 4
Continued development of skills needed for independent use of Italian. Activities address topics of the contemporary Italian speaking world. Taught in Italian. Students attend class three days/week and complete one day of class work on-line. Not open to native speakers of this language. Prereq: 1101.01, 1101.02, 1101.03, 4 cr hrs of 1101.61, or 1101.71. Not open to students with credit for 1102, 1102.02, 4 cr hrs of 1102.61, 1102.71, or 5101. This course is available for EM credit. GE for lang course.

1102.71 Italian Distance Learning II U 4
This online version of Italian 1102.01 is designed for development of listening, reading, speaking, writing skills and cultural competency. Taught in Italian. Note: Online courses are not for everyone; the successful student is organized, self-motivated, and comfortable with technology. Prereq: 1101, 1101.01, 1101.02, 1101.03, 4 cr hrs of 1101.61, or 1101.71. Not open to students with credit for 1102, 1102.01, 1102.02, 1102.03, 1102.61, or 5101. This course is available for EM credit. GE for lang course.

1103.01 Italian III U 4
Continued development of skills needed for independent use of Italian. Activities address topics of the contemporary Italian speaking world. Taught in Italian. Not open to native speakers of this language through regular course enrollment or EM credit. Prereq: 1102 (102), 1102.01, or 1102.02. Not open to students with credit for 1103, 1103.02, or 5101. This course is available for EM credit. GE for lang course. FL Admin Cond course.

1103.02 Italian III Hybrid U 4
Covers the same material presented in Italian 1103.01 but students attend class two days/week and complete the rest of their work on-line. This course is not for everyone. The successful student is organized, self-motivated, able to learn grammar concepts on his/her own, and is comfortable with technology. Not open to native speakers of this language through regular course enrollment or EM credit. Prereq: 1102, 1102.01, 1102.02, or 102. Not open to students with credit for 1103, 1103.01, or 5101. This course is available for EM credit. GE for lang course.

1103.03 Italian III Blended U 4
Continued development of skills needed for independent use of Italian. Activities address topics of the contemporary Italian speaking world. Taught in Italian. Not open to native speakers of this language through regular course enrollment or EM credit. Prereq: 1102, 1102.01, 1102.02, or 102. Not open to students with credit for 1103, 1103.01, or 5101. This course is available for EM credit. GE for lang course.

2051 Italian Journeys U 3
Introduction to social-cultural trends in Italy as reflected in literary texts and other materials from the beginnings to the Renaissance. Taught in English. GE lit and diversity global studies course.

2052 Fictions of Italy: Modern and Contemporary Literature and Society U 3
Introduction to social-cultural trends in Italy as reflected in literary texts and other materials from the Renaissance to the present. Prereq: Not open to students with credit for 152. GE lit and diversity global studies course.

2053 Introduction to Italian Cinema U 3
Survey of the Italian cinema from the beginnings to today, with special emphasis on neorealism. Taught in English. Prereq: Not open to students with credit for 221. GE VPA and diversity global studies course.

2054 Dante in Translation U 3
Study of Dante’s Divine Comedy with a focus on the Inferno. Students will explore the historical, religious, philosophical and literary world that the poem engages. Prereq: English 1110 (110, 110.01, 110.02, or 110.03). Not open to students with credit for 251. GE lit course.

2055 Mafia Movies U 3
Examines Italian and American mafia movies made from 1905 to the present day and traces the history of the Italian and Italian American Mafias. Taught in English. GE VPA course.

2102 Contemporary Italian Society U 3
Exploration of a variety of aspects of contemporary Italian society and culture while developing language skills. Special focus on reading skills. Not open to native speakers of Italian. Prereq: A grade of C- or above in 1103.01, 1103.02, 1103.03, 4 cr hrs of 1103.61, or 1103.71, 1103.30, or 5101; or permission of instructor.

2193 Individual Studies U 1-9
Individual studies. Prereq: Permission of department. Repeatable to a maximum of 9 cr hrs or 9 completions.

2194 Group Studies U 1-9
Group studies. Repeatable to a maximum of 9 cr hrs or 9 completions.
In this course, students will become familiar with the medieval foundations of the romance genre; analyze the figure of the knight errant who wanders far from the center of his or her culture; and investigate the abiding influence of romance storytelling on how stories are told and communities are represented in contemporary literature and film. Prereq: English 1110, or equiv. GE lit and diversity global studies course.

Four-skilled practice and study of general business Italian; introduction to current Italian commerce, business practices, terminology, business-related communication skills. Not open to native speakers of Italian. Prereq: 2102 (202), or permission of instructor. Not open to students with credit for 206. FL Admis Cond course.

Development of writing skills in various contexts such as advertisements, poems, letters, film critiques and research papers. Not open to native speakers of Italian. Prereq: 2102, or permission of instructor. FL Admis Cond course.

An overview of Italian cultural history from the Medieval period to today; develops language skills through discussion of readings and film. Not open to native speakers of Italian. Prereq: 2102 (202), or permission of instructor. Not open to students with credit for 420. FL Admis Cond course.

An exploration of the culture and history of different periods through selected works of Italian literature. Not open to native speakers of Italian. Prereq: 2102 (202), or permission of instructor. Repeatable to a maximum of 6 cr hrs. FL Admis Cond course.

Development of language skills using Italian media sources such as soap operas, internet resources, films, newspapers/magazines, etc. Not open to native speakers of Italian. Prereq: 2102 (202), or permission of instructor. Repeatable to a maximum of 6 cr hrs. FL Admis Cond course.

Development of language skills while studying the histories and cultures of a variety of regions of Italy. Not open to native speakers of Italian. Prereq: 2102 (202), or permission of instructor. Not open to students with credit for 425. Repeatable to a maximum of 6 cr hrs. FL Admis Cond course.

An exploration of the cultural history of Italy from unification to the present day. Develops language skills through discussing visual media, literature, pop culture. Not open to native speakers of Italian. Prereq: 2102 (202). FL Admis Cond course.

Development of language skills while studying the evolution of Italian from its Latin origins. Not open to native speakers of Italian. Prereq: 2102 (202), or permission of instructor. Not open to students with credit for 423. FL Admis Cond course.

Development of language skills while studying the structures and uses of modern Italian and the languages spoken in Italy today. Not open to native speakers of Italian. Prereq: 2102 (202), or permission of instructor. FL Admis Cond course.

An introduction to Italian phonetics and phonology. Special focus on pronunciation. Not open to native speakers of Italian. Prereq: 2102 (202), or permission of instructor. Not open to students with credit for 420. FL Admis Cond course.

Students must enroll in course that accompanies this study abroad experience. Not open to native speakers of Italian. Prereq: 3320, 3321, 3322, 3324, 3331, 4423, 4424, 4425. Repeatable to a maximum of 9 cr hrs or 3 completions.

A professional and social experience in the target language. Students with intermediate/advanced language skills are placed with organizations where they will speak Italian in a professional environment. Prereq: 2102, CPHR 2.75 or above, and GPA 3.00 or above in Italian.

Examination of Italian cinema from Neorealism to the present. Discussion of contemporary society and culture with a brief introduction to film theory. Not open to students who are native speakers of Italian. Prereq: One course at the 3000 (400) level or above, or permission of the instructor. Not open to students with credit for 613. FL Admis Cond course.

Overview of selected works of Italian literature from the origins to today. Special focus on the cultural and historical contexts of the text studied. Not open to native speakers of Italian. Prereq: One course taken at the 3000 (or 400) level or above, or permission of instructor. Not open to students with credit for 615. FL Admis Cond course.

The study, adaptation and presentation of a play in Italian. Not open to native speakers of Italian. Prereq: Two 3000 (400) level courses, or permission of instructor. Not open to students with credit for 450 or 3225. FL Admis Cond course.

Introduction to the basic concepts of Italian linguistics; improve and refine understanding of grammar; focus on several advanced-level structures. Not open to native speakers of Italian. Prereq: One course taken at the 3000 (or 400) level or above, or permission of instructor. Not open to students with credit for 601. FL Admis Cond course.

Translation from Italian to English and English to Italian of texts from diverse sources; analysis of prose styles and conventions in the two languages. Not open to native speakers of Italian. Prereq: One course taken at the 3000 (or 400) level or above, or permission of instructor. Not open to students with credit for 4602.

Issues of language in Italy are complex and have varied significantly over time. In this course, we study, adapt and present Italian plays in a professional environment. Not open to native speakers of Italian. Prereq: 2102, CPHR 2.75 or above, and GPA 3.00 or above in Italian. Prereq: Two 3000-level Italian or other world language courses taught in English or in the world language.

Undergraduate research or creative activities in variable topics. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions.

A program of individual study for undergraduate honors students; includes individual conferences and reports. Prereq: Honors standing, CPHR 3.5 or above in Italian, Sr standing, and permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions.

Undergraduate thesis. Topics vary. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions.

Covers the same material in Italian 1101, 1102, and 1103 in one semester course. The course is necessarily fast-paced and ideal for students who find learning foreign languages fun and interesting. Prereq: Permission of instructor. GE for lang course.
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Restrictions</th>
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<tbody>
<tr>
<td>270</td>
<td>Individual Studies</td>
<td>U G</td>
<td>1 - 9</td>
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<tr>
<td>5193</td>
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<td>Group Studies</td>
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<td>Group studies. Prereq: Written permission of department. Repeatable to a maximum of 9 cr hrs or 9 completions.</td>
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<td>5331</td>
<td>History of the Italian Language</td>
<td>U G</td>
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<td>Introduction to basic concepts of historical linguistics; exploration of the major factors of change in the history of the Italian language. Prereq: Two Italian courses at the 3000-level or above; or Doctoral or MA Candidate; or qualified Undergraduates, and permission of instructor. Not open to students with credit for 711. FL Admis Cond course.</td>
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<td>5797</td>
<td>Study at a Foreign Institution</td>
<td>U G</td>
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<td>An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs. Repeatable to a maximum of 9 cr hrs or 9 completions. FL Admis Cond course.</td>
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<td>6193</td>
<td>Graduate Independent Studies</td>
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<td>Individual Studies. Prereq: MA and PhD candidates, qualified undergraduates with permission of instructor. Repeatable to a maximum of 9 cr hrs or 9 completions.</td>
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<td>8221</td>
<td>Studies in Italian Literature: Author</td>
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<td>Focus on one author from any time period. Prereq: Doctoral or MA candidates, or qualified undergraduates with permission of instructor. Repeatable to a maximum of 9 cr hrs. FL Admis Cond course.</td>
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<td>8222</td>
<td>Studies in Italian Literature: Genre</td>
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<td>Focus on one genre from one or several time periods. Prereq: Doctoral or MA candidates, or qualified undergraduates with permission of instructor. Repeatable to a maximum of 9 cr hrs. FL Admis Cond course.</td>
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<td>8231</td>
<td>Dante Studies</td>
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<td>Focus on variable selection of Dante's work, from early works to the Commedia, as well as cultural contexts. Attention also to the practice of Dante criticism. Prereq: Doctoral and MA candidates, and qualified undergraduates with permission of instructor. FL Admis Cond course.</td>
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<td>8233</td>
<td>Boccaccio and the Art of the Short Story</td>
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<td>Intensive study of Boccaccio's Decameron with comparison to sources as well as later works such as The Canterbury Tales and The Heptameron. Prereq: Doctoral and MA candidate, or qualified undergraduates with permission of instructor. Not open to students with credit for 622. FL Admis Cond course.</td>
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<td>8242</td>
<td>Studies in Italian Culture: Gender and Genre</td>
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<td>Examines representations of gender in film, literature, poetry or other media. May focus on one period/issue or address a center or longer time period. Prereq: Doctoral and MA candidates, or qualified undergraduates with permission of instructor. Repeatable to a maximum of 9 cr hrs. FL Admis Cond course.</td>
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<td>8243</td>
<td>Studies in Italian Cinema</td>
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<td></td>
<td>Detailed exploration and analysis of selected topics in Italian cinema. Prereq: Doctoral and MA Candidates or, qualified undergraduates with permission of instructor. Repeatable to a maximum of 9 cr hrs. FL Admis Cond course.</td>
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<tr>
<td>8244</td>
<td>Studies in Italian Culture: Italy at War</td>
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<td>Detailed analysis of either filmic or literary representations of periods of strife in modern Italian culture. Prereq: Doctoral or MA candidates or, qualified undergraduates with permission of instructor. Repeatable to a maximum of 9 cr hrs. FL Admis Cond course.</td>
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<tr>
<td>8245</td>
<td>Italian Pop Culture</td>
<td>G</td>
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<td></td>
<td>Exploration of new media, popular television, film, music, literature or other visual or performing arts. Prereq: Doctoral or MA candidates, or qualified undergraduates with permission of instructor. Repeatable to a maximum of 9 cr hrs. FL Admis Cond course.</td>
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<tr>
<td>8246</td>
<td>Studies in Italian Culture: Migrating Italy</td>
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<td>In-depth exploration of Italian literature, film and culture of immigration and emigration. Primary texts may include novels, travel logs/journals, films, documentaries, newspaper articles, and propaganda material. Prereq: Doctoral or MA candidates, or qualified undergraduates with permission of instructor. Repeatable to a maximum of 9 cr hrs. FL Admis Cond course.</td>
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<tr>
<td>8303</td>
<td>Teaching Apprenticeship</td>
<td>G</td>
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<td>Apprenticeship for advanced doctoral students to work with faculty members on the design and teaching of upper-level Italian language, literature, and culture courses. Prereq: Two years previous teaching experience, and permission of instructor and Graduate Studies chair. Repeatable to a maximum of 6 cr hrs or 2 completions.</td>
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<tr>
<td>8881</td>
<td>Interdepartmental Studies in the Humanities</td>
<td>G</td>
<td>1 - 6</td>
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<td>Two or more departments present colloquia on subjects of mutual interest; topics to be announced. Repeatable with permission from the department. Prereq: Grad standing. Repeatable to a maximum of 6 cr hrs or 2 completions.</td>
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<tr>
<td>8998</td>
<td>Pre-Candidacy Research</td>
<td>G</td>
<td>1 - 9</td>
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<td></td>
<td>Pre-candidacy research and examination preparation for advanced graduate students. Repeatable to a maximum of 30 cr hrs or 30 completions. This course is graded S/U.</td>
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<tr>
<td>8999</td>
<td>Dissertation Research</td>
<td>G</td>
<td>1 - 9</td>
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<td>Research for dissertation. Prereq: Candidacy exams completed. Repeatable to a maximum of 30 cr hrs or 30 completions. This course is graded S/U.</td>
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### Japanese

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Restrictions</th>
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</thead>
<tbody>
<tr>
<td>1101.01</td>
<td>Level One Japanese I: Classroom Track</td>
<td>U</td>
<td>4</td>
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<tr>
<td></td>
<td>Standard Japanese at the elementary level, with emphasis on building &amp; applying basic language knowledge in doing things in Japanese; exercises in oral interactions &amp; interactions involving text; introduction to the Japanese writing system. Not open to native speakers of this language through regular course enrollment or EM credits, or to students with 3 or more years of study in this language. Prereq: Not open to students with credit for 1101.02 (101.01) or 4 credits of 1101.51 (101.51). This course is available for EM credit. GE for lang course. FL Admis Cond course.</td>
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<tr>
<td>1101.02</td>
<td>Level One Japanese I: Summer Intensive Track</td>
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<td>4</td>
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<td>Standard Japanese at the elementary level, with emphasis on knowledge in doing things in Japanese; intro to the writing system. Sum Intensive. Admission to SPEAC program is required, 4 cr hrs during the first 3.5 weeks of the Summer Session. Prereq: Application and admission to SPEAC program. Not open to students with credit for 1101.01 (101.01), 1101.51, or 102, or to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GE for lang.</td>
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<tr>
<td>1101.51</td>
<td>Level One Japanese I: Individualized Track</td>
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<td>1 - 4</td>
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<td>Japanese at elem level, emphasis on building &amp; applying basic lang knowledge in doing things in Japanese; exercises in oral interactions, involving text, intro to writing system. Progress is seq from 1 cr hr to next with prof at 80% req'd for advance. Prereq: Not open to students with credit for 1101.01 (101), 1101.02 (102), or 4 credits of 1101.51, or to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study of this language in high school, except by permission of dept. Repeatable to a maximum of 4 cr hrs or 4 completions. This course is available for EM credit. GE for lang course. FL Admis Cond course.</td>
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<tr>
<td>1102.01</td>
<td>Level One Japanese II: Classroom Track</td>
<td>U</td>
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<td>Continuation of Japanese 1101.</td>
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<td>Sp Sem. Prereq: 1101.01 or 1101.02 or 4 credits of 1101.51. Not open to students with credit for 1102.02 (102.02) or with 4 credits of 1102.51 (103.51); or to native speakers of this language through regular course enrollment or EM unit. This course is available for EM credit. GE for lang course. FL Admis Cond course.</td>
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<tr>
<td>1102.02</td>
<td>Level One Japanese II: Summer Intensive Track</td>
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<td>Continuation of 1101.01, 1101.02, or 4 credits of 1101.51. Summer Intensive. Admission to SPEAC program is required for registration and complete 4 credits during the second 3.5 weeks of the Summer Session. Prereq: 1101.01 or 1101.02 or 4 cr hrs of 1101.51; application and admission to SPEAC program. Not open to students with credit for 1102.01 or 4 credits of 1102.51, 102.02, or 103.02; or to native speakers of this language through regular course enrollment or EM credit. GE for lang course. FL Admis Cond course.</td>
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1102.51 Level One Japanese II: Individualized Track

Continuation of 1101.01, 1101.02, or 4 credits of 1101.51. Individualized. Students complete from 1 to 4 units during the semester. Progress is sequential from one unit to the next with proficiency at the level of 80% required for advancement. Prereq: 1101.01 or 1101.02 or 4 units of 1101.51. Advancement to the first credit in this course in the same semester as the completion of the 4th credit for 1101.51 requires registration for both courses, with permission of instructor. Not open to students with credit for 1101.01, 1101.02, or 4 credits of 1101.51, or 102.51, or 103.51; or to native speakers of this language through regular course enrollment or EM credit. Repeatable to a maximum of 4 cr hrs or 4 completions. This course is available for EM credit. GE for lang course. FL Admis Cond course.

1103.01 Level Two Japanese I: Classroom Track

Continuation of 1102.01, 1102.02, or 4 credits of 1102.51; expanding oral and written communication. Building. Students complete 4 units during the semester. Not open to native speakers of this language through regular course enrollment or EM credit. Au Sem. Prereq: 1102.01, 1102.02, or 4 cr sem hrs of 1102.51; and application and admission to SPEAC program. Not open to students with credit for 1103, 4 cr sem hrs of 1103.51, or 104. GE for lang course. FL Admis Cond course.

1103.02 Level Two Japanese I: Summer Intensive Track

Continuation of 1102.01, 1102.02, or 4 credits of 1102.51, and expanding oral and written communication. Students complete 4 cr hrs during the first 3.5 weeks of the Summer Session. Not open to native speakers of this language through regular course enrollment or EM credit. Su Sem. Prereq: 1102.01 or 1102.02, or 4 sem cr hrs of 1102.51; and application and admission to SPEAC program. Not open to students with credit for 1103, 4 sem cr hrs of 1103.51, or 104. GE for lang course. FL Admis Cond course.

1103.51 Level Two Japanese I: Individualized Track

Continuation of 1102.01, 1102.02, or 4 credits of 1102.51. Individualized. Students complete from 1 to 4 units during the semester. Progress is sequential from one cr hr to the next with proficiency at the level of 80% required for advancement. Not open to native speakers of this language through regular course enrollment or EM credit. Prereq: 1102.01 or 1102.02, or 4 units of 1102.51. Advancement to the first credit in this course in the same semester as the completion of the 4th credit for 1102.51 requires registration for both courses, with permission of instructor. Not open to students with credit for 1103, 4 sem cr hrs of 1103.51, or 104. Repeatable to a maximum of 4 cr hrs or 4 completions. This course is available for EM credit. GE for lang course. FL Admis Cond course.

2102.01 Level Two Japanese II: Classroom Track

Continuation of 1103.01, 1103.02, or 4 credits of 1103.51. Expanding oral and written communication strategies. Students must complete 5 units during the semester. Sp Sem. Prereq: 1103.01 or 1103.02, or 4 units of 1103.51. Not open to students with credit for 1103, 4 cr sem hrs of 1103.51, or 104. GE for lang course. FL Admis Cond course.

2102.02 Level Two Japanese II: Summer Intensive Track

Continuation of 1103.01, 1103.02, or 4 credits of 1103.51, expanding oral and written communication. Intensive. Students must register for the course at the beginning of the term and complete 5 cr hrs during the second 3.5 weeks of the term. Su Sem. Prereq: Japanese 1103.01, 1103.02, or 4 cr hrs of 1103.51; or equiv, and application and admission to SPEAC program; or permission of instructor. FL Admis Cond course.

2141 Intensive Level Two Japanese-Oral

First course in the sequence of academic-year intensive Japanese courses; organized around a set of videotaped core conversations. Au Sem. Prereq: 1102.01 or equivalent, and permission of instructor. Concur: 2151. Not open to students with credit for 1103, 2102, or 210. This course is available for EM credit. GE for lang course. FL Admis Cond course.

2151 Intensive Level Two Japanese-Written

Second course in the sequence of academic year intensive Japanese courses; organized around reading Japanese and a series of genre-specific samples of Japanese as it is written today. Au Sem. Prereq: 1102.01 or equivalent, and permission of instructor. Concur: 2141. Not open to students with credit for 1103, 2102, or 211. This course is available for EM credit. FL Admis Cond course.

2231 Elements of Japanese Culture

A survey of literature, art, religion, philosophy, film, and social institutions of the Japanese people from the earliest to the most recent times. Taught in English. Prereq: Not open to students with credit for 231. GE cultures and ideas and diversity global studies course.

2255 Postwar Culture in Germany and Japan

This course will examine postwar culture in Germany and Japan, looking at films, theoretical texts, memoirs, manifestos, and literary works, subjecting our material to cross-cultural analysis that should deepen as our basis for comparison expands. Team-taught with faculty in German. Prereq: Not open to students with credit for German 2255. Cross-listed in German. GE cultures and ideas course.

2451 Japanese Literature in Translation

Representative masterpieces from Japan’s literary tradition: fiction, poetry, drama, prose. Taught in English. Prereq: Not open to students with credit for 251. GE lit and diversity global studies course.

2452 Modern Japanese Literature in Translation

Modern Japanese literature and media from late 19th century Western influences to contemporary writers; selected readings in English translation. Prereq: Not open to students with credit for 252. GE lit and diversity global studies course.

4101 Level Three Japanese I

Expansion of strategies for communication through oral and textual media. Au Sem. Prereq: 2102.01 or 2102.02, or equivalent with permission of instructor. Not open to students with credit for 507 or 508. This course is available for EM credit. FL Admis Cond course.

4102 Level Three Japanese II

Continuation of 4101; supplementary readings in short stories and standard reference works. Sp Sem. Prereq: 4101, or equivalent with permission of instructor. Not open to students with credit for 508 or 509. This course is available for EM credit. FL Admis Cond course.

4124 Intensive Level Three Japanese-Oral

Third course in the sequence of academic-year intermediate intensive Japanese courses; organized around a set of videotaped core conversations. Sp Sem. Prereq: 1102.01, and permission of instructor; or 2141 with 2151 and permission of instructor. Concur: 4152. Not open to students with credit for 2102.01, 310, or 510. This course is available for EM credit. FL Admis Cond course.

4152 Intensive Level Three Japanese-Written

Fourth course in the sequence of academic-year intensive Japanese courses; organized around reading a set of genre-specific samples of Japanese as it is written today; integrated with 4142 in structure and vocabulary. Au Sem. Prereq: 2101, and permission of instructor; or 2141 with 2151 and permission of instructor. Concur: 4142. Not open to students with credit for 4102, 311, or 511. This course is available for EM credit. FL Admis Cond course.

4193 Individual Studies

Directed study to meet individual research needs of students in Japanese studies. Not a substitute for regular language courses. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs or 2 completions.

4194 Group Studies

Group investigation of issues in Japanese studies. Varying topics. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs or 2 completions.

4400 Japanese Film and Visual Media

An overview of Japanese cinema and visual media, with a focus on genre: canonical and popular works of anime, yakuza film, historical/samurai film, comedies, and documentaries. Taught in English, no Japanese required.

4401 Japanese Literature and Film in Critical Perspective

Survey in translation of canonical works of Japanese literature and film and introduction to methods for the critical evaluation of the Japanese literary tradition. Prereq: 2451 or 2452, or equivalent; or permission of instructor. Not open to students with credit for 501.

4998 Undergraduate Research Project

Focused research toward completion of an original project. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

4998H Honors Undergraduate Research Project

Focused research toward completion of an original project. Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

4999 Undergraduate Research Thesis

Focused research toward completion of an original thesis. Prereq: Permission of instructor. Repeatable to a maximum of 8 cr hrs or 2 completions. This course is graded S/U.

4999H Honors Undergraduate Research Thesis

Focused research toward completion of an original thesis. Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 8 cr hrs or 2 completions. This course is graded S/U.

5101.01 Level Four Japanese I: Classroom Track

Continuation of 4102.01 or 4142/4152 with an increasing emphasis on presentation modality of communication. Students must complete 3 units during the semester. Au Sem. Prereq: 4102 or 4142/4152. Not open to students with credit for 5101.02, or 611.01 and 610. FL Admis Cond course.

5101.02 Level Four Japanese I: Summer Intensive Track

Continuation 4102.01 or 4142/4152; expansion of communicative strategies with increased emphasis on presentational mode of communication. Readings in various genres. Sum. Intensive. Must complete 3 credits during the first 3.5 weeks of the term. Prereq: 4102, or 4142 and 4152; or permission of instructor, and application and admission to SPEAC program. Not open to students with credit for 5101.01, 610.02, or 611.02. FL Admis Cond course.
5102.01 Level Four Japanese II: Classroom Track  
Continuation of 5101.01 or 5101.02. Students must complete 3 units during the semester.  
Sp Sem. Prereq: 5101.01 or 5101.02. Not open to students with credit for 5102.02, 611.01, or 612.01. FL Admis Cond course.

5102.02 Level Four Japanese II: Summer Intensive Track  
Continuation of 5101.01 or 5101.02. Intensive. Students must register for the course at the beginning of the term and complete 3 credits during the second 3.5 weeks of the term.  
Prereq: 5101.01, 5101.02, or permission of instructor; application and admission to SPOEC program. Not open to students with credit for 5102.01, 611.02, or 612.02. FL Admis Cond course.

5103.51 Level Five Japanese I: Individualized Track  
Continuation of 5102.01 or 5102.02, with an increasing emphasis on presentation mode of communication. Individualized Track. Students complete from 1 to 3 units during the semester.  
Au Sem. Prereq: 5102.01 or 5102.02. Not open to students with 9 cr hrs of 5103.51, or 710.51 and 711.51. Repeatable to a maximum of 9 cr hrs or 4 completions. This course is available for EM credit. 

5104.51 Level Five Japanese II: Individualized Track  
Continuation of 5103.51. Individualized. Students must complete from 1 to 3 units during the semester.  
Sp Sem. Prereq: 5102.01 or 5102.02. Not open to students with 9 cr hrs of 5104.51, or 711.51 and 712.51. Repeatable to a maximum of 9 cr hrs or 4 completions. This course is available for EM credit. FL Admis Cond course.

5111 Classical Japanese I  
Develops familiarity with traditional Japanese and Western grammatical concepts, categories, functions, and reference tools for reading early Japanese, in close reading of selected primary texts and linguistic analysis.  
Prereq: 4102, 4152 or equivalent; or permission of instructor. Not open to students with credit for 601. FL Admis Cond course.

5112 Classical Japanese II  
Advanced readings of premodern Japanese texts with attention to various problems of language history and literary genres.  
Prereq: 5111, or permission of instructor. Repeatable to a maximum of 6 cr hrs.

5121 Kanbun  
Introduces the basics of grammar of classical Japanese kanbun texts.  
Prereq: 5111 and 5112.

5194 Und/Grad Group Studies  
Group investigation of issues in Japanese studies designed for a mix of undergraduate and graduate students. Varying topics.  
Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs or 2 completions.

5271 The Japanese Religious Tradition  
A survey of the Japanese religious tradition, including Shinto, Buddhism, Taoism, Neo-Confucianism, and folk religion from the 6th century B.C.E. to the present.  
Prereq: Not open to students with credit for 641, CompStd 5871 (641) or RelStds 5871. Cross-listed in RelStds 5871.

5315 Japanese Language: Structure, Culture, and Communication I  
Critical and comprehensive survey of structural, cultural, and communicative aspects of the Japanese language. Taught in English.  
Prereq: 1101.01, 1101.02, or 4 units of 1101.51. Not open to students with credit for 515.

5316 Japanese Language: Structure, Culture, and Communication II  
Critical and comprehensive survey of structural, cultural, and communicative aspects of the Japanese language.  
Prereq: 1103, 5315, or permission of instructor. Not open to students with credit for 516.

5380 Japanese Linguistics  
Examination of the phonology, syntax, and lexicon of the Japanese language.  
Prereq: Permission of instructor. Not open to students with credit for 680.

5400 Performance Traditions of Japan  
Introduction to performance traditions of Japan: explores selected performing arts in their cultural contexts and examines patterns of emergence in modern times.  
Prereq: 2251, 2451, or 2452; or Chinese 2231 or 2451; or Korean 2231 or 2451; or EALL 1231; or permission of instructor. Not open to students with credit for 650.

5454 Japanese Literature: Classical Period  
Survey of Japanese literature from the eighth to the twelfth century: myths, court poetry, tales, fiction, diaries, and miscellanies.  
Prereq: 2251, 2451, or 2452, or another Japanese literature course at the 2000 level or above; or permission of the instructor. Not open to students with credit for 654.

5455 Japanese Literature: Medieval and Edo Periods  
Survey of Japanese literature from the thirteenth to the early nineteenth century: popular tales, poetry, drama, and the fiction of the merchant class.  
Prereq: 2251, 2451, or 2452, or another Japanese literature course at the 2000 level or above, or permission of instructor. Not open to students with credit for 655.

5798.02 Study Tour: Foreign  
Specific content, location, semester(s) of offering, and prerequisites vary; contact department office for details. Repeatable for different titled study tours only.  
Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs or 3 completions.

6103 Individual Studies  
Requires the use of Japanese sources and the completion of a paper reflecting the student's research. Not a substitute for regular language courses.  
Prereq: 4102 or 5112, and permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

6194 Group Studies  
Group investigation of issues in Japanese studies. Varying topics.  
Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions.

6999 Research in Japanese: Project  
Research leading to the completion of a project other than a conventional MA thesis.  
Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs or 2 completions. This course is graded S/U.

6999 Research in Japanese: Thesis  
Research leading to the completion of an MA thesis.  
Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

7384 Japanese Syntax  
Discussion of the grammatical structures of Japanese; presentation of syntactic rules.  
Prereq: 6380. Not open to students with credit for 784.

7386 Japanese Pragmatics  
Discussion of pragmatic aspects of the Japanese language.  
Prereq: 6380, or permission of instructor. Not open to students with credit for 786.

7387 Japanese Language Processing  
Discussion of various studies on and approaches to Japanese first and second language processing.  
Prereq: 6380, or permission of instructor. Not open to students with credit for 787.

7388 Japanese Language Acquisition  
Discussion of Japanese language acquisition studies.  
Prereq: 6380, or permission of instructor. Not open to students with credit for 788.

7453 Studies in Japanese Drama  
History and texts of Japan's dramatic literature; noh, kyogen, bunraku, kabuki, shin'egaki; topic varies.  
Prereq: 5111 or 5112; 5454, 5455, or 5456; or permission of instructor. Repeatable to a maximum of 6 cr hrs.

8387 Topics and Problems in Japanese Linguistics  
A detailed investigation of specific problems in the phonological, syntactical, and/or lexical analysis of the Japanese language.  
Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

8501 Japanese Bibliography and Research Methods  
Problems and procedures in the use of Japanese bibliographies and other reference materials, including electronic sources.  
Prereq: 5102.1 or equivalent; or permission of instructor; Not open to students with credit for 800.

8897 Departmental Seminar  
Seminars in Japanese language, linguistics, or pedagogy; topic varies.  
Prereq: 5111 or 5112; 5454, 5455, or 5456; or permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions.

8998 Research in Japanese: Project  
Research leading to the completion of a project other than a conventional dissertation.  
Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

8999 Research in Japanese: Dissertation  
Research leading to the completion of a dissertation.  
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs or 7 completions. This course is graded S/U.

Jewish Studies

2194 Group Studies  
An investigation of a particular topic in Jewish Studies through readings, discussion and scheduled class meetings. The topic will vary from semester to semester and is based on emerging interests of students and faculty in Jewish Studies.  
Prereq: Permission of instructor.
2241  Yiddish Culture U  3
Introductory survey of political, social, ideological, and religious trends as reflected in Yiddish
culture, especially folklore and literature.
Prereq: Not open to students with credit for Yiddish 2241 (241). GE cultures and ideas and
diversity global studies course. Cross-listed in Yiddish.

2242 Culture of Contemporary Israel U  3
An introduction to the Culture of modern Israel: historical roots, socio-political institutions
and developments, and literary and artistic creations reflecting the realities of contemporary
Israel society.
Prereq: Not open to students with credit for 2242H, Hebrew 2241 (241), or 2244H (241H). GE
cultures and ideas and diversity global studies course. Cross-listed in Hebrew 2241.

2242H Culture of Contemporary Israel U  3
An introduction to the culture of modern Israel: historical roots, socio-political institutions
and developments, and literary and artistic creations reflecting the realities of contemporary
Israel society.
Prereq: Honors standing, or permission of instructor. Not open to students with credit for
2700H, Hebrew 2700, or 2700H. GE lit and diversity global studies course. Cross-listed in
Hebrew.

2367 Jewish-American Voices in U.S. Literature U  3
Introduction to Jewish-American literature: development of expository writing and
argumentation skills through systematic and critical reflection upon their own country from the
perspective of an ethnic community.
Prereq: English 1110 (110) or equiv. Not open to students with credit for Yiddish 2367 (367).
GE writing and community course: level 2 and cultures and ideas course. Cross-listed in Yiddish.

2450 Ancient and Medieval Jewish History, 300 BCE-1100 CE U  3
Introduction to the history of Jewish communities, religion, and culture in the Near East from
the Greco-Roman period to the First Crusade.
Prereq or concur: English 1110.xx, or permission of instructor. Not open to students with credit
for History 2450 (330.01). GE cultures and ideas and historical study and diversity global
studies course. Cross-listed in History.

2451 Medieval and Early Modern Jewish History, 700-1700 CE U  3
Introduction to the history of Jewish communities, religion, and culture in Europe during the
Medieval and Early Modern periods.
Prereq or concur: English 1110.xx, or permission of instructor. Not open to students with credit
for History 2451 (330.01 and 330.02). GE historical study course. Cross-listed in History.

2452 Modern Jewish History 1700 - Present U  3
Study of the history of Jewish communities and Judaism from the early modern period to the
eyear 21st century.
Prereq or concur: English 1110.xx, or permission of instructor. Not open to students with credit
for History 2452 (330.02). GE historical study course. Cross-listed in History.

2453 History of Zionism and Modern Israel U  3
The history of Zionist movement and the modern state of Israel from beginnings to present.
Prereq or concur: English 1110.xx, or permission of instructor. Not open to students with credit
for History 2453 (334). GE historical study course. Cross-listed in History.

2454 History of Anti-Semitism U  3
Study of the development of anti-Semitism, the history of anti-Semitic ideologies and practices,
and different Jewish responses to anti-Semitism over time.
Prereq or concur: English 1110.xx, or permission of instructor. Not open to students with credit
for History 2454 (333). GE historical study course. Cross-listed in History.

2455 Jews in American Film U  3
A study of how modern Jews appear in film compared with historical reality.
Prereq or concur: English 1110, or permission of instructor. Not open to students with credit
for History 2455 (332). GE historical study course. Cross-listed in History.

2475 History of the Holocaust U  3
Study of the state-sponsored murder of millions of Jews and non-Jews by the Nazis and their
collaborators during World War II.
Prereq or concur: English 1110.xx, or permission of instructor. Not open to students with credit
for History 2475. GE historical study course. Cross-listed in History.

2516 The Medieval Jewish Experience U  3
A survey of ten centuries of medieval Jewish culture from the rise of Islam to the death of
Shabbetai Tzvi, the false Messiah (1676).
Prereq: Not open to students with credit for MedRen 2516 (Medieval 216) or Hebrew 2216
(216). GE cultures and ideas and diversity global studies course. Cross-listed in MedRen 2516
and Hebrew 2216.

2700 The Hebrew Bible in Translation U  3
Reading and analysis of selected chapters from the Hebrew scriptures and post-biblical
Hebrew writings representative of major historical, cultural, and literary trends.
Prereq: English 1110. Not open to students with credit for 2700H, Hebrew 2700, or 2700H. GE
lit and diversity global studies course. Cross-listed in Hebrew.

2700H The Hebrew Bible in Translation U  3
Reading and analysis of selected chapters from the Hebrew scriptures and post-biblical
Hebrew writings representative of major historical, cultural, and literary trends.
Prereq: Honors standing, and English 1110, or permission of instructor. Not open to students
with credit for 2700H, Hebrew 2700, or 2700H. GE lit and diversity global studies course. Cross-
listed in Hebrew.

2702 Modern Hebrew Literature in Translation U  3
A survey of major themes and topics in Modern Hebrew literature from the middle of the 19th
century to the present.
Prereq: English 1110 (110). Not open to students with credit for 2702H, Hebrew 2702 (372), or
2702H (372H). GE lit and diversity global studies course. Cross-listed in Hebrew.

2702H Modern Hebrew Literature in Translation U  3
A survey of major themes and topics in Modern Hebrew literature from the middle of the 19th
century to the present.
Prereq: Honors standing, and English 1110 (110); or permission of instructor. Not open to
students with credit for JewishSt 2702, Hebrew 2702 (372), or 2702H (372H). GE lit and
diversity global studies course. Cross-listed in Hebrew.

3111 Introduction to Jewish Philosophy U  3
A general introduction to major figures and trends in medieval, modern, and contemporary
Jewish philosophy; emphasis on Philo, Saadia, Maimonides, Spinoza, Mendelssohn, and
Buber.
Prereq: Not open to students with credit for Philos 3111 (321). GE cultures and ideas course.
Cross-listed in Philos.

3205 Art and Judaism U  3
An exploration of the nature and function of art in Judaism from the standpoints of history,
cultural history, and material culture.
Prereq: English 1110. Not open to students with credit for 2205, Hebrew 2205, or 3205. GE
VPA course.

3210 Kabbalah and the Jewish Mystical Tradition U  3
The history of Jewish mysticism from antiquity to the present, with emphasis on its implications
for the comparative study of religious experience.
Prereq: English 1110. Not open to students with credit for 2210, 2210H, 3210H, CompStd
2210, 2210H, Hebrew 2210, 3210, 3210H, RelStds 2210, 3210, 3210H, or 3210H. GE
cultures and ideas and diversity global studies course. Cross-listed in Hebrew and RelStds.

3210H Kabbalah and the Jewish Mystical Tradition U  3
The history of Jewish mysticism from antiquity to the present, with emphasis on its implications
for the comparative study of religious experience.
Prereq: Honors standing, and English 1110. Not open to students with credit for 2210, 3210,
3210H, CompStd 2210, 3210H, Hebrew 2210, 3210, 3210H, RelStds 2210, 3210, 3210H, or 3210H.
GE cultures and ideas and diversity global studies course. Cross-listed in Hebrew and RelStds.

3245 Israeli Film & Society U  3
A survey of Israeli films from 1948 to the present day, tracing the development of film
production in Israel as well as the relationship between film and society.
Prereq: English 1110. Not open to students with credit for 2245 or Hebrew 2245 or 3245. GE
VPA and diversity global studies course. Cross-listed in Hebrew.

3371 Yiddish Literature in Translation U  3
Reading, analysis, and discussion of representative works and of the development of major
movements and genres in Yiddish literature.
Prereq: Not open to students with credit for Yiddish 3371 (371). GE lit and diversity global
studies. Cross-listed in Yiddish.

3450 History of Ancient Israel (to 300 BCE) U  3
Survey of the history and historiography of Israel from its origins to the advent of Hellenism.
Prereq: English 1110.xx, and any History 2000-level course; or permission of instructor. Not
open to students with credit for History 3450 (330.01). GE historical study course. Cross-listed
in History.

3455 Jewish Life from the Renaissance to the Early Enlightenment U  3
Life and thought of European and Mediterranean Jews in the early modern period.
Prereq or concur: English 1110.xx, or permission of instructor. Not open to students with credit
for History 3455. GE historical study course. Cross-listed in History.

3465 American Jewish History U  3
Study of topics in American Jewish history from the colonial era to the present.
Prereq or concur: English 1110.xx, or permission of instructor. Not open to students with credit
for History 3465. GE historical study course. Cross-listed in History.

3470 Messiahs and Messianism in Jewish History U  3
The history of Jewish messianic ideas and of Jewish messianic leadership from ancient to
modern times.
Prereq: English 1110.xx, and any History 2000-level course; or permission of instructor. Not
open to students with credit for History 3470 (351.01). GE historical study course. Cross-listed in
History.
3505 U.S. Diplomacy in the Middle East  U  3
Survey of U.S. foreign policy in the Middle East emphasizing the Cold War, Arab-Israeli conflict, Iran, and wars against Iraq. Sometimes this course is offered in a distance-only format.
Prereq or concur: English 1110.x, or permission of instructor. Not open to students with credit for History 3505. GE historical study and diversity global studies course. Cross-listed in History.

3703 Prophecy in the Hebrew Bible  U  3
An intensive investigation into the dynamics of Israelite prophecy and apocalyptic in the context of ancient Near Eastern culture.
Prereq: English 1110. Not open to students with credit for 2703, Hebrew 2703, or 3703. GE lit and diversity global studies course. Cross-listed in Hebrew.

3704 Women in the Bible and Beyond  U  3
An examination of the social, legal, and religious position of women as they appear in the Hebrew Bible and the ways in which they have been represented and interpreted in later textual, visual, and audio sources.
Prereq: English 1110. Not open to students with credit for 2704, Hebrew 2704, or 3704. GE lit and diversity global studies course. Cross-listed in Hebrew.

3708 Wisdom Literature in the Bible  U  3
An examination of the various ideas, themes, attitudes, implications, and genres of biblical and post-biblical wisdom literature.
Prereq: English 1110. Not open to students with credit for 2708, Hebrew 2708, or 3708. GE lit and diversity global studies course. Cross-listed in Hebrew.

4191 Jewish Studies Internship  U  1 - 3
Community work with agencies and organizations serving the Jewish population. Evaluation of policy decisions from a Jewish perspective.
Prereq: 2201, and 9 sem cr hrs in JewishST, or permission of instructor. Repeatable to a maximum of 3 cr hrs or 2 completions. This course is graded S/U.

4798.02 History and Culture of Israel: Study Tour  U  3
Introduces the dynamics of the current Middle East peace process against the backdrop of the richness and diversity of contemporary Israeli society and culture. Students will read material pertaining to the Middle East peace process, attend and participate in lectures/discussions with instructors during May semester, and take part in a study tour of Israel through OSU OIA. GE education abroad course.

4798H Thesis Research  U  1 - 3
A program of readings and empirical investigation of topics arranged on the basis of individual student interests. The course will entail individual conferences with faculty, reports, and honors thesis. An advanced independent study option.
Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

5194 Group Studies  UG 1 - 3
An investigation of a particular topic in Jewish Studies through readings, discussion and scheduled class meetings. The topic will vary from semester to semester and is based on emerging interests of students and faculty in Jewish Studies.
Prereq: 2201 or 2194, or permission of instructor. Repeatable to a maximum of 3 cr hrs or 3 completions. This course is graded S/U.

5797 Study at a Foreign Institution  UG 1 - 9
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Students will pay Ohio State University Fees and any fees in excess of Ohio State tuition as well as all travel and subsistence costs.
Prereq: Written Permission of Melton Center Director. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is progress graded (S/U).

1263 Special Issues Affecting Contemporary Student-Athletes  U  3
An exploration of current topics and problems concerning collegiate athletes and the decision-making skills needed to facilitate college adjustment.
Prereq: Fresh or Soph standing, or permission of instructor. Not open to students with credit for EduPAES 263. This course is graded S/U.

2221.01 Sports Officiating: Baseball  U  1
Study of playing rules, rule interpretation, techniques, and mechanics of officiating interscholastic and intercollegiate baseball. Satisfactory evidence of playing skill in the elected athletic sport.
Prereq: Not open to students with credit for EduPAES 221.01.

2221.02 Sport Officiating: Basketball  U  1
Study of playing rules, rule interpretation, techniques, and mechanics of officiating interscholastic and intercollegiate basketball. Satisfactory evidence of playing skill in the elected athletic sport is required.
Prereq: Not open to students with credit for EduPAES 221.02.

3315 Positive Transitions for Intercollegiate Student-Athletes  U  2
Addresses transitional issues unique to intercollegiate student-athletes. Students will learn appropriate development “Life Skills” needed to facilitate their personal and career adjustment.
Prereq: Jr or Sr standing; or instructor permission. Not open to students with credit for EduPAES 315. This course is graded S/U.

4998 Research: Kinesiology  U  1 - 12
Independent study related to research in Kinesiology: Health and Exercise Science, Physical Education, or Sport Industry.
Prereq: Open only to Kinesio majors, and permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions. This course is graded S/U.

4998H Research: Honors in Kinesiology  U  2 - 3
A program of accelerated study for students with special aptitudes.
Prereq: Honors standing and permission of instructor. Repeatable to a maximum of 10 cr hrs or 5 completions. This course is graded S/U.

5194 Group Studies: Kinesiology  UG 1 - 15
Special Topics related to issues in Kinesiology.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 15 completions. GE education abroad course.

5891 Kinesiology Graduate Core Course I  G 3
Introduction to graduate study in Kinesiology with an emphasis on becoming a successful doctoral student and scholar.
Prereq: Grad standing in Kinesiology, or permission of instructor.

6882 Kinesiology Graduate Core Course II  G 3
Advanced graduate study in Kinesiology including writing the thesis or dissertation.
Prereq: Dott standing in Kinesiology, or enrollment in MS, or permission of instructor.

7730 Endocrinology  G 4
Functional principles of the major endocrine systems in vertebrates and preparation for research in this area.
Prereq: Biochem 4511 (511), or permission of instructor. Not open to students with credit for VetBio 730. Cross-listed in AnimiSci.

7999 Research: Thesis  G 1 - 6
Provides graduate students with the opportunity to develop and conduct basic and applied kinesiology research required for the completion of a thesis.
Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

8189 Practicum in Kinesiology  G 1 - 6
Practicum study hours in Kinesiology.
Prereq: Admission to Kinesiology graduate program, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

Kinesiology: Health and Exercise Science

2360 Introduction to Exercise Science  U  3
An exposure to the wide-range of topics that comprise the exercise science discipline.

2990 Movement is Medicine: Your Rx to Health  U  3
This course provides an introduction to the powerful and widespread impact of exercise on human health. The design of the course examines the “why, what and how” of exercise and includes a practical and personalized application of the material.

3193 Independent Study: Health and Exercise Science  U  1 - 12
Independent study in Health and Exercise Science.
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions. This course is graded S/U.

3414 Physiological Systems in Human Performance  U  3
This course will examine the primary human physiological systems, their functions and their responses to acute and chronic exercise stimuli.
Prereq: Admission to Exercise Science or Health Promotion, Nutrition, and Exercise Science major. Prereq or concur: Physio 3200 or EEOB 2520.

3415 Applied Physiology in Human Performance  U  3
This course will examine the application of physiological principles to human performance across the spectrum of exercise training paradigms, nutritional interventions, environmental challenges, and selected clinical exercise interventions.
Prereq: 3414.

4490 Graded Exercise Testing  U  1
Practical experiences in the development of aerobic training programs and fitness evaluation for a variety of adult and youth populations.
Prereq: 5685, or EduPAES 5661.01 and 5685; and proof of CPR First/AID certification; or permission of instructor. Not open to students with credit for EduPAES 490.10.

4525 Promoting Behavior Change in Sport, Leisure, & Exercise  U  3
This course introduces students to theories, mediators, and behavior change strategies applied to sport, leisure, and exercise settings and provides knowledge and opportunities to develop skills to promote adoption and adherence to physical activity.
Prereq: Admission to major in Exercise Science Education, Sport Industry; Human Nutrition; Health Promotion, Nutrition and Exercise Science; or Physical Education, Sport, and Physical Activity. Not open to students with credit for EduPAES 525.

4998 Research in Kinesiology: Health & Exercise Science  U  1 - 12
Independent study related to research in Kinesiology: Health and Exercise Science.
Prereq: Enrollment as KhES major, and permission of instructor.
4998H Research in Kinesiology: Health & Exercise Science U 1 - 12
Independent study related to research in Kinesiology: Health and Exercise Science.
Prereq: Enrollment as KnHES major, and permission of instructor.

5191 Internship: Health and Exercise Science U G 6 - 12
Prepares students to assume career-related responsibilities in Health and Exercise Science by providing a practical extended experience under the supervision of an exercise science professional.
Prereq: 4490 or 5590, and enrollment in Exercise Science Education major; or enrollment in master's program in Kinesiology, Health & Exercise Science concentration. This course is graded S/U.

5194 Group Studies: Health and Exercise Science U G 1 - 12
Group study in HES. Prereq: Open only to Exercise Science Education majors; permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions. This course is graded S/U.

5491 Body Composition Evaluation U G 1
Practical experience in the assessment and interpretation of body composition for a variety of adult, youth and special populations. Prereq: Jr standing, and proof of CPR First/AID certification. Not open to students with credit for EduPAES 490.11.

5492 Muscular Strength and Anaerobic Power Testing U G 1
Includes practical experiences in the understanding and application of muscular strength and anaerobic power testing. Experience in explanation, motivation of clients and evaluation of the results with application will be included. Prereq: Jr standing, and proof of CPR First/AID certification. Not open to students with credit for EduPAES 490.12.

5493 Fitness Program Development and Evaluation: Older Adult Exercise Prescription U G 1
Includes practical experiences with facilitated understanding in the assessment, development, delivery and evaluation in the area of individualized fitness and wellness programs. Prereq: Jr standing, and proof of CPR First/AID certification. Not open to students with credit for EduPAES 490.13.

5500 Science of Physical Activity for Health Care Professionals U G 4
Examines the primary human physiological systems and their response to acute and chronic exercise stimuli, as well as the effects of training and physical activity on health, fitness and human performance. Prereq: Jr standing or above. Not open to students enrolled in BS Exercise Science Education program.

5590 Comprehensive Laboratory in Exercise Science U G 3
This course provides practical experiences in comprehensive fitness testing, fitness evaluation and the development of training programming for the healthy adult and older adult populations. This course will focus on measuring and evaluating components of health related fitness, which include: cardiorespiratory system, body composition, muscular strength, muscular endurance, and flexibility. Prereq: CPR certification. Prereq or concur: 5685, and Jr, Sr, or Grad standing. Repeatable to a maximum of 6 cr hrs.

5651 Health Program Planning U G 3
The social, epidemiologic, behavioral and educational foundations of health promotion will be reviewed. Skills in: needs assessment, program planning, and program implementation will be developed. Prereq: Not open to students with credit for EduPAES 651.

5652 Worksite Health Promotion U G 3
Effective health promotion practice at the workplace. Skills: health needs assessment, health program decision-making, reviewing educational / health behavior literature, health behavior program planning, implementation, and evaluation. Prereq: Not open to students with credit for EduPAES 652.

5685 Adult Exercise Programming-Implementation U G 4
Introduction to adult exercise training and evaluation methods; emphasis on the implementation of programs for the normal healthy adult. Prereq: 3414 or EduPAES 3414. Not open to students with credit for EduPAES 685.

5703 Health Behavior Theory U G 3
Critical analysis of Health Behavior Theory. Review of professional literature on development and evaluation of theory based, health behavior change interventions. Prereq: 5652 (EduPAES 5652 (652)) or 5651 (EduPAES 5651 (651)); or grad standing. Not open to students with credit for EduPAES 703.

5704 Health Program Evaluation U G 3
Methods for evaluating health behavior interventions. Skills to conduct process, impact and outcome evaluations including data analysis will be developed. The political, educational and theoretical aspects of evaluation practices are covered. Prereq: 5652 (EduPAES 5652 (652)) or 5651 (EduPAES 5651 (651)); or Grad standing. Not open to students with credit for EduPAES 704.

7102 Science of Physical Activity and Nutrition for Coaches G 3
Examines the primary human physiological systems and their response to acute and chronic exercise stimuli, as well as the effects of training and physical activity on health, fitness and athletic performance. The role of nutrition in health and various sport types will be examined with a focus on mainstream current recommendations. Prereq: Enrollment in Master of Sports Coaching program.

7171 Foundations of Physical Activity Behavior G 3
Addresses the basic conceptual, methodological, and applied considerations in physical activity behavior. Prereq: Not open to students with credit for EduPAES 713.

7714 Advanced Physiology of Exercise G 4
Examines the physiological responses and adaptations to the demands and stresses of physical activity and exercise in humans and animals. Prereq: Not open to students with credit for EduPAES 714.

7720 Measurement in Physical Activity Behavior G 3
Addresses basic and advanced considerations in the measurement of physical activity behavior. Prereq: Not open to students with credit for EduPAES 720.

7726 Changing Physical Activity Behavior G 3
Introduction to theoretical foundations and research base of physical activity behavior. Demonstration of skills in analyzing and implementing appropriate methodologies for exercise behavior research and interventions for individuals and groups. Prereq: Not open to students with credit for EduPAES 726.

7996 Colloquium: Health and Exercise Science G 1 - 10
A forum for exercise science graduate students to present research proposals and results. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

8193 Advanced Individual Studies: Health and Exercise Science G 1 - 12
Advanced independent study in Health and Exercise Science. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions. This course is graded S/U.

8802 Seminar in Advanced Cardiorespiratory and Training Principles in Exercise G 3
Refines and increases your understanding of the cardiorespiratory aspects of exercise physiology. This course will provide a conceptual framework for understanding function in the healthy state and diseased state.

8803 Seminar in Exercise Metabolism G 3
Graduate seminar focusing on researching in the field of contemporary exercise metabolism. Prereq: Permission of instructor. Not open to students with credit for EduPAES 802.02.

8804 Skeletal Muscle Structure, Function, and Plasticity G 3
Devoted to the format of a graduate seminar. You will be responsible for researching a specific topic area in the field of contemporary skeletal muscle physiology. Prereq: Not open to students with credit for EduPAES 802.04.

8998 Research: Health and Exercise Science G 1 - 12
Research topics to be determined through discussion with adviser. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions. This course is graded S/U.

8999 Dissertation/Thesis Research: Health and Exercise Science G 1 - 9
Provides graduate students the opportunity to develop and conduct basic and applied health and exercise science research required for the completion of a thesis or dissertation. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 9 completions. This course is graded S/U.

Kinesiology: Physical Education

1208 Orientation to Sport and Leisure Studies U 3
Vocational opportunities, vocational preparation, and significant issues and information associated with sports, recreation and leisure, fitness, and physical education. Prereq: Not open to students with credit for EduPAES 208.

2201 Concepts of Fitness and Wellness U 3
Focuses on teaching physical fitness and wellness concepts to support instruction in schools and other settings such as community health organizations.

2262 Coaching the Young Athlete U 3
Skills and knowledge to coach young athletes.

2301 Teaching Invasion Games U 3
Prepares students to teach invasion games in educational settings. Prereq: Not open to students with credit for EduPAES 301.

2307 Adventure Based Learning U 3
Acquisition of performance skills including philosophy, facilitation techniques, and safety of adventure based learning activities and their roles in different settings. Prereq: Not open to students with credit for EduPAES 307.
Kinesiology: Physical Education

2542 Lifespan Motor Development
U  
An overview of the processes involved in motor development and physical growth across the lifespan. Implications of growth and development to teaching, coaching, and clinical settings will be examined.
PreReq: Not open to students with credit for EduPAES 542.

2601 Teaching Physical Education, Leisure and Exercise
U  
Designed to teach effective pedagogical and managerial skills for school, recreation and exercise settings.
PreReq: Not open to students with credit for EduPAES 620.

2620.02 Coaching: Basketball
U  
Study in the theory, strategy, and mechanics of coaching interscholastic and collegiate basketball. Advanced skill level in the elected sport.
PreReq: Jr standing, and permission of instructor. Not open to students with credit for EduPAES 620.02.

2620.04 Coaching: Football
U  
Study in the theory, strategy, and mechanics of coaching interscholastic and collegiate football. Advanced skill level in the elected sport.
PreReq: Jr standing. Not open to students with credit for EduPAES 620.04.

3199 Field Experience in Elementary Physical Education
U  
This field experience develops knowledge of elementary learners, schools, curriculum, pedagogy, pedagogical content knowledge, and assessment.
Concur: 3740. Admission to PETE undergraduate major or permission of the instructor. Not open to students with credit for EduPAES 689.01.

3193 Independent Study: Physical Education, Sport & Physical Activity
U 1 - 12
Advanced independent study in physical education.
PreReq: Enrollment in Physical Education, Sport & Physical Activity major, or permission of instructor. Repeatable to a maximum of 12 or hrs or 12 completions. This course is graded S/U.

3302 Teaching Racquet Sports
U  
Prepares students to teach racquet sports in educational settings.
PreReq: Admission to the PESPA major, coaching education minor or physical activity specialist minor. Not open to students with credit for EduPAES 302.

3305 Court Sports
U  
Prepares students to instruct techniques and tactics of court sports in sport, recreation and educational settings.
PreReq: Pre-major or major in PESPA, and coaching education minor or physical activity specialist minor.

3520 Content in Lower Elementary Physical Education
U  
An indepth analysis of the content and instruction of an lower elementary school Physical Education curriculum. Students will develop skills and knowledge in developmentally appropriate content in elementary physical education.
PreReq: Admission to a Physical Education teacher Education major. Not open to students with credit for EduPAES 520.

3521 Content in Upper Elementary Physical Education
U  
An indepth analysis of the content and instruction of the upper elementary school physical education curriculum. Students will develop skills and knowledge in developmentally appropriate content in elementary physical education.
PreReq: Admission to the PESPA major.

3740 Teaching Physical Education in Elementary Schools
U  
Provides pedagogical content knowledge in physical education at the elementary school level, and provide the opportunity to apply this knowledge in an elementary school environment.
PreReq: Admission to PETE undergraduate major, or permission of instructor. Concur: 3189. Not open to students with credit for EduPAES 740.

4189.02 Field Experience in Secondary Physical Education
U  
This field experience develops knowledge of secondary learners, schools, curriculum, pedagogy, pedagogical content knowledge, and assessment.
Concur: 4741. Admission to PETE undergraduate major or permission of the instructor. Not open to students with credit for EduPAES 689.02.

4191 Sports Coaching and Recreation Internship
U 1 - 15
Internship in sports coaching and recreation.
PreReq: Enrollment in the Physical Education, Sport, and Physical Activity major and Physical Activity and Coaching Specialist specialization. Repeatable to a maximum of 15 cr hrs.

4191.01 Internship: Elementary Physical Education
U  
Observation, participation, and responsible teaching in an elementary school setting.
PreReq: 4780, admitted to PETE undergraduate major, and GPA 2.75 or above. Not open to students with EduPAES 786.

4191.02 Internship: Secondary Physical Education
U  
Observation, analysis, and teaching in a public secondary school; dual and three-way conferences with supervisor and cooperating teacher.
PreReq: Admitted to PETE undergraduate major and GPA 2.75 or above. Concur: 4780. Not open to students with credit for EduPAES 786.

4741 Teaching Physical Education in Secondary Schools
U  
The purpose of this course is to provide pedagogy and pedagogical content knowledge in physical education at the secondary school.
PreReq: Admission to PETE undergraduate major or permission of instructor. Not open to students with credit for EduPAES 741.

4743 Teaching Health Education in Elementary, Middle and High Schools
U  
Methods for the teaching of comprehensive school health education (CSHE) in elementary, middle, and high schools. It is required for the teacher licensure program in health education teachers.

4780 Seminar for Student Teaching
U  
Seminar designed to connect students' school-based internship experiences with pedagogical knowledge through discussions and reflections about teaching physical education.
PreReq: admission to PETE undergraduate major and GPA 2.75 or above. Concur: 4191.01 and 4191.02. Not open to students with credit for EduPAES 780.

5194 Group Studies: Physical Education, Sport & Physical Activity
U 1 - 12
Activity
Group study in Physical Education.
PreReq: Open only to Physical Education, Sport & Physical Activity majors, and permission of instructor. Repeatable to a maximum of 12 or hrs or 12 completions. This course is graded S/U.

5521 Skill Analysis
U  
This course is designed to introduce students to effective coaching strategies and practices.
PreReq: Enrollment in undergraduate Physical Activity Specialist Strand of PESPA major or Coaching Education minor. Not open to students with credit for EduPAES 643.

5555 Perspectives on Coaching
U  
The course is designed to provide students with hands on, experiential activities that will foster an understanding of Japan and Japanese culture, and customs through lectures at Ohio State. Students will then participate in a two-week internship experiences with pedagogical knowledge through discussions and reflections about teaching physical education.
PreReq: Admission to PETE undergraduate major or permission of instructor. Not open to students with credit for EduPAES 687.

5576 Programming for Severe Physical Impairments
U  
Considerations related to the physical, motor and fitness needs of individuals with severe physical impairments within a physical activity context.
PreReq: Grad or Standing in EHE, or permission of instructor.

5709 Schools, Curriculum and Physical Education
U  
Examines the role of physical education within the social, historical, and philosophical foundations of education in the United States. We examine curriculum as a mechanism for the operationalization of different educational values and philosophies both as a theoretical exercise and as practice.
PreReq: 2601 or EduPAES 2601, or Grad standing.

5795 Exploring Japan through Sport, Wellness and Culture
U  
The Exploring Japan through Sport, Wellness and Culture course is designed to provide students with hands on, experiential activities that will foster an understanding of Japanese and Japanese culture. Prior learning for Japan, students will be exposed to the Japanese language and customs through lectures at Ohio State. Students will then participate in a two-week experience in Japan that will include participating in the Tsukuba Summer Institute (8 days) plus cultural excursions to Tokyo, Tsukuba Shrine, and Nikko. Enrollment preference given to Physical Education, Sport and Physical Activity majors.
Repeatable to a maximum of 6 or hrs.

6100 Race, Gender and Culture in Sports
G  
Provides students with knowledge, understanding, and experiences related to the following topics in sport: ethnicity and race, gender, culture, religion, and language, participation and socialization, social theories, and critical race and social justice theories.
PreReq: Enrollment in Master of Sports Coaching program.
6101 Ethics of Coaching (3 cr.)
Examines ethical and moral issues that are central to coaching in contemporary sport setting and addresses the way in which we should treat human beings in sports settings. Issues such as fairness, equality, integrity, and sport's purpose will be discussed and questions of an ethical and moral nature. Prereq: Enrollment in Master of Sports Coaching program.

6222 Recruiting Student-Athletes for College Athletics (3 cr.)
Recruiting college student-athletes represents one of the most important tasks that coaches engage in to ensure their success. This course examines the key concepts, knowledge and skills in recruiting student-athletes to college. We examine recruitment form the perspective of the recruiter and the student-athlete.

6642 Sport Skill and Game Analysis (3 cr.)
The course is designed to provide students with both the knowledge and skills required to successfully conduct a qualitative analysis of skills and games using technological tools. Integrations of theory and practice are reflected in a variety of assignments, projects, and group discussion of practical issues in coaching. Prereq: Enrollment in Master of Sports Coaching program.

6643 Coaching Effectiveness and Expertise (3 cr.)
This class is about developing an understanding of the effective coaching behaviors in particular domains, and determining why and what you believe about these effective coaching practices. Prereq: Enrollment in Master of Sports Coaching program.

7100 Mental Preparation and Performance in Sport (3 cr.)
Examination of psychological theories and research related to mental preparation and performance in sport. An introduction to the field which will provide broad overview of the major topics in the area. Prereq: Enrollment in Master of Sports Coaching program.

7103 Research on Coaches (3 cr.)
Students learn about research methods and design, and develop and conduct mini-action research; derived from their practice. Students develop skills in the questions they generate about their professional practice, and to engage in structured inquiry as a strategy for enhancing coaching environments. Prereq: Enrollment in Master of Sports Coaching program.

7104 Proseminar for Coaches (3 cr.)
This prosemninar focuses on the development of knowledge, abilities, and dispositions necessary for effective, participative, and productive leadership in coaching settings. Topics covered in this course include leadership skills, interpersonal relationships, organizational membership, branding, the relationship between the sports team and the community. Prereq: Enrollment in Master of Sports Coaching program.

7754 Advanced Motor Development and Learning (3 cr.)
Physical growth and motor skill acquisition from infancy to adolescence. Principles of motor learning, atention to content about teaching, coaching, and clinical settings. Prereq: Not open to students with credit for EduPAES 754 or 851.

7863 Teaching Health and Fitness Courses at the College Level (3 cr.)
Enhances the preparation of students to teach health and fitness courses at the college level. Prereq: Admission to PETE or PA Grad program, or permission of instructor. Not open to students with credit for EduPAES 863.

7868 Research on Teaching in Physical Education (3 cr.)
Provides students with a basis for understanding three decades of research in this area. The student will develop competencies as a consumer of educational research and practice and as a teacher educator. Prereq: Admission to PETE or PA Grad program, or permission of instructor. Not open to students with credit for EduPAES 868.

8193 Advanced Individual Studies: Physical Education, Sport & Physical Activity (1 - 12 cr.)
Advanced independent study course in physical education or adapted physical education. Prereq: Admission to Kinesiology graduate program, and permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions. This course is graded S/U.

8865 Advanced Socio-cultural issues in Physical Education (3 cr.)
Examines issues of gender, race, health, class, disability, religion, and homophobia within the context of physical education and physical education teacher education. Prereq: Admission to Grad program in Physical Education, or permission of instructor. Not open to students with credit for EduPAES 865.

8872 Advanced Study in Adapted Physical Education (3 cr.)
Provides students the opportunity to study advanced topics essential to Adapted Physical Education. Prereq: Admission to Grad major in Kinesiology, or permission of instructor. Not open to students with credit for EduPAES 872.

8891 Doctoral Seminar in Physical Education (3 cr.)
Seminar that examines the theoretical, methodological, and practical aspects of research in the physical education field. Specific content of the course will vary from semester to semester. Prereq: Enrollment in the Kinesiology Ph.D. program, or permission of instructor. Repeatable to a maximum of 18 cr hrs.

Kinesiology: Physical Education (277 cr.)

8892 Research Seminar in Physical Education Teacher (3 cr.)
Research seminar designed to enhance students' knowledge on current experimental techniques, theories and models of physical education, sport and physical activity with an emphasis on preparing physical education teachers. Prereq: Enrollment in the Ed.D. in Kinesiology or Physical Education Concentration, or permission of instructor. Repeatable to a maximum of 18 cr hrs.

8998 Research: Physical Education, Sport & Physical Activity (1 - 12 cr.)
Examines the processes product, mediating product, and ecological paradigms in educational research from their beginnings in the 1970's to the present day. Prereq: Grad standing in Physical Education, or permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions. This course is graded S/U.

8999 Dissertation/Thesis Research: Physical Education, Sport & Physical Activity (1 - 6 cr.)
Dissertation research in physical education or adapted physical education. Prereq: Admission into Kinesiology graduate program, and permission of the instructor. Repeatable to a maximum of 9 cr hrs or 9 completions. This course is graded S/U.

Kinesiology: Sport, Fitness, and Health Program

1102 First Aid and CPR (2 cr.)
Necessary skills to sustain life, reduce pain, and minimize consequences of injury/fatality during an emergency. Course is designed to lead to Certification. Lab fees required. Prereq: Not open to students with credit for EduPAES 102.

1103 Introduction to Health and Wellness in American Society (2 cr.)
A study of student health problems: designed to foster understandings and attitudes needed for intelligent decision-making related to present and future health needs. Prereq: Grad standing in Physical Education or adapted physical education.

1104 Stress Management for the College Student (3 cr.)
This course is designed to help students learn to identify, understand, prevent and manage stress as it occurs in everyday life. The course has two components: the lecture component will address the cognitive approach to stress management; the lab portion will allow students to experience the fundamentals of yoga and its role in stress reduction in the physical, psychological & spiritual domains.

1137 Sport for the Spectator (2 cr.)
The study of various popular spectator sports including football, basketball, baseball, golf, tennis, ice hockey and others.

1139.01 Introductory Program of Outdoor Pursuits: Scuba II (1 cr.)
Introduction to fresh water diving. Student responsible for travel and activity costs. Student must be a diver. Prereq: 1139.01 or 1139.03, or equiv, and permission of instructor. Not open to students with credit for EduPAES 1139.01. This course is graded S/U.

1139.02 Introductory Program of Outdoor Pursuits: Whitewater Rafting (1 cr.)
Introduction to basic whitewater rafting, including: river reading, paddling techniques, equipment, trip planning, and safety. Student must provide sleeping bag and appropriate clothing for river conditions. Prereq: Permission of instructor. Not open to students with credit for EduPAES 1139.02. This course is graded S/U.

1139.03 Introductory Program of Outdoor Pursuits: Backpacking I (1 cr.)
Introduction to basic backpacking techniques, equipment, wilderness travel, emergency procedures, and environmental awareness. Travel and subsistence costs for activities will be borne by the student. Student must provide sleeping bag and hiking boots. Prereq: Permission of instructor. Not open to students with credit for EduPAES 1139.03. This course is graded S/U.

1139.06 Introductory Program of Outdoor Pursuits: Skiing I (1 cr.)
Beginning skills and knowledge needed for outdoor skiing. Students must provide equipment. Prereq: Permission of instructor. This course is graded S/U.

1139.07 Introductory Program of Outdoor Pursuits: Experimental Sections (1 cr.)
Activities will be announced and publicized whenever an experimental section is deemed worthy of trial. Prereq: Permission of instructor. Not open to students with credit for EduPAES 1139.07. This course is graded S/U.

1139.08 Introductory Program of Outdoor Pursuits: Fly Fishing (1 cr.)
Introduction to basic materials and methods of fly fishing including choosing and using proper equipment suited for fly fishing in ponds, lakes and rivers in the Midwest. Prereq: Permission of instructor. Not open to students with credit for EduPAES 1139.08. This course is graded S/U.

1139.09 Introductory Program of Outdoor Pursuits: Caving I (1 cr.)
Introduction to basic caving techniques, equipment, trip planning, and safety; cave related ecology, flora, and fauna will also be emphasized. Travel and subsistence costs for activities will be borne by the student. Student must provide sleeping bag. Prereq: Permission of instructor. Not open to students with credit for EduPAES 1139.09. This course is graded S/U.
1139.11 Introductory Program of Outdoor Pursuits: Rock Climbing U 1
Basic rock climbing techniques, rope handling, and safety systems will be covered. Must be in good physical condition. Travel and subsistence costs for activities will be borne by the student. Students must provide sleeping bag and climbing equipment. Prereq: Not open to students with credit for EduPAES 139.11. This course is graded S/U.

1139.14 Introductory Program of Outdoor Pursuits: Skydiving U 1
Introduction to skydiving including techniques, safe practice and strategies. Students will have the opportunity to skydive; however, it is not required to pass the course. Prereq: Permission of instructor. Not open to students with credit for EduPAES 139.14. This course is graded S/U.

1139.15 Introduction to Body Flight U 1
The purpose of this class is to introduce students to the concepts of human body flight without vehicle assistance. Instruction will include historical development of body flight, various facility types and the challenges each style presents. Concepts of aeronautics, competition, artistry, leisure, basic flying styles and safe practices will be taught. Repeatable to a maximum of 2 or hrs. This course is graded S/U.

1139.18 Introductory Program of Outdoor Pursuits: Hot Air Ballooning U 1
Introduction to hot air ballooning. Covers history, design, structure, and flight procedures of the modern balloon. Students crew fly and act as balloon chasers. Prereq: Not open to students with credit for EduPAES 139.18. This course is graded S/U.

1139.21 Introductory Whitewater Kayaking U 1
The purpose of this course is to provide the student with the beginning level skills and knowledge in whitewater kayaking. As a result the student will improve his/her general physical fitness and skill performance. Principles, techniques, safe practices and strategies of whitewater kayaking will be taught throughout the course. This is an introductory course for beginners.

1139.22 Introductory Sea Kayaking U 1
To provide the student with the beginning level skills and knowledge in sea kayaking. As a result the student will improve his/her general physical fitness and skill performance. Principles, techniques, safe practices and strategies of sea kayaking will be taught throughout the course. This is an introductory course for beginners. This course is graded S/U.

1139.24 Advanced Scuba U 1
Advanced Scuba can be different for each student involved. It consists of the continuing educational system of specialty courses involved in Scuba diving. Available courses include, ice diving, night diving, Deep diving, Digit diving, Drysuit diving. Prereq: Successful completion of KnSFHP 1139.01, and certification or certification as an Open Water Diver through a nationally recognized scuba diving organization. Some specialty areas require certification as an Advanced Open Water Diver. Repeatable to a maximum of 2 or hrs. This course is graded S/U.

1140.05 Outdoor Pursuits Program: Lake Erie Sport Fishing U 2
Techniques and equipment used in Lake Erie sport fishing featuring Lake Erie angling trips with lectures that include related aquatic science information. Prereq: Permission of instructor. Not open to students with credit for EduPAES 140.05.

1140.10 Outdoor Pursuits Program: Wilderness First Aid U 1
Will train and certify students to cope with basic wilderness hazards and medical emergencies. Up on successful completion of the course students will receive a SOLO WFA completion card valid for 3 years. Prereq: Not open to students with credit for EduPAES 140.10. This course is graded S/U.

1140.11 Wilderness First Responder U 3
The Wilderness First Responder course will provide students the knowledge and skills needed to respond to backcountry medical and trauma situations. This is an 80-hr intensive course that meets 8-10 consecutive days between semesters or during a 4-week Session. Upon successful completion students will receive a Wilderness First Responder completion card valid for 3 years. Additional fee required.

1141.01 Wall Climbing U 1
Introduction of basic rock wall climbing techniques including rope handling and safety systems.

1141.02 Intermediate Wall Climbing U 1
To provide the student with intermediate techniques, lead climbing and training concepts of wall climbing. Prereq: 1141.01, EduPAES 1141, or equiv.

1143.01 Badminton I U 1
Beginning skills and knowledge essential for playing badminton. Prereq: Not open to students with credit for EduPAES 143.01.

1143.02 Badminton II U 1
Continuation of 1143.01 with emphasis on advanced strategy in doubles and singles; intermediate skills. Prereq: 1143.01 or EduPAES 1143.01, or equiv. Not open to students with credit for EduPAES 143.02.

1144.01 Basketball Women U 1
Skill and strategy necessary for playing basketball. Prereq: Limited to women only. Not open to students with credit for EduPAES 144.01.

1144.02 Basketball Men U 1
Skill and strategy necessary for playing basketball. Prereq: Limited to men only. Not open to students with credit for EduPAES 144.02.

1146 Boxing for Beginners U 1
Introductory skills and knowledge necessary for boxing. Light contact sparring only. Students must provide boxing gloves and mouthguard.

1147 Principles of Fitness and Wellness U 2
Course is designed to introduce students to concepts of wellness which include domains of the physical, social, emotional, spiritual, environmental, occupational, intellectual, and financial. The course will emphasize the relationship between wellness and quality of life over the lifespan. Students will develop a personal program that includes exercise, nutrition, and disease prevention.

1148.01 Conditioning Activities: Circuit Training U 1
Students will participate in circuit training which combines strength and cardiovascular endurance activities.

1148.02 Conditioning Activities: Jogging U 1
Students will participate in a progressive jogging program in which they will jog from 1-3.5 miles.

1148.03 Conditioning Activities: Swimming U 1
Student will participate in a progressive swim conditioning program that culminates in an end-of-the-semester class swim meet.

1148.04 Conditioning Activities: Strength Training U 1
Students will participate in a progressive strength and endurance training program using weight machines, free weights, and other strength equipment.

1148.05 Conditioning Activities: Cardio Exercise Training U 1
Students will participate in a progressive cardiovascular exercise training program that will utilize popular stationary equipment including treadmills, elliptical machines, cycles, and rowing machines.

1148.06 Conditioning Activities: Group Fitness U 1
Students will participate in a progressive aerobics program that will include: step, body sculpting, cardio dance, HITT (high intensity interval training) and boot camp style training.

1148.07 Conditioning Activities: Pilates U 1
Students will participate in a progressive exercise program that utilizes pilates.

1148.08 Conditioning Activities: Kickboxing U 1
Students will participate in a progressive exercise program that utilizes kickboxing.

1148.09 Indoor Cycling U 1
This course is designed for students with little to no experience with indoor cycling, and for those interested in taking a more focused approach to indoor cycling. The class will introduce students to the concept of indoor cycling as a means to increased fitness. Students will complete cycle workouts that focus on cardiovascular training using the indoor cycle.

1148.10 Circuit Cycling U 1
This course is designed for students with little to no experience with circuit training utilizing free weight strength equipment and indoor cycles, and for those interested in taking a more focused approach to indoor cycling in the format of circuit training. The class will introduce students to the concept of circuit training on and off the indoor cycle as a means to increased fitness.

1150.01 Lifetime Fitness and Wellness Strength Training U 2
Online course that promotes principles of fitness and wellness over the lifespan. Prereq: Not open to students with credit for 1147, 1148.04 or 1149.04 1150.02, or EduPAES 1147, 1148.04, 1149.04, 1150.01, or 1150.02.

1150.02 Lifetime Fitness and Wellness Cardiovascular Exercise Training U 2
Online course that promotes principles of fitness and wellness over the lifespan. Prereq: Not open to students with credit for 1147, 1148.04 or 1149.04 1150.05, or EduPAES 1147, 1148.04, 1149.04, 1150.05, or 1150.01.

1151 Strength Training II U 1
Strength and power training; advanced anaerobic and speed conditioning. Prereq: 1148.04 or 1149.04, or EduPAES 1148.04 or 1149.04, or equiv. Repeatable to a maximum of 2 or hrs or 3 completions.

1152.01 Social Dance I Women U 1
Introduction to basic steps and variations of selected dances such as the foxtrot, waltz, and swing. Limited to women only. Prereq: Not open to students with credit for 1152.01 or EduPAES 1152.01 (152.01).

1152.02 Social Dance I Men U 1
Introduction to basic steps and variations of selected dances such as the foxtrot, waltz, and swing. Limited to men only. Prereq: Not open to students with credit for 1152.01 or EduPAES 1152.01 (152.01).
1152.03 Social Dance II Women U 1 Continuation of 1152.01 with emphasis on style and technique; introduction to additional social dance contents. Limited to women only.
Prereq: 1152.01 or EduPAES 1152.01 (152.01), or equiv. Not open to students with credit for 1152.04, or EduPAES 1152.04 (152.04). Repeatable to a maximum of 3 cr hrs.

1152.04 Social Dance II Men U 1 Continuation of 1152.02 with emphasis on style and technique; introduction to additional social dance contents. Limited to men only.
Prereq: 1152.02, or EduPAES 1152.02, or equiv. Not open to students with credit for 1152.03, or EduPAES 1152.03 (152.03).

1152.07 Line Dancing U 1 To provide the student with basic skill level and knowledge of line dancing. Principles, techniques, safe practices and various types of line dances will be taught throughout the course.

1152.08 LaBlast Fitness Foundations U 1 Introduces students to LaBlast Fitness Foundations basic concepts which is a balance between dance and fitness, based on ballet and Jazz dance steps but partner-free. Beginning with basic rhythms for dancing and line dancing on the basic steps, students will learn to combine steps into patterns and combinations for each style of dance. Principles, techniques, safe practices and posture will be covered.

1154.01 Fencing I U 1 Basic skills and knowledge needed for foil fencing.
Prereq: Not open to students with credit for EduPAES 154.01.

1155.01 Physical Fitness Training for the ROTC: Army U 1 Designed to allow ROTC student to demonstrate improvement in overall physical conditioning, body composition, and general health.
Prereq: Must be enrolled in Army ROTC. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

1155.02 Physical Fitness Training for the ROTC: Navy U 1 Designed to allow ROTC student to demonstrate improvement in overall physical conditioning, body composition, and general health.
Prereq: Must be enrolled in Navy ROTC. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

1156 Flag Football U 1 Fundamental skills of flag football.
Prereq: Not open to students with credit for EduPAES 156.03.

1157.01 Golf I U 1 Introductory skills and knowledge preparatory to course play with emphasis on driving, putting, and chipping.
Prereq: Not open to students with credit for EduPAES 157.01.

1157.02 Golf II U 1 Continuation of 1157.01 with emphasis on introduction to course play.
Prereq: 1157.01, or EduPAES 1157.01 or equiv. Repeatable to a maximum of 3 cr hrs.

1157.03 Golf For Business and Life U 1 Provides the student with an introduction to golf skills, golf rules, etiquette and terms, and golf history. The primary instructor, along with scheduled golf professionals and guest speakers will teach this course. Speakers from business will share what part golf played in their success and how golf can help the students in their business and personal life.

1158.01 Tumbling I U 1 Introduction to basic through advanced-basic tumbling skills.
Prereq: Not open to students with credit for EduPAES 158.01.

1158.02 Tumbling II U 1 Introduction to advanced-basic through intermediate tumbling skills.
Prereq: 1158.01, or EduPAES 1158.01 or equiv. Repeatable to a maximum of 3 cr hrs.

1161.01 Horseback Riding: Western Style I U 1 Student will safely halt, lead, groom, saddle, bridle, ride at a walk and jog/canter in the Western riding discipline. Go to go.osu.edu/ridingclasses to schedule individual riding times.
Prereq: Travel and stable costs are responsibility of the student. Not open to students with credit for EduPAES 161.01. This course is graded S/U.

1161.02 Horseback Riding: Western Style II U 1 Student will effectively troubleshoot equipment, walk, jog, or trot without breaking gait, halts on command; learn to canter/lope, and good seat and control. Go to go.osu.edu/ridingclasses to schedule individual riding times.
Prereq: 1161.01, EduPAES 1161.01, or prior experience; travel and stable costs (rental of horse and equipment) for activities must be borne by the student. Not open to students with credit for EduPAES 161.02. This course is graded S/U.

1161.03 Horseback Riding: Western Style III U 1 Student will refine level I and II skills, effectively execute patterns and transitions; identify and explain bits, clean equipment, identify concentrates and roughages (feeding). Go to go.osu.edu/ridingclasses to schedule individual riding times.
Prereq: 1161.02, EduPAES 1161.02, or equiv; travel and stable costs (rental of horse and equipment) for activities must be borne by the student. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

1161.05 Horseback Riding: English Style I U 1 Student will safely halt, lead, groom, saddle, bridle, ride at a walk and jog/canter in the English riding discipline. Go to go.osu.edu/ridingclasses to schedule individual riding times.
Prereq: Travel and stable costs are responsibility of the student. Not open to students with credit for EduPAES 161.05. This course is graded S/U.

1161.06 Horseback Riding: English Style II U 1 Student will effectively access equipment; walk, jog, or trot without breaking gait, halts on command; learn to canter/lope, and good seat and control. Go to go.osu.edu/ridingclasses to schedule individual riding times.
Prereq: Travel and stable costs are responsibility of the student. Not open to students with credit for EduPAES 161.06. This course is graded S/U.

1161.07 Horseback Riding: English Style III U 1 Student will refine level I and II skills, effectively execute patterns and transitions; identify and explain bits, clean equipment, be able to explain feeding basics. Go to go.osu.edu/ridingclasses to schedule individual riding times.
Prereq: 1161.06, or EduPAES 1161.06 or equiv; travel and stable costs (rental of horse and equipment) for activities must be borne by the student. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

1169.02 Martial Arts Forms: Judo I U 1 Introductory skills and knowledge essential in throwing techniques and mat work of Judo.
Prereq: Not open to students with credit for 1169.03, EduPAES 1169.03, or 169.04.

1169.04 Martial Arts Forms: Karate I U 1 Introduction to the fundamental forms and techniques of Karate.
Prereq: Not open to students with credit for EduPAES 169.07.

1169.06 Martial Arts Forms: Shuai Chiao U 1 Introduction to the various forms and techniques of Shuai Chiao-Chinese wrestling, a combination of Karate and Judo.
Prereq: Not open to students with credit for EduPAES 169.10.

1169.07 Martial Arts Forms: Tae Kwon Do I U 1 Beginning course in the Korean martial art form; includes etiquette, basic blocking, thrusting and kicking techniques, and self defense.
Prereq: Not open to students with credit for EduPAES 169.13.

1169.09 Martial Arts Forms: Tai Chi Ch'uan I U 1 An introduction to Tai Chi Ch'uan with emphasis on an exploration of body/energy awareness.
Prereq: Not open to students with credit for EduPAES 169.16.

1170.01 Racquetball I U 1 Beginning skills and knowledge for students with no prior experience in racquetball.
Prereq: Not open to students with credit for EduPAES 170.01.

1172.01 Self Defense Women U 1 Skills and understandings essential to defend oneself against an aggressor with emphasis on avoiding attack.
Prereq: Limited to women only. Not open to students with credit for EduPAES 172.01.

1172.02 Self Defense Men U 1 Skills and understandings essential to defend oneself against an aggressor with emphasis on avoiding attack.
Prereq: Limited to men only. Not open to students with credit for EduPAES 172.02.

1174 Soccer U 1 Techniques and knowledge essential for playing soccer.
Prereq: Not open to students with credit for EduPAES 174.

1178.01 Swimming I U 1 Beginning swimming. Open only to non-swimmers and students with no deep water experience.
Prereq: Students must provide bathing suit. Not open to students with credit for EduPAES 178.01.

1178.02 Swimming II U 1 Elementary swimming skills for those who can swim in deep water but no farther than 2 pool lengths (50 yards).
Repeatable to a maximum of 3 cr hrs.

1178.03 Swimming III U 1 Intermediate skills for those who can swim at least 100 yards using the front crawl and at least 2 other strokes. Student must provide bathing suit.
Repeatable to a maximum of 3 cr hrs.
Skin and Scuba Diving  U  2
Skills and knowledge essential for safe diving and preparation for open water checkout dives. Prereq: Must be a member of the OSU varsity squad. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

Varsity Squads: Baseball  U  1
Participation as a player on an OSU varsity squad. Prereq: Must be a member of the OSU varsity baseball squad. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

Varsity Squads: Swimming  U  1
Participation as a player on an OSU varsity squad. Prereq: Must be a member of the OSU varsity swimming squad. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

Volleyball I  U  1
Introduction to power volleyball. Prereq: Not open to students with credit for EduPAES 191.01.

Volleyball II  U  1
Continuation of power volleyball fundamental skill perfection and game strategies woven to produce an intermediate playing experience. Prereq: 191.01, or EduPAES 191.01, or equiv. Repeatable to a maximum of 3 cr hrs.

Yoga I  U  1
Introduction to fundamental techniques and basic yogic principles of pranayama (breath control), asana (posture), relaxation, and meditation; emphasis on major postures. Prereq: Not open to students with credit for EduPAES 195.01.

Yoga II  U  1
Asanas (postures) at the intermediate level of Hatha yoga are introduced; continued development and practice of relaxation and meditative techniques; further exploration of yogic philosophy. Prereq: 195.01, or EduPAES 195.01, or equiv. Repeatable to a maximum of 3 cr hrs.

Varsity Squads: Baseball  U  2
Participation as a player on an OSU varsity squad. Prereq: Must be a member of the OSU varsity baseball squad. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

Varsity Squads: Basketball  U  2
Participation as a player on an OSU varsity squad. Prereq: Must be a member of the OSU varsity basketball squad. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

Varsity Squads: Cross Country  U  2
Participation as a player on an OSU varsity squad. Prereq: Must be a member of the OSU varsity cross country squad. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

Varsity Squads: Fencing  U  2
Participation as a player on an OSU varsity squad. Prereq: Must be a member of the OSU varsity fencing squad. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

Varsity Squads: Field Hockey  U  2
Participation as a player on an OSU varsity squad. Prereq: Must be a member of the OSU varsity field hockey squad. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

Varsity Squads: Football  U  2
Participation as a player on an OSU varsity squad. Prereq: Must be a member of the OSU varsity football squad. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

Varsity Squads: Golf  U  2
Participation as a player on an OSU varsity squad. Prereq: Must be a member of the OSU varsity golf squad. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

Varsity Squads: Gymnastics  U  2
Participation as a player on an OSU varsity squad. Prereq: Must be a member of the OSU varsity gymnastics squad. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

Varsity Squads: Ice Hockey  U  2
Participation as a player on an OSU varsity squad. Prereq: Must be a member of the OSU varsity ice hockey squad. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.
2100 Introduction to Esports and Game Studies U 3
This course will take a broad look at topics relevant to Esports and game studies such as history, social context, biomedical, physiology, science and technology, player development, humanistic values, transnational applications and the management and the business of Esports.

2210 History of Sport in 19th Century America U 3
Explores intersection between sport and society in 19th century America. Emphasis on modernity; race, class, gender & ethnicity; rise of the city; religious, intellectual and scientific thought. 
Prereq: Not open to students with credit for EduPAES 210. GE historical study course.

2211 History of Sport in 20th Century America U 3
Explores intersection between sport and society in 20th century America. Emphasis on consumerism; race, class, gender & ethnicity; mass media; sport in a global world. 
Prereq: Not open to students with credit for EduPAES 211. GE historical study course.

2260 Sport in Contemporary America U 3
Examination of intersection of sport and society in contemporary America. 
Prereq: Not open to students with credit for EduPAES 260.

3189 Field Experience: Sport Industry U 3
Orientation to and professional experience in sports industry. 
Prereq: Enrollment in Sport Industry major. Not open to students with credit for EduPAES 289.03.

3193 Independent Study: Sport Industry U 1 - 12
Independent study in Sport Industry. 
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions. 
This course is graded S/U.

3208 The Sport Industry U 3
Examination of the Sport Industry. 
Prereq: Major in Sport Industry.

3550 Entertainment & Brand Licensing in Sport, Fashion, and Hospitality Industries U 3
This course will provide the student with a basic introduction into the world of sport and entertainment brand licensing. The licensing of brands, characters, sports team names, college logos and artwork, often called 'merchandising,' has become a huge business; the course will take students through the various steps of identifying, protecting, and conducting a licensing program. 
Prereq: Enrollment in Sport Industry, Fashion and Retail Studies, or Hospitality Management Major.

3798 The European Model of Sports U 3
The European Model of Sport is a study abroad program that takes students on a seminar through Europe, giving them a unique firsthand experience in international sports. The course is designed to introduce students to the European model of sport management, marketing, and sports law, and to provide students with an understanding of the changing context for sport in a global society. Scheduling priority given to Sport Industry majors. Repeatable to a maximum of 6 cr hrs.

4191 Internship: Sport Industry U 6
Directed and supervised experience in a Sport Industry setting. 
Prereq: 3189 or EduPAES 2189.21. Not open to students with credit for EduPAES 489.05 or 589.03. This course is graded S/U.

4245 Leadership & Programming in Sports Industry U 3
Methods of leadership and programming in sport industry organizations. 
Prereq: Major in Sport Industry or minor in Coaching Education.

4411 College Sport U 3
Historical development of college sport; influence of race, class and gender; mass media; consumer society; place of college sport in American higher education and culture. 
Prereq: Enrollment in Sport Industry major. Not open to students with credit for EduPAES 411.

4509 Sport Marketing and Promotion U 3
Issues related to the marketing and promotion of sport. 
Prereq: Major in Sport Industry or minor in Coaching Education.

4607 Legal Aspects of Sport U 3
Introduction to the American legal system and major cases/laws which make up sports law. 
Prereq: Major in Sport Industry or Coaching Education minor. Not open to students with credit for EduPAES 607.

4615 Sport and Social Values U 3
Role of social values play in sport, with emphasis on civic virtue; fair play and social justice; violence/abuses in sport. 
Prereq: Enrollment in Sport Industry major. Not open to students with credit for EduPAES 615.

4900 Researching in Sports Industry U 3
Upper-level undergraduate class on various aspects of sport industry research methods that gives a general introduction to social research methods and will cover four broad topics: the foundations of sport industry research, research design, data collection, and data analysis. 
Prereq: Enrollment in Sport Industry program.

5610 Women's Sport History U G 3
Examines development of women's sport from primitive cultures to contemporary society. 
Prereq: Jr standing or above. Not open to students with credit for EduPAES 610.

5614 Sport and Sexuality U G 3
How conceptualization of sexuality shape and are shaped by sport. 
Prereq: Jr standing or above. Not open to students with credit for EduPAES 614.

5626 Sport and Popular Culture U G 3
Examines popular culture's influence on sport and sport as expression of popular culture. 
Prereq: Jr standing or above. Not open to students with credit for both EduPAES 626.01 and 626.02.

5630 Recreational Sport Leadership U G 3
A study of current issues, management techniques, and programming concepts associated with the administration of campus recreation programs. 
Prereq: Jr standing or above. Not open to students with credit for EduPAES 630.

6189 Practicum: Sport Management G 3
Opportunity to put professional theory and research into practice under supervision in University, school and agency settings. 
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

6191 Master's Internship/Practicum: Sport Management G 3 - 8
Full-time professional development experience at an approved sport worksite setting. Opportunity to apply theory and skills learned in class under direction of on-site supervisor. 
Prereq: Permission of instructor. This course is graded S/U.

6807 Sport Law G 3
Study of legal issues affecting the delivery of sport services; focus on liability in sport activities. 
Prereq: Grad standing. Not open to students with credit for EduPAES 807.

6808 Management of Sport Delivery Systems G 3
Application of contemporary management theories and techniques in the structures and processes of sport delivery systems. 
Prereq: Grad standing.

6809 Sport Marketing G 3
Examination and utilization of basic marketing principles in the areas of sport (collegiate and professional) recreation. 
Prereq: Grad standing. Not open to students with credit for EduPAES 809.

6837 Event and Facility Management for Sport Managers G 3
Examines the principles and practices of planning and managing sport events and facilities. 
Prereq: Not open to students with credit for EduPAES 837.

6842 Business of College Sports G 3
Provides business analysis of intercollegiate athletics, including an in depth look at OSU athletic program; develop understanding of college sports administration, educational, business missions. 
Prereq: Sport Management major, and Grad standing; or permission of instructor. Not open to students with credit for EduPAES 842 or BusMHR 870. Cross-listed in BusMHR 7605.

7897 Colloquium in Sport Management G 3
Current research in Sport Management. 
Prereq: Sport Management major, and Grad standing; or permission of instructor. Repeatable to a maximum of 15 cr hrs.

7906 Understanding Sport Consumers: Theoretical Perspectives G 3
Acquaints students with issues related to sport consumers' behaviors by discussing pertinent theories and implications to sport consumer behavior. 
Prereq: Grad standing, and Sport Management major; or permission of instructor. Not open to students with credit for EduPAES 806.

8193 Advanced Individual Studies: Sport Management G 1 - 12
Advanced independent study in Sport Management. 
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions. This course is graded S/U.

8194 Advanced Group Studies: Sport Management G 1 - 5
Advanced group studies in Sports Management. 
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions.

8951 Theoretical Approaches to Sport Organizations G 3
Organization and management theory applied to sport organizations. 
Prereq: Major in Sport Management, and Grad standing; or permission of instructor. Not open to students with credit for EduPAES 951 or 952. Repeatable to a maximum of 6 cr hrs.

8998 Research: Sport Management G 1 - 4
Research topics to be determined through discussion with advisor. Repeatable to a maximum of 12 cr hrs or 12 completions.

8999 Dissertation/Thesis Research: Sport Management G 1 - 9
Research for thesis or dissertation purposes only. 
Prereq: Post-candidacy and Doct standing in Sport Management, and permission of instructor. Repeatable to a maximum of 9 cr hrs or 9 completions. This course is graded S/U.
Korean

1101.01 Level One Korean I: Classroom Track U 4
Standard modern Korean: development of listening and speaking skills; basic grammar; reading and writing of the Korean script (hangul). Classroom Track. Not open to native speakers or students with 3+ years at high school level.
Prereq: Not open to students with credit for 101.01 or 102.01. This course is available for EM credit. GE for lang course. FL Admin Cond course.

1101.51 Level One Korean I: Individualized Instruction U 1 - 4
Standard modern Korean: development of listening and speaking skills; basic grammar; reading and writing of the Korean script (hangul). Individualized Track. Prereq: Not open to students with credit for 101.51, 102.51, or to native speakers of this language through regular course enrollment or EM credit; or to students with 3 or more years of study in this language in high school, except by permission of dept. Repeatable to a maximum of 4 cr hrs or 4 completions. This course is available for EM credit. GE for lang course. FL Admin Cond course.

1102.01 Level One Korean II: Classroom Track U 4
Continuation of 1101. Classroom Track.
Prereq: 1101.01 or 1101.02, or 4 cr hrs of 1101.51 or equivalent. Not open to students with credit for 102.01, 103.01, or to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GE for lang course. FL Admin Cond course.

1102.51 Level One Korean II: Individualized Instruction U 1 - 4
Continuation of 1101. Individualized Track. Progress is sequential from one cr hr to the next with a demonstrated proficiency at the level of 80% required for advancement.
Prereq: 1101.01 or 1101.02, or 4 cr hrs of 1101.51 or equiv. Advancement to the first credit in this course in the same semester as the completion of the 4th credit for 1101.51 requires registration for both courses, with permission of instructor. Not open to students with credit for 102.51, 103.51, or to native speakers of this language through regular course enrollment or EM credit. Repeatable to a maximum of 4 cr hrs or 4 completions. This course is available for EM credit. GE for lang course. FL Admin Cond course.

1103.01 Level Two Korean I: Classroom Track U 4
Modern Korean intermediate level spoken communication, development of reading skills, and written composition. Classroom Track. Not open to native speakers of this language through regular course enrollment or EM credit.
Prereq: 1102.01, 1102.02, 1102.03, 1102.05, 101.01, or 102.01, or 4 sem cr hrs of 1102.51, or equiv. Not open to students with credit for 104. This course is available for EM credit. GE for lang course. FL Admin Cond course.

1103.51 Level Two Korean I: Individualized Instruction U 1 - 4
Modern Korean intermediate level spoken communication, development of reading skills, and written composition. Individualized Track.
Prereq: 1102.03, 1102.05, 1102.01, or 1102.02 or 4 cr hrs of 1102.51 or equivalent; and 101.51 and 102.51. Not open to students with credit for 103.51, 104.51, or to native speakers of this language through regular course enrollment or EM credit. Repeatable to a maximum of 4 cr hrs or 4 completions. This course is available for EM credit. GE for lang course. FL Admin Cond course.

2101.02 Level Two Korean II: Classroom Track U 5
Continuation of 1103.01.
Prereq: 1103.01 or 1103.02, or 4 cr hrs of 1103.51 or equivalent. Not open to students with credit for 2102.02, 205, or 206; or native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit.

2102.01 Level Two Korean II: Individualized Track U 1 - 5
Continuation of 1103.01/1103.51.
Prereq: 1103.01 or 1103.51, or permission of instructor. Repeatable to a maximum of 5 cr hrs or 5 completions. This course is available for EM credit.

2231 Elements of Korean Culture U 3
A survey of the religion, history, customs, performing arts, fine arts, literature, and social institutions of the Korean people from the earliest era to the present. Taught in English.
Prereq: Not open to students with credit for 231. GE cultures and ideas and diversity global studies course.

2451 Korean Literature in Translation U 3
A close examination of masterpieces in Korean literature across genres for students with no previous academic training in Korean literature. All readings and discussions in English; college-level English reading and writing required.
Prereq: English 1110.01 (110), 1110.02 or 1110.03. Not open to students with credit for 251. GE lit or diversely global studies course.

4101.01 Level Three Korean I: Classroom Track U 5
Expanding oral and written proficiency in Korean; expansion of vocabulary and knowledge of Chinese characters. Classroom Track.
Prereq: 2102 or equivalent with permission of instructor. Not open to students with credit for 507.01 or 508.01. This course is available for EM credit.

4101.51 Level Three Korean I: Individualized Track U 1 - 5
Expanding oral and written proficiency in Korean; expansion of vocabulary and knowledge of Chinese characters. Individualized Track. Progress is sequential from one cr hr to the next with a proficiency at the level of 80% required for advancement.
Prereq: 2102 or equivalent with permission of instructor. Not open to students with credit for 507.51 or 508.51. Repeatable to a maximum of 5 cr hrs or 5 completions. This course is available for EM credit.

4102.01 Level Three Korean II: Classroom Track U 5
Continuation of 4101. Classroom Track.
Prereq: 4101 or equivalent with permission of instructor. Not open to students with credit for 508.01 or 509.01. This course is available for EM credit.

4102.51 Level Three Korean II: Individualized Track U 1 - 5
Continuation of 4101. Individualized Track. Progress is sequential from one cr hr to the next with a demonstrated proficiency at the level of 80% required for advancement.
Prereq: 4101 or equivalent with permission of instructor. Advancement to the first credit in this course in the same semester as the completion of the 5th credit for 4102.51 requires registration for both courses, with permission of instructor. Not open to students with credit for 508.51 or 509.51. Repeatable to a maximum of 5 cr hrs or 5 completions. This course is available for EM credit.

4193 Individual Studies U 1 - 3
Directed study to meet individual research needs of students in Korean studies. Not a substitute for regular language courses.
Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs or 2 completions.

4194 Group Studies U 1 - 3
Group investigation of issues in Korean studies. Varying topics.
Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs or 2 completions.

4998 Undergraduate Research Project U 3
Focused research toward completion of an original project.
Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

4999H Undergraduate Research Project U 3
Focused research toward completion of an original project.
Prereq: Honors standing and/or permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

4999 Undergraduate Research Thesis U 1 - 4
Focused research toward completion of an original thesis.
Prereq: Permission of instructor. Repeatable to a maximum of 8 cr hrs or 2 completions. This course is graded S/U.

4999H Undergraduate Research Thesis U 3
Focused research toward completion of an original thesis.
Prereq: Honors standing and/or permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

5101 Level Four Korean I U G 3
Level Four Korean; development of integrated language skills at an advanced level, formal and informal communication, and discussion of contemporary social issues.
Prereq: 4102 or equivalent, or permission of instructor. Not open to students with credit for 610 or 611.

5102 Level Four Korean II U G 3
Continuation of 5101.
Prereq: 5101 or equivalent, or permission of instructor. Not open to students with credit for 611 or 612.

5103 Level Five Korean I U G 3
Strengthening communication skills through oral and written reports of social and cultural issues; development of advanced proficiency in a variety of genres.
Prereq: 5102 or equivalent, or permission of instructor.

5256 Interdisciplinary Topics in Korean Politics and Society U G 3
Interdisciplinary Korean studies course in the areas of social science, bridging Korean history, politics, gender, religion, philosophy, education, intercultural communication and international relations, etc. Taught in English.
Repeatable to a maximum of 6 cr hrs.

5315 Korean Language: Structure, Culture, and Communication U G 3
A comprehensive survey of structural, cultural, and communicative aspects of the Korean language. Taught in English.
Prereq: 1103, or equiv, or permission of instructor.

5580 Korean Linguistics U G 3
Examination of the phonology, syntax, lexicon, and writing system of the Korean language; some topics related to language use and acquisition.
Prereq: 1103 or equivalent, or permission of instructor. Not open to students with credit for 680.
Landscape Architecture

1100 Landscape Architecture Survey U 1
Introduction to the University, the Knowlton School of Architecture and the professions of architecture, city and regional planning and landscape architecture.
Prereq: Not open to students with credit for 1100E, 100, Arch 1100 (100), 1100E, 100H, CRPlan 1100 (100), 1100E, or any survey course. Cross-listed in Arch and CRPlan.

2000 Introduction to Landscape Architecture U 1
Introduction to the profession of Landscape Architecture and the breadth of Landscape Architectural projects and practice.
This course is graded S/U.

2300 Outlines of the Built Environment U 3
Introduction to the disciplines of architecture and landscape architecture and planning with an emphasis on the physical artifact and its formal and cultural context.
Prereq: Not open to students with credit for 1210, 2300E, Arch 1210, 2300, or 2300E. GE cultures and ideas course. Cross-listed in Arch.

2300E Outlines of the Built Environment U 3
Introduction to the disciplines of architecture and landscape architecture and planning with an emphasis on the physical artifact and its formal and cultural context. Honors Section.
Prereq: Honors standing. Not open to students with credit for 200, 1210, 2300, Arch 1210 (200), 2300, or 2300E. GE cultures and ideas course. Cross-listed in Arch.

2310 Introduction to Design U 4
Introduction to the design of the physical environment through the exploration of form, space, and order using drawing and modeling techniques.
Prereq: Not open to students with credit for 1410, 151, Arch 1410 (202), or Arch 2310. Cross-listed in Arch.

2367 Making and Meaning of the American Landscape U 3
Overview and interpretation of influential figures, policies, programs, cultural forces, and environmental factors that have shaped the American landscape since the Revolutionary War.
Prereq: English 1110 (111) or 110, or equiv. Not open to students with credit for 367 or NatRes 367. GE writing and comm: level 2 and cultures and ideas course.

2367E Making and Meaning of the American Landscape U 3
Overview and interpretation of influential figures, policies, programs, cultural forces, and environmental factors that have shaped the American landscape since the Revolutionary War. Honors Section.
Prereq: Honors standing, and English 1110 (111) or 110, or equiv. Not open to students with credit for 367 or NatRes 367. GE writing and comm: level 2 and cultures and ideas course.

2410 Landscape Architecture Media I U 3
This course introduces students to tools for communicating concepts, designs and processes of landscape architecture. Working with both analog and digital methods of representation, students learn to make visible their analyses and solutions. Provides a foundation in fundamental digital tools, hand sketching and hybrid methods of representation that convey temporality and environmental phenomena.
Concur: 2420.

2420 Ecology/Technology I U 3
This course provides an introduction to landscape materials by studying the qualities, characteristics, and dynamic functions of plants, soils, and water. Emphasis is placed on ecological approach to plant communities and landscape ecology. Topics include fundamentals of site grading, stormwater management, and planting design as well as an introduction to site detailing/construction.
Concur: 2420.

2600 Outlines of Landscape Architecture: Visual Literacy in the Built Environment U 3
Overview of patterns and processes of human design on land in relation to environmental, economic, and socio-cultural forces, with an emphasis on interpretation of visual landscape change.
Prereq: Not open to students with credit for 201. GE VPA course.
284 Landscape Architecture

4970 Design Studio VII: Synthesis U 6
Advanced landscape architectural research, design and planning synthesizing diverse scales, with an emphasis on interdisciplinary engagement.
Prereq: 4960 or 656.

499H Honors Design Studio U 6
Allows for development of topical research/design projects with an interdisciplinary perspective.
Prereq: Honors standing, and major within the Knowlton School of Architecture.

5191 Professional Experience in Landscape Architecture U G 0
Documentation of work experience in the field of landscape architecture or suitable related areas.
Prereq: Permission of instructor. Repeatable to a maximum of 6 completions. This course is graded S/U.

5194.02 Group Studies in Landscape Architecture U G 1 - 15
For group-based study of landscape architecture topics within the frame of an instructor guided course.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 4 completions.

5367 Landscape Architecture Professional Practice U G 3
Overview of landscape architectural professional practice principles, standards and codes, with a focus on writing and communication.
Prereq: Jr, Sr, or Grad standing, and enrollment in LArch major. Not open to students with credit for 663.

5610 History/Theory I U G 3
This course offers a global survey ranging from prehistoric settlements to the formation of the modern landscape profession in the 19th century. It assembles a foundation for thinking through landscape with approaches from architecture, history, and archaeology, examining cultural and designed landscapes through common technological and cultural frameworks.

5610E History/Theory I U G 3
This course offers a global survey ranging from prehistoric settlements to the formation of the modern landscape profession in the 19th century. It assembles a foundation for thinking through landscape with approaches from architecture, art history, and archaeology, examining cultural and designed landscapes through common technological and cultural frameworks.
Prereq: Honors standing.

5620 History/Theory II U G 3
The history and theory sequence engages the disciplines of urban design, planning, and infrastructure, draws on architectural and art history, and discusses the cultural as well as the designed landscape. Landscape History and Theory 2 focuses on the modern period, from the mid-19th century onward, and the forces that shaped our built environment.

5620E History/Theory II U G 3
The history and theory sequence engages the disciplines of urban design, planning, and infrastructure, draws on architectural and art history, and discusses the cultural as well as the designed landscape. Landscape History and Theory 2 focuses on the modern period, from the mid-19th century onward, and the forces that shaped our built environment.
Prereq: Honors standing.

5630 Advanced Topics in History/Theory U G 3
The final course in the history and theory sequence focuses on specific themes of landscape architecture and planning, both historical and contemporary. Repeatable to a maximum of 9 cr hrs.

5630E Advanced Topics in History/Theory U G 3
The final course in the history and theory sequence focuses on specific themes of landscape architecture and planning, both historical and contemporary.
Prereq: Honors standing. Repeatable to a maximum of 9 cr hrs.

5798 Study Tour in Landscape Architecture U G 1 - 15
Program offering opportunity for guided travel, field study and on-site investigation in the United States and abroad.
Repeatable to a maximum of 45 cr hrs or 3 completions.

5880 Interdepartmental Seminar U G 1 - 15
Interdepartmental seminar; topics to be announced. Repeatable to a maximum of 15 cr hrs or 5 completions. Cross-listed in CRPlan and Arch.

5960 Design Competition U G 1 - 6
Learn how to work in interdisciplinary teams to develop design proposals to solve problems in the natural or built environment.
Prereq: Jr, Sr, or Grad standing. Repeatable to a maximum of 9 cr hrs or 3 completions. Cross-listed in Arch and CRPlan.

6194 Group Studies in Landscape Architecture U G 1 - 15
For group-based study of landscape architecture topics within the frame of an instructor guided course.
Prereq: Grad standing and permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions.

6410 Landscape Architecture Media I U G 3
This course introduces students to tools for communicating concepts, designs, and processes of landscape architecture. Working with both analog and digital methods of representation, students learn to make visible their analyses and solutions. Provides a foundation in fundamental digital tools, hand sketching, and hybrid methods of representation that convey temporality and environmental phenomena.
Prereq: Grad standing. Not open to students with credit for 670.

6420 Ecology/Technology I U G 3
This course provides an introduction to landscape materials by studying the qualities, characteristics, and dynamic functions of plants, soils, and water. Emphasis is placed on ecological approach to plant communities and landscape ecology. Topics include fundamentals of site grading, stormwater management, and planting design as well as an introduction to site detailing/construction.

6430 Landscape Architecture Media II U G 3
This course reinforces the foundational study of digital landscape representation with an emphasis on mapping and physical modeling. Employing geographic information systems and digital modeling programs, students develop two- and three-dimensional strategies for representing dynamic landscape processes at a range of geospatial scales.
Prereq: 6420, and Grad standing. Not open to students with credit for 620, 622, 626, 670, 672, and 702.

6440 Ecology/Technology II U G 3
This course reinforces the foundational study of landscape materials and ecological dynamics with an emphasis on landscapes of the built environment. Specific attention is given to contemporary and sustainable techniques of site construction and landscape detailing.

6560 Outlines of Landscape Architecture: Visual Literacy in the Built Environment U G 3
This lecture course surveys the world of contemporary landscape architecture. Through study of works and texts, as well as design processes, students establish an understanding of landscape architecture as an applied activity and a sphere of research.
Prereq: Grad standing, or permission of instructor.

6680 Interdepartmental Seminar G 1 - 15
Interdepartmental seminar; topics to be announced.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions. Cross-listed in CRPlan and Arch.

6910 Design Studio I: Site Design U G 6
Introductory design studio with a focus on design process at the site scale.
Prereq: Grad standing. Not open to students with credit for 640.

6920 Design Studio II: Dynamic Systems U G 6
Synthesis of landscape ecology and site planning principles at the community and watershed scale, with a focus on integration of advanced inventory and analysis methodologies.
Prereq: 6910, and Grad standing. Not open to students with credit for 642 or 644.

6999 Thesis in Landscape Architecture U G 1 - 8
Individual thesis development under guidance of advisor.
Prereq: Permission of instructor. Repeatable. This course is graded S/U.

7193 Independent Studies in Landscape Architecture U G 1 - 6
For students who wish to pursue independent studies in landscape architecture, with the guidance of an advisor/instructor.
Prereq: Permission of instructor. Repeatable to a maximum of 8 cr hrs or 8 completions. This course is graded S/U.

7194 Group Studies in Landscape Architecture U G 1 - 4
For group-based study of landscape architecture topics within the frame of an instructor guided course.
Prereq: Permission of instructor. Repeatable to a maximum of 8 cr hrs or 8 completions.

7410 Advanced Landscape Technologies Seminar U G 3
Advanced topics in landscape technologies.
Repeatable to a maximum of 9 cr hrs.

7450 Advanced Landscape Media Seminar U G 3
Advanced topics in landscape media.
Repeatable to a maximum of 9 cr hrs.

7600S Graduate Landscape Topics in Research & Theory U G 1 - 3
Advanced topics in graduate research and theory.
Prereq: 7780 (740). Repeatable to a maximum of 12 cr hrs or 4 completions.

7630 Advanced Landscape History & Theory Seminar U G 3
Advanced topics in landscape history and theory.
Repeatable to a maximum of 9 cr hrs.
**Landscape Architecture**  285

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
<th>Prerequisites/Restrictions</th>
</tr>
</thead>
<tbody>
<tr>
<td>7780</td>
<td>Research Methods in Landscape Architecture</td>
<td>G 3</td>
<td>Quantitative, qualitative and design methods for graduate level landscape architectural research and documentation. Not open to students with credit for 740.</td>
</tr>
<tr>
<td>7980</td>
<td>Seminar in Landscape Architecture</td>
<td>G 3</td>
<td>Advanced topics in landscape architectural theory and research. Prereq: Grad standing. Not open to students with credit for 740.</td>
</tr>
<tr>
<td>7930</td>
<td>Design Studio III: Urban Landscape</td>
<td>G 8</td>
<td>Design of the urban environment in relation to sustainable urbanism principles and practices. Prereq: 6920, and Grad standing. Not open to students with credit for 754. Repeatable to a maximum of 16 cr hrs.</td>
</tr>
<tr>
<td>7940</td>
<td>Design Studio IV: Global Issues</td>
<td>G 8</td>
<td>Advanced graduate landscape architectural research, design and planning synthesizing diverse scales, with an emphasis on international and interdisciplinary engagement. Prereq: 7950, and Grad standing. Not open to students with credit for 750 and 752. Repeatable to a maximum of 16 cr hrs.</td>
</tr>
<tr>
<td>7950</td>
<td>Design Studio V: Design in Detail</td>
<td>G 8</td>
<td>Processes and techniques of landscape architectural design development, detailing and documentation, with a focus on sustainable design practices. Prereq: 7940, and Grad standing. Not open to students with credit for 658. Repeatable to a maximum of 16 cr hrs.</td>
</tr>
<tr>
<td>8990</td>
<td>Research Prep Seminar</td>
<td>G 3</td>
<td>Seminar-based, guided development of individual research projects. Prereq: 7780, and Grad standing.</td>
</tr>
</tbody>
</table>

### Latin

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
<th>Prerequisites/Restrictions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1101.01</td>
<td>Elementary Latin I</td>
<td>U 5</td>
<td>Elementary level introduction to the Latin language; the course begins the study of grammar and vocabulary. This course is a conversion of the entirety of 101.01 and the first half of 102.01. Not open to students with 3 or more years of high school study in this language, except by permission of department. This course is available for EM credit. GE for lang course. FL Admin Cond course.</td>
</tr>
<tr>
<td>1102.01</td>
<td>Intermediate Latin I</td>
<td>U 5</td>
<td>Completion of Latin grammar and syntax; introduction to reading of Latin authors. This course is a conversion of the second half of 102.01 and the entirety of 103. Prereq: 1101 or equiv., or Placement Test, or permission of instructor. Not open to students with credit for 103. This course is available for EM credit. GE for lang course. FL Admin Cond course.</td>
</tr>
<tr>
<td>1102.55</td>
<td>Elementary Latin II: Accelerated</td>
<td>U 5</td>
<td>Second part of the accelerated introductory Latin sequence; leads to readings of Latin authors such as Ovid, Caesar, Cicero, or Pliny. Prereq: 1101.55. GE for lang course. FL Admin Cond course.</td>
</tr>
<tr>
<td>1103</td>
<td>Intermediate Latin II</td>
<td>U 3</td>
<td>Selected readings in Latin literature. Prereq: 1102 (103), or Placement Test, or permission of instructor. GE for lang course.</td>
</tr>
<tr>
<td>1890</td>
<td>Intensive Latin Workshop I</td>
<td>U 6</td>
<td>Intensive Latin workshop introducing grammar and vocabulary up to reading competence of Latin authors, covering the material offered in Latin 1101-1103.</td>
</tr>
<tr>
<td>2101</td>
<td>Cicero</td>
<td>U 3</td>
<td>Readings from Cicero’s works, mainly the orations. Prereq: 1103 or 1890, or permission of instructor. Not open to students with credit for 210.</td>
</tr>
<tr>
<td>2102</td>
<td>Vergil</td>
<td>U 3</td>
<td>Readings from Vergil’s poetry. Prereq: 1103 or 1890, or permission of instructor. Not open to students with credit for 211.</td>
</tr>
<tr>
<td>2104</td>
<td>Ovid</td>
<td>U 3</td>
<td>Readings from Ovid’s narrative poetry (Metamorphoses and Fasti). Prereq: 1103 or 1890, or permission of instructor. Not open to students with credit for 213.</td>
</tr>
<tr>
<td>2105</td>
<td>Latin Lyric</td>
<td>U 3</td>
<td>Readings from the poems of Catullus, Horace, Propertius, Tibullus, or the elegiac poems of Ovid. Prereq: 1103 or 1890, or permission of instructor. Not open to students with credit for 214.</td>
</tr>
<tr>
<td>2106</td>
<td>Roman Comedy</td>
<td>U 3</td>
<td>Readings from the comedies of Plautus and Terence. Prereq: 1103 or 1890, or permission of instructor. Not open to students with credit for 206.</td>
</tr>
<tr>
<td>2193</td>
<td>Individual Studies</td>
<td>U 1-9</td>
<td>Intermediate readings in Latin literature. Prereq: 1103 or equiv., or permission of department. Repeatable to a maximum of 36 cr hrs or 12 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>4989</td>
<td>Research</td>
<td>U 1-3</td>
<td>A program of study arranged for each student. Prereq: Sr standing, and permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>4989H</td>
<td>Honors Research</td>
<td>U 1-3</td>
<td>A program of study arranged for each student. Prereq: Honors standing, and Sr standing, and permission of instructor. Repeatable to a maximum of 9 or hrs or 3 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>4999</td>
<td>Thesis Research</td>
<td>U 1-6</td>
<td>A program of study leading to the writing of a thesis and an oral defense that will integrate the experience of earlier courses in Latin. Prereq: Jr standing or above, and enrollment in Classics Major; or permission of instructor or department. Repeatable to a maximum of 18 cr hrs or 3 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>4999H</td>
<td>Honors Thesis Research</td>
<td>U 1-6</td>
<td>A program of study leading to the writing of a thesis and an oral defense that will integrate the experience of earlier courses in Latin. Prereq: Honors standing, Jr standing or above, and enrollment in Classics Major; or permission of instructor or department. Repeatable to a maximum of 18 cr hrs or 3 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>5012</td>
<td>Roman Lyric and Erotic Poetry</td>
<td>U G 3</td>
<td>Readings from Catullus, Horatius, Propertius, Tibullus and others. Prereq: 2 courses more advanced than 1103, or Grad standing, or permission of instructor. Not open to students with credit for 614.</td>
</tr>
<tr>
<td>5013</td>
<td>Roman Historians</td>
<td>U G 3</td>
<td>Readings from Sallust, Livy, Tactius and other historians. Prereq: 2 courses more advanced than 1103, or Grad standing, or permission of instructor. Not open to students with credit for 617.</td>
</tr>
<tr>
<td>5017</td>
<td>Roman Satire and Novel</td>
<td>U G 3</td>
<td>Readings from Roman satirical poetry and novels such as texts by Horatius, Juvenal, and Petronius. Prereq: 2 courses more advanced than 1103, or Grad standing, or permission of instructor. Not open to students with credit for 623.</td>
</tr>
<tr>
<td>5193</td>
<td>Individual Studies</td>
<td>U G 1-9</td>
<td>A program of study arranged for each student, with specific passages for reading and topics from Roman literature, culture, or religion for investigation. Prereq: 4 courses more advanced than 1103 or 1980, or Grad standing. Repeatable to a maximum of 36 or hrs or 12 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>5194</td>
<td>Group Studies</td>
<td>U G 1-9</td>
<td>A program of study arranged for a small group of students, with specific passages for reading and topics from Roman literature, culture, or religion for investigation. Prereq: Permission of instructor. Repeatable to a maximum of 36 or hrs or 12 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>5890</td>
<td>Intensive Latin Workshop I</td>
<td>U G 6</td>
<td>Intensive Latin workshop offered during the first six weeks of the Summer Term (12-wks) introducing grammar and vocabulary up to reading competence of Latin authors, covering the material offered in Latin 1101-1103. Credit will be awarded upon completion of 5891. Concurs: 5891. Not open to students with credit for 1101 through 1103. This course is progress graded.</td>
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<tr>
<td>5891</td>
<td>Intensive Latin Workshop II</td>
<td>U G 6</td>
<td>Intensive Latin workshop offered during the second half of the Summer Term (12-wks) covering the study of Latin authors at the 2000 level. Concurs: 5890. Not open to students with credit for 671.</td>
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<tr>
<td>6891</td>
<td>Latin Survey: Prose</td>
<td>G 5</td>
<td>A survey of Latin Prose Literature from its beginning to late antiquity focusing on language competence and literary history. Au Sem in alternation with Greek 6891. Prereq: 2 courses at the 2000-level, and permission of instructor, or Grad standing. Not open to students with credit for 701.</td>
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<tr>
<td>6892</td>
<td>Latin Survey: Poetry</td>
<td>G 5</td>
<td>Survey of Latin Poetry from its beginning to late antiquity focusing on language competence and literary history. Sp Sem in alternation with Greek 6892. Prereq: 4 2000-level courses, and permission of instructor; or Grad standing. Not open to students with credit for 702.</td>
</tr>
<tr>
<td>6893</td>
<td>Latin Prose Composition</td>
<td>G 3</td>
<td>Writing Latin prose. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 802.</td>
</tr>
</tbody>
</table>
Latin Pedagogy

An introduction to the teaching of Latin, its methods and techniques. Taught Fall Semester when students typically begin their language teaching. Au Sem. Prereq: Grad standing. Not open to students with credit for 891. This course is graded S/U.

7193 Individual Studies

Assigned reading of Latin authors or topics of Roman culture to help with language requirements or to prepare for exams. Au, Sp, Su Sem. Prereq: Permission of instructor. Repeatable to a maximum of 36 cr hrs or 12 completions. This course is graded S/U.

7890 Graduate Seminar, Latin

Research seminar on a topic of Latin literature and Roman culture. Repeatable to a maximum of 30 cr hrs or 15 completions.

8999 Research

Readings and discussions connected with the writing of a thesis on a topic of Latin literature and culture. Au, Sp, Su Sem. Prereq: Permission of instructor. Repeatable to a maximum of 36 cr hrs or 12 completions. This course is graded S/U.

Law

5796 Anglo-American Legal System


5797 Study at a Foreign Institution

An opportunity for students to study at a foreign institution and receive OSU credit for work completed there. Student will pay OSU fees and fees in excess of OSU tuition, as well as all travel and subsistence costs. Prereq: Permission of department chairperson. Repeatable to a maximum of 54 cr hrs or 3 completions.

6000 Tax Policy, Inequality and Distributive Justice

This course is graded S/U.

6025 Native Americans and the Law

This course will introduce students to Federal Indian Law, tribal courts, and current legal issues in Indian Country. Students will study Native American law, culture, and history to gain a new perspective. This course is graded S/U.

6050 U.S. Legal System and Legal Traditions

Overview of American law and the U.S. legal profession. Introduction to U.S. common law and statutory law. Prereq: Not open to students with credit for 630L.

6055 Transactional Practice-L.L.M.

Students will guide a fictitious company through a sophisticated transaction in the United States. During this representation, students will progress towards a procedural and substantive understanding of a U.S. transactional law practice, and the roles transactional lawyers play. This course satisfies component 5 of Moritz's Pathway One (for NY Bar Admission). Prereq: Admission to the Law Master of Laws (L.L.M.) Program. Not open to students with credit for 7310.

6060 Analysis of Client Files for L.L.M.

Practice skills through a series of reading/writing based simulations. Each simulation will include a client file and short library of related materials. Students will review the designated materials and then complete an assigned task from a supervising attorney. Prereq: Enrollment in LLM program.

6075 Loving v. Virginia: Critical Race/Sex Analysis

This course will provide a race/sex critical perspective of the Supreme Court's decision in Loving v. Virginia. This course is graded S/U.

6100 Legal Regulation of Cryptotransactions

A look at the expanding world of cryptoassets and cryptotransactions and how the regulatory regimes of the world's governments are developing in response. This course is graded S/U.

6101 Legal Analysis, Research and Writing for International Students

Analysis, research and writing for international students in the LLM program.

6103 Legal Analysis and Writing

Introduces students to legal institutions and processes; methods of legal analysis; research sources and strategies; professionalism issues that confront new lawyers; and effective communication with clients, colleagues, and other audiences. Prereq: Not open to students with credit for 502L.

6106 Legal Analysis and Writing II

Continues the work of Legal Analysis and Writing I using more sophisticated client problems and focusing on teaching students how to write like advocates. Prereq: Not open to students with credit for 511L.

6109 Torts

Trespass to person; negligence; misrepresentation; nuisance, strict liability; liability insurance; alternatives to the fault system; and federal and state regulation of traffic safety. Prereq: Not open to students with credit for 504L.

6112 Property

Acquisition, incidents, transfer of ownership; possession, concurrent, marital, and future interests, and contractual modification of these results. Prereq: Not open to students with credit for 505L.

6115 Civil Procedure I

Civil procedure in state and federal courts; development of equity; abolition of common law forms of action; merger of law and equity; jurisdiction; venue. Prereq: Not open to students with credit for 507L.

6118 Constitutional Law

Functional study of the major substantive, methodological, and federalistic limitations upon governmental power obtaining under practice of judicial review. Prereq: Not open to students with credit for 510L.

6121 Contracts I

Remedies for breach; offer and acceptance; consideration; third party beneficiaries; assignment of rights and delegation of duties; conditions; impossibility and frustration; statute of frauds. Prereq: Not open to students with credit for 503L.

6124 Legislation and Regulation

The lawmaking process; how the legislative process works; process by which statutes are enacted; how judges interpret the legislative product in theory and practice. This course is graded S/U.

6125 Justice, Democracy, and Law

An introductory exploration of the way in which the U.S. legal system relates to fundamental political values of fairness and popular sovereignty. This course is graded S/U.

6127 Criminal Law

Justifications for regulating behavior through criminal sanctions, how laws are crafted to reach the intended behavior, and issues of culpability, mens rea, and excuses. Prereq: Not open to students with credit for 505L.

6130 Legal Methods

Legal methods. Prereq: Permission of college. Not open to students with credit for 590L.

6150 Trump and the Law

An exploration of the extent to which the presidency of Donald Trump poses distinctive challenges to longstanding values underlying America's legal system, including the rule of law itself. This course is graded S/U.

6175 Law Practice Technology

This class will introduce students to a number of skills and concepts involved in using technology in practicing law. Prereq: Enrollment as a first-year Law student. This course is graded S/U.

6200 Counseling Start-Up Companies

Provides practical skills to prepare students for counseling start-up companies. This course is graded S/U.

6225 Legal Issues Surrounding the "MeToo" Campaign

This course will address legal issues involving sexual harassment and other forms of sexual misconduct in the workplace and in academic settings, from the perspective of feminist legal theory. This course is graded S/U.

6250 Contracts Drafting Skills

The Contract Drafting Skills course is a problem-based, lawyering skills course. Students will be given opportunities to develop law practice skills relevant to drafting negotiated documents that include learning about a client's goals, researching the enforceability of contract clauses, and integrating the client's strategies into written contracts. This course is graded S/U.

6275 Interviewing & Counseling

This course will introduce students to interviewing and counseling techniques used in the representation of clients. Prereq: 1L student standing, and enrollment in JD program. This course is graded S/U.

6300 Researching Client Matters

Students will master research strategies and how to evaluate information and information resources to resolve questions integral to law practice. Prereq: Enrollment as a first-year Law student. This course is graded S/U.
This course introduces students to the five skills that are essential in law-related careers: strategic planning, interviewing, observing, networking, and communicating professionally.

This course is graded S/U.

Environmental Justice explores the intersectionality of environmental law, social justice, and environmental decision-making.

This course is graded S/U.

This course examines sovereignty by asking how law is generated by often competing communities and levels of governance.

This course is graded S/U.

This class will introduce students to a number of skills and policy considerations involved in practicing criminal law as a prosecutor or defense attorney.

This course is graded S/U.

Students will be introduced to ideas about social justice and law, focusing on intersectional questions of race, class, gender, trans*, ethnicity, sexuality, disability, and religion, and the State.

This course is graded S/U.

Students will critically examine a variety of contracts to practice identifying problematic provisions and interpreting complex terms.

This course is graded S/U.

Students will learn to record basic financial transactions, create basic financial statements, and analyze complex financial statements. Students with more than two prior accounting courses may not take Introductory Accounting for Lawyers. Students who take Introductory Accounting for Lawyers may not later take Accounting and Finance for Lawyers.

Prereq: Enrollment in the College of Law. This course is graded S/U.

A lawyer's advocacy skills includes their ability to articulate a client's concerns, communicate their priorities, and creatively develop settlement options. In short, to negotiate.

This course is graded S/U.

Using exercises based in improvisation, theatre, and active listening, this practical course builds a strong foundation for persuasive oral communication in a variety of legal settings.

This course is graded S/U.

This course will help develop skills necessary to become effective civil rights lawyers, from creating a case and writing the complaint to building the record and working as part of a team. This course is graded S/U.

Introduction to skills, theory, and ethics that are central to the lawyer-client relationship, using cases that have been litigated in real and simulated court settings. This course is graded S/U.

This course presents an oral argument on the basis of assigned research materials. Procedural and substantive aspects of appellate practice; the student prepares a brief and presents an oral argument on the basis of assigned research materials.

Prereq: Permission of instructor. This course is graded S/U.

The course focuses on the ways lawyers can design a transaction to promote their clients' interests and how different designs can affect the parties' contractual pie.

This course is graded S/U.

First-year law students will explore challenges associated with workers in the "gig" economy who are not generally covered as "employees" under federal and state employment laws.

This course is graded S/U.

This course introduces students to the study of Law and Political Economy - a perspective that situates law as a mechanism for promoting a democratic and egalitarian society.

This course is graded S/U.

This course acquaints students with the legal basics for land use regulation, and explains the various regulatory tools in common usage.

This course is graded S/U.

Ethical issues in serving elderly clients, Medicare and Medicaid, Veteran's benefits, advanced directives and guardianship.

This course is graded S/U.

The course will address the two components of critical thinking: the cognitive ability and the disposition to exercise that ability. The course will actively engage students in the learning process, teaching them to take responsibility for their own learning and become self-regulated learners.

Prereq: Permission of instructor. This course is graded S/U.

Procedural and substantive aspects of appellate practice; the student prepares a brief and presents an oral argument on the basis of assigned research materials.

Prereq: 6103 and 6106. Not open to students with credit for 600L or 7310.

This 2-credit course will teach law students, in legal and practical terms, what it means to be a General Counsel of an organization; the lead lawyer on the inside of the entity responsible for providing legal advice to the entity itself.

Prereq: To Be a GC: The Role of the Modern General Counsel.

Introduction to Legal Operations focuses on using people, process, and technology to deliver legal services to corporations with greater predictability, fewer errors, and lower cost.

This course is graded S/U.

Training in the preparation of legal documents.

Prereq: 6103, 6106, and 7003. Not open to students with credit for 601L.

Advanced topics in legal research.

Prereq: 6103. Not open to students with credit for 602L. Repeatable to a maximum of 6 or hrs or 6 completions.

Negotiation and mediation techniques and practices.

Prereq: Not open to students with credit for 701L.

An introduction to the arbitration process as well as an identification of controversial legal issues that have arisen in the arbitration context.

Prereq: Not open to students with credit for 702L.

Study of the theory, law, and practice of transactional and settlement negotiations through actual negotiations by individual students in a variety of legal negotiation settings.

Prereq: Not open to students with credit for 703L.

Examines international arbitral procedures through the interaction of private contractual ordering, national law, and international treaties.

Survey of dispute resolution processes including negotiation, mediation, arbitration and a variety of court-administered and extra-judicial settlement processes.

Prereq: Not open to students with credit for 722L.

This course offers skills and strategies for effective negotiation and mediation of employment disputes in non-union work environments.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>7114</td>
<td>Franchise Agreements, Franchisor/Franchisee Law</td>
<td>L 3</td>
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<td>7116</td>
<td>Dispute Resolution Survey</td>
<td>L 2</td>
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<td>7124</td>
<td>International Dispute Resolution</td>
<td>L 3</td>
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<tr>
<td>7126</td>
<td>Digital Dispute Systems</td>
<td>L 2</td>
<td></td>
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<tr>
<td>7127</td>
<td>Designing Forums and Disputing Systems</td>
<td>L 2-4</td>
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<tr>
<td>7128</td>
<td>Designing Deals</td>
<td>L 2</td>
<td></td>
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<tr>
<td>7192</td>
<td>Public Interest and Government Externship</td>
<td>L 2-4</td>
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<td>7193</td>
<td>Individual Studies</td>
<td>L 1-4</td>
<td></td>
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<tr>
<td>7200</td>
<td>Business Associations</td>
<td>L 3-6</td>
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<tr>
<td>7204</td>
<td>Business Basics for Lawyers</td>
<td>L 1</td>
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<tr>
<td>7205</td>
<td>Business Torts and Unfair Competition</td>
<td>L 3</td>
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<td>7209</td>
<td>Accounting for Lawyers</td>
<td>L 2-3</td>
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<td>7210</td>
<td>Business Bankruptcy</td>
<td>L 2</td>
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<td>Banking Law</td>
<td>L 2-3</td>
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<td>Drafting Business Contracts</td>
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<td>Contracts II</td>
<td>L 3</td>
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<td>7215</td>
<td>Securities</td>
<td>L 2-3</td>
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<td>7218</td>
<td>Small Business and Entrepreneurial Finance</td>
<td>L 2-3</td>
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<td>Corporate Finance</td>
<td>L 2-3</td>
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<td>Litigation Finance</td>
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<td>7224</td>
<td>Mergers and Acquisitions</td>
<td>L 2-4</td>
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<td>Regulatory Compliance</td>
<td>L 2</td>
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<td>International Business Transactions</td>
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<td>7233</td>
<td>Topics in Business law</td>
<td>L 2-4</td>
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<td>7234</td>
<td>Venture Capital and Entrepreneurial Dealmaking</td>
<td>L 2-3</td>
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<td>International Trade</td>
<td>L 2-3</td>
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<td>7280</td>
<td>Cannabin: Exploring the &quot;Legalized&quot; Cannabis Industry from a Corporate Transactional Perspective</td>
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<td>7285</td>
<td>Drug Crimes</td>
<td>L 3</td>
<td></td>
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<td>7300</td>
<td>Commercial Paper</td>
<td>L 2-3</td>
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<td>7306</td>
<td>Sales</td>
<td>L 1-3</td>
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<td>7309</td>
<td>Secured Transactions</td>
<td>L 2-3</td>
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<tr>
<td>7310</td>
<td>Transactional Practice</td>
<td>L 2</td>
<td></td>
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<tr>
<td>7312</td>
<td>Debtor and Creditor Law</td>
<td>L 2-3</td>
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<tr>
<td>7321</td>
<td>Consumer Law</td>
<td>L 2-3</td>
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<tr>
<td>7400</td>
<td>Advanced Topics on Criminal Law</td>
<td>L 2-4</td>
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</tbody>
</table>
Forensic Mental Health Law 7401  L  2  Discusses the civil and criminal aspects of mental health care law including involuntary civil commitment, competence to stand trial, and sanity at the time of the act.

White Collar Crime 7403  L  2 - 3  Advanced substantive and procedural study of the federal criminal law enforcement system including RICO (Racketeer Influenced and Corrupt Organizations), mail fraud, drug offensives, tax enforcement, bank secrecy, and civil rights. Prereq: Not open to students with credit for 636L.

Jurisprudence of ADR 7405  L  3  An examination of the fundamental normative values, principles and practices that shape the design and implementation of the negotiation, mediation, arbitration and other ‘private’ dispute resolution.

Criminal Procedure: Investigations 7406  L  2 - 4  Legality of police practices to gather evidence; emphasis on interrogation and search and seizure; some reference to identification procedures and entrapment. Prereq: Not open to students with credit for 640L.

Criminal Procedure: Adjudication 7409  L  3  Study of the criminal justice system emphasizing the right to counsel, bail, preliminary proceedings, grand jury, speedy trial, discovery, and pleas. Prereq: Not open to students with credit for 641L.

Disability Discrimination 7500  L  2 - 4  Problem-oriented analysis of interaction between law and social science; emphasis on civil commitment, rights of disabled individuals, rights to community services (educational, residential, employment), and guardianship. Prereq: Not open to students with credit for 636L.

First Amendment 7503  L  2 - 3  Advanced study of First Amendment precedent and doctrines governing the press, speech, association, and church-state relations. Prereq: Not open to students with credit for 733L.

14th Amendment 7504  L  2 - 3  This advanced course in constitutional law will examine current, recurrent, and lasting topics of interest under the Fourteenth Amendment.

Black Lives Matter: Law and Culture 7507  L  2 - 4  This course examines law as a site that has defined both blackness and humanness in relationship to African Americans. It also explores black culture to understand various responses to injustice. Cross-listed in AfrAmASt.

Special Education Advocacy 7509  L  2 - 4  The law of special education as provided in the Individuals with Disabilities Education Act. Prereq: Not open to students with credit for 757L.

Children & the Law 7600  L  2 - 4  The law applicable to children, including a study of agency and juvenile court treatment of dependent, neglected, abused, unruly, and delinquent children. Prereq: Not open to students with credit for 634L.

Family & Divorce Mediation 7602  L  2  Students will learn and practice skills and techniques used in family and divorce mediation and examine and apply relevant family law and mediation statutes and cases. Fundamentals of Mediation or Equivalent training (concurent or prior mediation clinic satisfies prerequisite) required prior to enrollment.

Family Law 7603  L  3 - 4  Legal concerns in marital relationships, including entrance into marriage, spousal relationships during marriage, annulment, divorce, custody, and post-divorce financial arrangements; legal concerns in quasi-marital living arrangements. Prereq: Not open to students with credit for 635L.

Adoption Law 7606  L  2 - 3  Examines the adoption laws of the United States through their history and development. Prereq: Not open to students with credit for 638L.

Sex, Sexuality & the Law 7610  L  2 - 3  Surveys the various legal issues facing gay men, lesbians and bisexuals.

Gender and the Law 7611  L  2 - 3  Explores various strands of feminist legal theory as well as the legal significance of gender in a variety of contexts, including family, employment, criminal, civil and family law.

Critical Race Narratives 7612  L  3  Focuses on the relationship between narrative and law by using critical race theory to examine how race in America is a narrative of property and power.

Human Rights 7700  L  3  International norms and procedures for the enforcement of the rights of individuals, including treaties and the activities of international agencies. Prereq: Not open to students with credit for 643L.
Law

8020.02 Ohio State Journal of Criminal Law
Ohio State Journal of Criminal Law.
Prereq: Permission of instructor. Repeatable to a maximum of 5 cr hrs or 4 completions. This course is graded S/U.

8020.03 Ohio State Journal on Dispute Resolution
Ohio State Journal on Dispute Resolution.
Prereq: Students selected via announced selection process. Repeatable to a maximum of 6 cr hrs or 4 completions. This course is graded S/U.

8020.04 I/S: A Journal of Law and Policy for the Information Society
Prereq: Students selected via announced selection process. Repeatable to a maximum of 5 cr hrs or 4 completions. This course is graded S/U.

8020.05 Ohio State Entrepreneurial Business Law Journal
Prereq: Students selected via announced selection process. Repeatable to a maximum of 6 cr hrs or 4 completions. This course is graded S/U.

8100 Employment Law
State and federal regulation of the employment relationship with primary focus upon minimum wage and overtime compensation, workers’ disability and unemployment compensation, safety and health, retirement and pension security, and wrongful discharge.
Prereq: Not open to students with credit for 613L.

8103 Labor Law
Federal regulation of labor-management relations focusing upon employee organizational and representation rights, selection of bargaining representative, collective bargaining process, contract administration and enforcement, and internal union affairs.
Prereq: Not open to students with credit for 614L or 8103.01.

8103.01 Labor Law, Labor Arbitration and Collective Bargaining
This course will cover substantive labor law issues as well as the modern practice of labor law, including negotiating a collective bargaining agreement and arbitrating grievances.
Prereq: Not open to those with credit for course 8103.

8104 Business Litigation
The focus of the course will be on the liability of fiduciaries who serve as trustee for a trust engaged in the purchase or sale of company stock.

8106 Employee Benefits
Prereq: Not open to students with credit for 725L.

8109 Employment Discrimination Law
A constitutional and statutory study of federal and state laws that proscribe employment discrimination based upon race, color, religion, sex, national origin, age, and physical and mental handicap.
Prereq: Not open to students with credit for 744L.

8189.01 Criminal Defense Clinic
Advanced study and training in performance of legal services for the poor under supervision of clinical faculty and staff attorney. Development of the basic knowledge and skills of criminal law practice.
Prereq: 8200, and Law Third Year standing.

8189.02 Civil Law Clinic
Advanced study and training in performance of legal services for the poor under supervision of clinical faculty and staff attorney. Development of the basic knowledge and skills of civil law practice on behalf of the poor. Preferred prereq: 8200.
Prereq: Law Third Year standing.

8189.03 Criminal Prosecution Clinic
Students represent the City of Delaware in criminal cases, prosecuting cases such as domestic violence, sexual misconduct, drunk driving, and theft.
Prereq: 8200. Not open to students with credit for 738.03L.

8189.04 Justice For Children Clinic
Study of the intricacies of the juvenile intake process, difficulties of dealing with a total family situation involving child neglect or juvenile delinquency, and substantive legal problems of the juvenile area.
Prereq: Not open to students with credit for 738.04L.

8189.05 Legislation Clinic
Law students help Ohio legislators analyze legislative issues, examine other states approaches, and develop statutory (or other) responses that are appropriate for our state.
Prereq: 6124, and Law Second or Third Year standing.

8189.06 Multiparty Mediation Clinic
Examines the legal, ethical, and policy issues that arise when using the mediation process to resolve multi-party controversies.
Prereq: Not open to students with credit for 8189.07.

8189.07 Mediation Clinic
Examines legal, ethical, and policy issues surrounding mediation and to develop of mediation skills.
Prereq: Not open to students with credit for 8189.06.

8189.08 Selected Legal Problems Clinic
Topics will change as specially scheduled in any semester. Repeatable to a maximum of 5 cr hrs or 2 completions.

8189.09 Entrepreneurial Business Law Clinic
This clinic allows students to represent entrepreneurs and emerging businesses in need of transactional legal assistance.
Prereq: 7200, and Law Third Year standing.

8189.20 Judicial Externship
Judicial externships for credit.
Prereq: Faculty permission. This course is graded S/U.

8189.30 DC Externship
Substantive externships in D.C.
Prereq: Application to the Washington D.C. summer program.

8189.40 Regulatory Compliance Externship
Provide opportunities for students to obtain hands-on experience with regulatory compliance issues facing The Ohio State University.
Prereq: Permission of instructor. This course is graded S/U.

8200 Evidence
Survey of rules of evidence; particularly demonstrative, testimonial, and circumstantial proof; qualification and examination of witnesses; privilege; relevancy; documents; hearsay rule and its exceptions.
Prereq: Not open to students with credit for 603L.

8203 Civil Procedure II
Examination of federal rules of civil procedure: pleading, joinder, class actions, discovery, disclosure, case management, adjudication without trial, jury selection, post-trial motions, and appellate review.
Prereq: Not open to students with credit for 604L.

8206 Conflict of Laws
Private law pertaining to jural relations containing one or more foreign elements; jurisdiction; foreign judgments; domicile; choice of law; torts; workmen’s compensation acts; contracts; property; family law; decedents’ estates.
Prereq: Not open to students with credit for 706L.

8209 Federal Courts
The federal judicial system; jurisdiction of the district courts, courts of appeals, and United States Supreme Court.
Prereq: Not open to students with credit for 710L.

8210 Constitutional Litigation
Advanced and applied constitutional law with a focus on how to litigate and defend constitutional claims against public officials and local governments.

8211 Sentencing Law & Policy
Reviews traditional theoretical justifications for punishments and examines in depth society’s always-developing approach to the sentencing of criminal offenders.

8212 Pretrial Litigation
Depositions and client interviews; drafting of interrogatories; case strategies.
Prereq: Not open to students with credit for 730L.

8215 Remedies
An integrated study of remedial theory and devices available in the context of torts, contracts and property law.
Prereq: Not open to students with credit for 743L.

8218 Products Liability
Examines the theories and defenses of those involved in the manufacturing and selling of products.
Prereq: Not open to students with credit for 782L.

8300 Federal Antitrust Law
Combinations in restraint of trade; monopolization, attempts and conspiracies to monopolize; mergers, patent antitrust problems, and price discrimination under Sherman, Clayton, and Federal Trade Commission acts.
Prereq: Not open to students with credit for 623L.

8303 Immigration Law
Law concerning persons who want to come to the United States on a temporary or permanent basis.
Prereq: Not open to students with credit for 624L.

8306 Administrative Law
A study of the creation, operation, and control of federal administrative agencies, emphasizing their legislative, investigative, and adjudicatory authority and its control through judicial review.
Prereq: Not open to students with credit for 725L.
8308 Environmental Law Practicum L 2
This course uses a simulation-based curriculum to give students a sense of what environmental law practice is really like and teach them the skills required to practice successfully in this area.
Prereq: 8309.

8309 Environmental Law L 2 - 4
Federal environmental legislation, regulations, and judicial interpretation, including Natural Environmental Policy Act, the Clean Air Act, the Clean Water Act, and the Solid Waste Act, as amended.
Prereq: Not open to students with credit for 732L.

8310 Energy Law L 3
An introduction to domestic energy law, focusing on the legislative and regulatory framework for electricity and the challenges associated with diversification of energy sources.

8311 Climate Change Law L 3
Explores the legal, political, and scientific challenges involved in addressing and responding to climate change, including international strategies and U.S. law and policy.

8312 Election Law L 3
Examines the laws that govern political elections, including campaign finance rules, ballot access issues, and re-apportionment.
Prereq: 6118. Not open to students with credit for 752L.

8315 Education Law L 3
An examination of the legal framework and issues of public education K-12.
Prereq: Not open to students with credit for 753L.

8318 Law and the Presidency L 3
Examines the law that governs U.S. presidential power in both foreign and domestic affairs, and the President's interactions with Congress and the Judiciary.
Prereq: Not open to students with credit for 756L.

8400 Interprofessional Education: Care of Patient/Client L 1 - 2
Focuses on ethical issues, changing professional/consumer rights, and Interprofessional cooperation; limited to students in education, law, medicine, nursing, social work, bio-medical sciences, and allied health professions.
Prereq: Not open to students with credit for 700.01L.

8403 Ethical Issues L 1 - 4
Focuses on ethical issues, changing professional/consumer rights, and Interprofessional cooperation; limited to students in education, law, medicine, nursing, social work, bio-medical sciences, and allied health professions.
Prereq: Not open to students with credit for 700.03L. This course is graded S/U.

8406 Professional Responsibility L 1 - 2
Legal and ethical problems of the legal profession and the practicing lawyer. Unauthorized practice, bar admission, group legal services, malpractice, professional organization, and discipline. Required course.
Prereq: Not open to students with credit for 736.01L.

8409 Professional Responsibility: Extended L 1 - 4
Legal and ethical problems of the legal profession and the practicing lawyer. A more comprehensive presentation of unauthorized practice, bar admission, group legal services, malpractice, professional organization, and discipline.
Prereq: Not open to students with credit for 736.02L.

8525 Introduction to the US Legal System G 3
This foundational course in the Master in the Study of Law (MSL) provides an introduction to the US legal system, including legal methodology and reasoning, sources of law, the adversary system, the legal profession, and the court system.
Prereq: Not open to students enrolled in JD or LLM programs.

8600 Real Estate Finance L 2 - 4
Introductory study of real estate financing, emphasizing mortgages, deeds of trust, installment land contracts, rights and remedies of borrowers and lenders, and contemporary financing innovations.
Prereq: Not open to students with credit for 621L.

8603 Real Estate Development L 2 - 4
Overview of role that a lawyer plays during the development of a commercial real estate project.
Prereq: Not open to students with credit for 645L.

8609 Commercial Leasing L 3
Business and legal considerations which drive the leasing of a commercial real estate project.
Prereq: Not open to students with credit for 764L.

8700 Federal Income Taxation L 3 - 5
Gross income; deductions; credits; attribution; timing; sales and other dispositions of property; characterization of income and deductions.
Prereq: Not open to students with credit for 806L.

8706 State and Local Taxation L 2 - 3
Legal problems arising in property, excise, income, and estate-inheritance taxation; tax administration and procedure.
Prereq: Not open to students with credit for 622L.

8707 State and Local Government Law L 3
State and Local Government addresses major issues facing state and local governments and prepares students to practice law and influence policy at the state and local level. Graduate students in public policy and related fields are welcome to enroll.

8708 Biotechnology Law and Policy L 3
An interdisciplinary approach to examining many of the legal, business, ethical, and policy issues raised by the biotechnology industry.

8709 Wills, Trusts, Estates L 2 - 4
Gifts, wills, intestate succession, protection of spouse and other dependents, fiduciary administration, social security and other employee benefits, life insurance.
Prereq: Not open to students with credit for 665L.

8712 Tax of Business Enterprise/Corporate Tax L 3 - 4
Taxation of organizations; operations; sales and liquidations; divisions and reorganizations.
Prereq: 8700.

8715 International Taxation L 2 - 3
United States taxation of transnational transactions, including taxation of foreign entities operating in the United States and taxation of United States entities operating in foreign countries.
Prereq: 8700. Not open to students with credit for 716L.

8796 Study at a Foreign Institution L 1 - 10
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Prereq: Written permission of the Dean. Repeatable to a maximum of 30 cr hrs or 4 completions.

8797 Participation in a Foreign Exchange Program L 1 - 15
By participating in semester exchange programs, students may take up to 15 credits of law courses at partner institutions in Europe, Asia, and Latin America. Topics will vary based on course selection. Written permission of the Law Academic Affairs Committee is required for participation in non-ABA approved exchange programs. Repeatable to a maximum of 29 cr hrs or 4 completions. This course is graded S/U.

8800 Jurisprudence L 2 - 4
Jurisprudential thought as represented by general theories of or about law; assessment of leading juridical doctrines; relationship to social control policy and to legal precepts.
Prereq: Not open to students with credit for 620L.

8803 Law and Religion L 2 - 4
Examines the intersections of law and various religious manifestations.
Prereq: Not open to students with credit for 642L.

8806 Advanced Constitutional Law L 2 - 3
Constitutional theory, with emphasis on competing views of judicial review and the judicial function; the methodologies and processes of constitutional decision making; and criteria for judicial justification.
Prereq: Not open to students with credit for 658L.

8808 Health Care Agreements and Transactions L 2
Health care regulatory and industry features of agreements relating to physician employment, licensing and data management, long-term care residency, joint operating arrangements and joint ventures, mergers and acquisitions. Credit for 7200 preferred prior to enrollment.

8809 Health Law L 2 - 4
Selected issues in the practice of medicine; medical malpractice, ethical issues, regulation of the health care industry, and use of medical testimony and proof in litigation.
Prereq: Not open to students with credit for 711L.

8810 Public Health Law L 3
Surveys the legal framework of government public health regulations, by examining the sources and limitations of the government's authority to address current policy issues.

8811 Food and Drug Law L 3
This course explores various FDA law and policy issues related to the regulation of food, drugs, biologics, devices, and tobacco products. Cross-listed in PubHHMP 7612.

8813 E-Discovery Law and Practice L 1 - 3
Presents an overview of e-discovery law, as well as an examination of its practical implications for modern commercial litigation and other contemporary practices areas.

8816 The Lawyer in the Community L 3
Examines the lawyer's relationship to the larger community in which s/he works and lives. It surveys traditional and nontraditional lawyering tools for serving communities and their needs.

8817 The Rule of Law in the Age of Legal Change L 3
This course will introduce students to "the rule of law" as part of a larger introduction to some of the major legal and policy changes being made by the Trump Administration.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>8896.08</td>
<td>Seminar: Law, History &amp; Philosophy</td>
<td>L 2</td>
<td>Prereq: Not open to students with credit for 796.15L.</td>
</tr>
<tr>
<td>8896.09</td>
<td>Seminar: Ethics and ADR</td>
<td>L 2</td>
<td>Studies the law governing oil and gas ownership and development. It will include a study of related property interests in oil and gas, basic leasing concepts and regulatory principles.</td>
</tr>
<tr>
<td>8896.40</td>
<td>Seminar: Doing Business in China</td>
<td>L 2</td>
<td>Provides basic knowledge of relevant substantive law as well as appreciation of effect of applying general legal principles to a popular, scrutinized and mythologized subject.</td>
</tr>
<tr>
<td>8896.43</td>
<td>Seminar: Critical Race Theory</td>
<td>L 2</td>
<td>Legal and ethical issues involved with making public statements about litigation and legal issues.</td>
</tr>
<tr>
<td>8896.44</td>
<td>Seminar: Dispute Resolution and Conflict</td>
<td>L 2</td>
<td>Legal and ethical issues involved with making public statements about litigation and legal issues.</td>
</tr>
<tr>
<td>8896.45</td>
<td>Seminar: The Business of Law</td>
<td>L 2</td>
<td>Legal and ethical issues involved with making public statements about litigation and legal issues.</td>
</tr>
<tr>
<td>8896.46</td>
<td>Seminar: Critical Race Theory</td>
<td>L 2</td>
<td>Legal and ethical issues involved with making public statements about litigation and legal issues.</td>
</tr>
<tr>
<td>8896.47</td>
<td>Seminar: Critical Race Theory</td>
<td>L 2</td>
<td>Legal and ethical issues involved with making public statements about litigation and legal issues.</td>
</tr>
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<td>8896.48</td>
<td>Seminar: Critical Race Theory</td>
<td>L 2</td>
<td>Legal and ethical issues involved with making public statements about litigation and legal issues.</td>
</tr>
<tr>
<td>8896.49</td>
<td>Seminar: Critical Race Theory</td>
<td>L 2</td>
<td>Legal and ethical issues involved with making public statements about litigation and legal issues.</td>
</tr>
<tr>
<td>8896.50</td>
<td>Seminar: Critical Race Theory</td>
<td>L 2</td>
<td>Legal and ethical issues involved with making public statements about litigation and legal issues.</td>
</tr>
</tbody>
</table>
8896.51 Sem: Critical Race Narratives
This seminar focuses on the relationship between narrative and law by using critical race theory to examine how race in America is a narrative of property and power.

8896.52 Sem: U.S. Supreme Court Decisionmaking
The seminar considers theories of statutory and constitutional interpretation from the current court's perspective, examines Supreme Court practice and looks at key cases pending in the current term.

8896.53 Sem: International Intellectual Property
The seminar will survey key international treaties, including TRIPS, and their implementation into domestic law. It will also examine use of the WTO Dispute Settlement System to resolve IP disputes.

8896.54 Sem: Critical Theory/Critical Lawyering
This course introduces students to important strands of contemporary legal theory, including Critical Legal Studies, Critical Race, Feminist, Queer, Lat-crit, and Classcrct theories.

8896.55 Sem: Big Data Law and Policy
The seminar will introduce big data; describe how it generates value; explain how it poses risks to cybersecurity, privacy and equal opportunity; and explore the laws and policies that govern it.

8896.56 Sem: State Constitutional Law
This seminar explores the nature and significance of state constitutional law, its role in the fabric of American law, and the interaction between state and federal constitutional law.

8896.58 Sem: Progressive Era and Its Contemporary Relevance
The Progressive Era (1890-1920) produced the most significant reform of American democracy of any period in US history. This seminar will study its successes (and failures) to see their relevance today.

8896.59 Sem: Section 1983: Police Misconduct and Prison Violations
This course considers the origins, uses, and limits of section 1983 litigation in the contexts of police misconduct and prison violations.

8896.60 Sem: Transitional Justice
This seminar will explore the diverse range of transitional justice mechanisms in post-conflict societies and compare and analyze them in view of various demands for justice.

8896.61 Sem: What's International Law For? Purposes and Values of the International Legal Order
This seminar examines the overarching policy purposes animating and guiding the international legal order.

8896.62 Sem: Prisons, Police, and Borders
The course will consider the historical, psycho-social, and legal foundations of prison, police, and borders, and the possibilities for reforms and alternatives.

8896.63 SEM: Contract Justice
Contract Justice studies the relationship between contract law and various strands and theories of justice.

8896.64 Seminar: Disability Accessibility - From Testing to Websites
This course will give students an opportunity to learn about a range of accessibility issues including special education, physical accessibility, testing accommodations, website accessibility and arbitrage issues under both the Americans with Disabilities Act and the Individuals with Disability Education Act.

8896.65 Jus Ad Bellum: Waging War in International Law
Jus ad bellum is the sub-field of international law that governs the decision to wage war. It determines the situations in which it is lawful for states to resort to armed force.

8896.66 Seminar: Administrative Law in the Modern Administrative State
This seminar explores the scholarly literature on advanced topics in administrative and regulatory practice as well as the theories and policies that motivate the modern regulatory state.

8896.67 SEM: Surveillance and Secrecy
Seminar exploring enduring, current, and emerging issues involving government surveillance and secrecy. Students will write short and/or long papers, and do presentations.

8896.68 Seminar: Labor and the Constitution
This seminar explores the historical and contemporary constitutional treatment of labor, labor unions, and collective worker activity.

8896.69 Sem: Ethnic Conflict
This seminar focuses on conflicts between ethnic groups. Emphasis is on legal institutions and other processes that may ameliorate ethnic conflict. A single research paper is required.

8896.70 Sem: Advanced Constitutional Law
Different ways to read the U.S. Constitution. Readings, drawn from cases, law review articles, and books, offer students an opportunity to engage and analyze these forms of legal authority, while deepening their understanding and thinking about the role of the U.S. Supreme Court, including its powers of judicial review and supremacy, in our national constitutional scheme.

8896.71 Sem: Drug Law Enforcement & Bill of Rights
We examine how the historical enforcement of U.S. drug laws resulted in significant legal developments concerning defendants’ rights, privacy, states’ rights, property rights, and religious freedom.

8896.72 Sem: Federal Sentencing Law & Policy
Traditional theoretical justifications for punishments and examine in depth society’s always-developing approach to the sentencing of criminal offenders.

8900 Transfer Credit
Transfer Credit. Repeatable to a maximum of 31 cr hrs or 6 completions. This course is graded S/U.

8910 Enrollment in Law
Enrollment in law, no credit. Repeatable to a maximum of 2 completions. This course is graded S/U.

8950 Professional Practice Skills Course
Professional Practice series focus on specific lawyering skills and are taught by law faculty or distinguished adjuncts.

8953 Professional Practice Capstone Course
Professional Practice Capstone series are taught by distinguished visitors and focus on real-world challenges faced by lawyers in particular areas, such as health law, international trade, or employment law.

8964 Lawyers as Leaders
Combining theory, simulations and case studies, this course develops a descriptive and normative picture of leadership practices and challenges for lawyers.

8990 American Legal History
The history of American law from its colonial antecedents until the twentieth century, emphasizing the relationship between law and the changing social, political, and economic conditions.

Law

8990 The Basics of Language for Language Learners
Important tools for becoming a successful foreign language learner; cross-cultural differences and similarities in language use, parts of speech, foreign sounds, typical mistakes, etc. GE soc sci indivs and groups and diversity global studies course.

1101 Human Voices
Students will explore the acoustic properties of the human voice, including what makes voices unique, with the goal of understanding what makes the voices of ourselves, our friends and family, and famous actors and politicians distinctive, memorable, and recognizable.

2000 Introduction to Linguistics
Examination of language as a system of human communication; provides students with the tools needed for the recording, investigation, and close analysis of language.

2000H Introduction to Linguistics
Examination of language as a system of human communication; provides students with the tools needed for the recording, investigation, and close analysis of language.

2001 Language and Formal Reasoning
How natural and artificial languages are alike in structure and use in reasoning; how natural languages differ in principles of use by humans.

2051 Analyzing the Sounds of Language
The sounds that languages use are examined. Quantitative analytical tools used in phonetic science are introduced. Small experiments are conducted to introduce students to research.

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The sounds that languages use are examined. Quantitative analytical tools used in phonetic science are introduced. Small experiments are conducted to introduce students to research.

Cross-listed in SphHng.
294 Linguistics

2051H Analyzing the Sounds of Language U 3
The sounds that languages use are examined. Quantitative analytical tools used in phonetic science are introduced. Small experiments are conducted to introduce students to research. Prereq: Honors standing or a grade of A- or B+ in 1101 or 1102. Not open to students with credit for SPH 2051 (286) or 286H. GE data any course.

2052H Theories of Linguistics: The Scientific Method for Abstractions and Unobservables U 3
Provides a strong grounding in fundamental principles of scientific reasoning illustrated through concrete examples across the Natural and Social sciences with emphasis on Psychology and Linguistics. This course is suitable for students from all backgrounds including non-science majors. Students will gain understanding of what it means to do science.
Prereq: Honors standing. GE quant reason math and logical any course.

2194 Group Studies U 1 - 3
Introductory topics in linguistics. Repeatable to a maximum of 6 cr hrs or 6 completions.

2367.01 Language, Sex, and Gender in American Culture U 3
Discussing and writing about ways that views about sex and gender affect language and its use in speech communities in the U.S. Prereq: English 1110.01, 1110.02, 1110.03, or equiv, and Soph standing. Not open to students with credit for 2367.01H. GE writing and comm: level 2 and diversity soc div in the US course.

2367.01H Language, Sex, and Gender in American Culture U 3
Discussing and writing about ways that views about sex and gender affect language and its use in speech communities in the US. Prereq: Honors and Soph standing; and English 1110.01 (110.01), or 1110.02 (110.02), or 1110.03 (110.03), or equiv. Not open to students with credit for 2367.01. GE writing and comm: level 2 and diversity soc div in the US course.

2367.02 Language and Advertising U 3
How advertising impacts American culture; how the U.S. influences international advertising and how various populations are represented in ads. Prereq: English 1110.01 (110.01), or 1110.02 (110.02), or 1110.03 (110.03), or equiv; and Soph standing. Not open to students with credit for Linguist 367.02. GE writing and comm course: level 2.

2797.01 Global May Study Abroad New Zealand U 3
Introduces students to the unique history and culture of New Zealand. Through an intensive immersion program students will combine classroom instruction from UC academics with cultural visits and community engagement projects. The focus of the course is on Language and Identity which will enable students to become immersed in the culture and history of New Zealand.
GE education abroad course.

2797.02 Immersive Linguistics: The South of France U 3
This Study Abroad 3-credit course will introduce students to the linguistic properties of French through inquiry into the unique language, culture, and history of Aix-en-Provence, located in the south of France. This intensive 4-week Study Abroad immersion program will combine formal classroom instruction in linguistic analysis by OSU faculty with cultural immersion in Aix-en-Provence.
GE education abroad course.

3191 Internship in Linguistics U 1 - 3
Intensive experience in linguistics as a research assistant on a faculty research project or as an intern at a linguistics-related business or organization.
Prereq: Ling 2000 (Linguist 201), 2000H (200H), or 4000 (401), and at least 3 additional courses in Linguistics. Repeatable to a maximum of 3 or hrs or 3 completions. This course is graded S/U.

3401 Words and Meanings U 3
An introduction to semantics focusing on word meanings, meaning in word formation, meaning change over time, and cognitive processes involved in word learning and use.
Prereq: Ling 2000 (Linguist 201), 2000H (201H), or 4000 (401), and English 1110.01 (110.01), 1110.02 (110.02), or 1110.03 (110.03) or equiv.

3501 Introduction to American Indigenous Languages U 3
An introduction to indigenous languages of the Americas and their speakers: e.g. history of settlement, language families, linguistic properties, bilingual education, language policies and attitudes.
Prereq: English 1110.01 (110.01), 1110.02 (110.02), or 1110.03 (110.03), or equiv. Not open to students with credit for Linguist 307. GE soc sci indivs and groups and diversity global studies course.

3502 Klingon, Elvish, Dothraki: The Linguistics of Constructed Languages U 3
Constructed languages like Klingon, Elvish, and Dothraki may seem like the province of Comicon goers, but they have a long and varied intellectual history. Constructed languages require a deep understanding of both the mechanics of language and how languages relate to the cultures that they come from. This course examines the linguistic complexity of constructed languages.

3601 Language, Race, and Ethnicity in the U.S. U 3
Objective examination of the relationship between language, race and ethnicity in the context of varieties of English used by minority ethnic and racial groups in the U.S. Prereq: English 1110.01, 1110.02, or 1110.03, or equiv. GE cultures and ideas and diversity soc div in the US course.

3602 Language and Social Identity in the U.S. U 3
Relationships between language and social diversity in the general American speech community; discussion of how individuals and social groups distinguish themselves on the basis of language.
Prereq: Not open to students with credit for Linguist 372. GE soc sci indivs and groups and diversity soc div in the US course.

3603 Language Across Cultures U 3
Investigation of relationships between language and culture in different societies with a view to shedding light on cross-cultural similarities and differences.
Prereq: English 1110.01 (110.01), 1110.02 (110.02), or 1110.03 (110.03), or equiv. Not open to students with credit for Linguist 375. GE soc sci indivs and groups and diversity global studies course.

3701 Language and the Mind U 3
Introduction to the psychological processes for producing and understanding speech, the means by which they arise in the child, and bases in the brain.
Prereq: 2000 (201), 2000H (201H), 5000 (400), Psych 1100 (100), or 1100H (100H). Not open to students with credit for 371, 3701H, Psych 3371 (371), or 3371H (371H). GE soc sci indivs and groups course. Cross-listed in Psych 3371.

3701E Language and the Mind U 3
Introduction to psychological processes for producing and understanding speech, the means by which these processes arise in the child, and their bases in the brain.
Prereq: Honors standing, and 2000 or Psych 1100. Not open to students with credit for 3701, 3701H, Psych 3371, 3371E, or 3371H. GE soc sci indivs and groups course. Cross-listed in Psych 3371E.

3701H Language and the Mind U 3
Introduction to the psychological processes for producing and understanding speech, the means by which they arise in the child, and bases in the brain.
Prereq: Ling 2000 (Linguist 201), 2000H (201H), 4000 (401), or Psych 1100 (100), or permission of instructor. Not open to students with credit for Linguist 371, 371H, Psych 3371 (371), or 3371H (371H). GE soc sci indivs and groups course. Cross-listed in Psych 3371H.

3801 Codes and Codebreaking U 3
Introduction to old and new technology associated with codes and code-breaking and the ways in which it has impacted people's lives.

3802 Language and Computers U 3
Introduction to human language technology, explaining the computational and linguistic principles behind such familiar technologies as web search, machine translation, and spelling correction.
Prereq: Soph standing or above. Not open to students with credit for Linguist 384. GE quant reason math and logical any course.

3802H Language and Computers U 3
Introduction to human language technology, explaining the computational and linguistic principles behind such familiar technologies as web search, machine translation, and spelling correction.
Prereq: Honors standing. Not open to students with Fresh standing. GE quant reason math and logical any course.

3803 Ethics of Language Technology U 3
Students will learn about how language processing systems are created, and at what steps in the process bias and unfairness might creep in. They will learn about efforts to define, detect and quantify bias, and how different ethical principles can lead to different results. Finally, students will discuss different ways to remedy the ethical problems of language technology.

3901 Language Evolution and Language Change U 3
A study of how and why languages change and evolve over time, taking into account the linguistic, historical, ideological and cultural factors involved.
Prereq: Not open to students with credit for Linguist 301. GE cultures and ideas course. Cross-listed in NELC 3101.

4100 Phonetics U 3
Cross-linguistic survey of the sounds of the world's languages.
Prereq: 2000, 2000H, or 4000. Not open to students with credit for 5101.

4193 Individual Studies U 1 - 3
Individual Studies.
Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

4194 Group Studies U 1 - 3
Study of topics not regularly scheduled for seminars in linguistics, under the direction of a faculty member.
Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

4200 Syntax U 3
Basic elements of syntactic description and an overview of syntactic structure across languages.
Prereq: Ling 2000 (Linguist 201), 2000H (201H), or 4000 (401). Not open to students with credit for Ling 5201 (Linguist 602.01).
4300 Phonology U 3
Introduction to phonological analysis and description, and an overview of phonological structure across languages. Prereq: Ling 2000 (Linguist 201), 2000H (201H), or 4000 (601). Not open to students with credit for Ling 5301 (Linguist 603.01).

4350 Morphology U 3
The grammatical and phonological analysis of words, and their significance in linguistic structure. Prereq: Ling 2000 (Linguist 201), 2000H (201H), or 4000 (601).

4400 Linguistic Meaning U 3
Introduction to linguistic meaning across languages, including word meaning, the contribution of syntactic structure, and the role of context in interpretation. Prereq: 2000 (201), 2000H (201H), or 4000 (601).

4780 Undergraduate Research Seminar U 3
Linguistics students learn about cutting-edge research by OSU linguists and get hands-on experience conducting their own linguistic research. Prereq: Ling 4100, 4200, or 4300, and enrollment in Ling major; or permission of instructor.

4797 Study at a Foreign Institution U 1 - 30
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as travel and subsistence costs. Prereq: Permission of department. Repeatable to a maximum of 30 cr hrs or 30 completions. This course is graded S/U.

4998 Undergraduate Research U 1 - 10
Undergraduate research or creative activities in various topics. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs or 15 completions. This course is graded S/U.

4998H Undergraduate Research U 1 - 10
Research: assigned reading and individual research. Prereq: Honors standing and permission of instructor. Repeatable to a maximum of 10 cr hrs or 3 completions. This course is graded S/U.

4999 Undergraduate Thesis Research U 1 - 10
Undergraduate research or creative activities in various topics culminating in a research thesis and oral defense. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 5 completions. This course is graded S/U.

4999H Honors Undergraduate Thesis Research U 1 - 10
Honors undergraduate research or creative activities in various topics, culminating in a research thesis and oral defense. Prereq: Honors standing, and permission of instructor and the Arts and Sciences Honors Committee. Repeatable to a maximum of 10 cr hrs or 5 completions. This course is graded S/U.

5050 Technical Tools for Linguists U G 3
Practical training in standard computational tools for tackling different kinds of linguistic research. Students will learn computational techniques to access, search and for linguistic datasets, including text corpora, speech and audio, structured representations such as parse trees, and experimental measurements. The course will also cover data exploration and basic modeling.

5051 Quantitative Methods U G 3
Quantitative methods in the sub-disciplines of Linguistics, including data analysis, interpretation and display of data, inferential statistics, and statistical modeling. Prereq: Ling 2000 (Linguist 201), 2000H (201H), or 4000 (601).

5101 Phonetics: Phonetic Theory U G 3
Principles of articulatory phonetics, with some discussion of acoustic phonetics, practice in the production, recognition, and transcription of sounds in various languages of the world. Prereq: 4100 (Linguist 500), 4300 (503), or 5000 (601); or permission of instructor. Not open to students with credit for Ling 600.01.

5102 Laboratory Phonology U G 3
Introduction to laboratory methods and quantitative models of speech for linguistics. Prereq: Ling 5101 (Linguist 600.01). Not open to students with credit for Ling 600.02.

5201 Syntactic Theory I U G 3
Theories of syntax: principles of syntactic description. Prereq: 4200 (Linguist 502) or 5000 (601); or permission of instructor. Not open to students with credit for Ling 602.01.

5202 Syntactic Theory II U G 3
Theories of syntax: principles of syntactic description. Prereq: Ling 5201 (Linguist 602.01). Not open to students with credit for Ling 602.02.

5301 Phonological Theory I U G 3
Introduction to phonological analysis and the principles governing the structure, acquisition, and change of phonological systems; survey of major phonological theories. Prereq: 4100 (Linguist 500), 4300 (503), or 5000 (601); or permission of instructor. Not open to students with credit for Ling 603.01.

5302 Topics in Advanced Phonology U G 3
Introduction to phonological analysis and the principles governing the structure, acquisition, and change of phonological systems; survey of major phonological theories. Prereq: 5301 or Ling 603.01. Not open to students with credit for Ling 603.02. Repeatable to a maximum of 9 cr hrs.

5351 Morphological Theory U G 3
Introduction to and comparison of current theories of morphology with application to linguistic data and problems. Prereq: 2000 (Linguist 201), 2000H (201H), or 5000 (601); or permission of instructor. Not open to students with credit for Ling 605.09.

5401 Semantic Theory I U G 3
Problems and methods in linguistic semantics, using logic and semantic model theory as analytic tools; reference, compositionality, presupposition, conversational implicature, speech acts, deixis. Prereq: 4400 or 5000 (Linguist 601); or permission of instructor. Not open to students with credit for Ling 683.01.

5402 Semantic Theory II U G 3
Montague semantics and more recent semantic theories; analysis of important problems, such as generalized quantifiers, lattice-based accounts of plural and events, discourse representation theory. Prereq: Ling 5401 (Linguist 683.01). Not open to students with credit for Ling 683.02.

5501 An Introduction to African-American English U G 3
Introduction to the structure and history of the varieties of English used by African-Americans and the relationship between language use and socio-cultural context. Prereq: One Linguistics course taken at the 4000 level (300 level) or above. Not open to students with credit for AFAM 5501 or 605.

5551 Field Methods I U G 3
Methodology for determining the phonological system of a previously unknown language through the use of a native informant. Prereq: Two courses from two of the following three groups: 4100 (Linguist 500) or 5010 (600); 4200 (502) or 5201 (602.01); or 4300 (503) or 5301 (603.01); or permission of instructor. Repeatable to a maximum of 24 cr hrs.

5601 Introduction to Sociolinguistics U G 3
Survey of approaches to the study of language in its social context; sociology of language, ethnography of speaking, discourse analysis, quantitative sociolinguistics. Prereq: Two Ling courses 2000 (Linguist 201) or above, or 4900 (601); or permission of instructor. Not open to students with credit for Ling 661.01.

5602 Introduction to Quantitative Sociolinguistics U G 3
Exploration of language in its social context through the methods of quantitative analysis of linguistic variation, including the Labovian and implicational models. Prereq: 5601.

5603 Sociolinguistic Field Methods U G 3
Research methods for sociolinguistic fieldwork including interviewing, observation, survey design and experimental work. Focus on methodology, planning and implementation. Prereq: 5601 (Linguist 661.01).

5612 Introduction to Cognitive Science U G 3
Cognitive science is an interdisciplinary study of the nature of human thought; psychological, philosophical, linguistic, and artificial intelligence approaches to knowledge representation. Prereq: Permission of instructor. Not open to students with credit for Ling 612, Philos 5830 (612), CSE 5531 (612), or Psych 5812 (612). Cross-listed in Philos 5830, CSE 5531, and Psych 5812.

5651 Languages in Contact U G 3
Study of the effects of language contact on the structure of the involved languages, and of the characteristics of the individuals and communities involved in language contact. Prereq: Two Ling courses 2000 (Linguist 201) or above; or Grad standing.

5700 Training in Informal Science Outreach U G 3
The purpose of this course is to provide students with hands-on training in informal science education at the COSI museum. All students will learn to provide outreach education at the museum; advanced students will develop outreach materials, assist in the visible research operations, and mentor other students. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. Cross-listed in Psych and Edu/LT.

5701 Psycholinguistics I U G 3
An introduction to high-level language processing, word recognition, sentence understanding, and discourse processing. Prereq: 3701 (Linguist 371), 3701H (371H), or 5000 (601); or permission of instructor. Not open to students with credit for Ling 615.

5703 Eye Tracking Methods for Psycholinguistics U G 3
A hands-on laboratory course focusing on current techniques for monitoring eye movements as a measure of language processing. We will discuss preparation of auditory and screen-based/real world visual stimuli, and methods for aggregating and analyzing eye movement data. Students will have access to Tobii and ASL Mobile eye trackers. Prereq: Ling 3701H (Linguist 371H) or 5701 (615).
Linguistics

5801 Computational Linguistics I U G 3
Symbolic and probabilistic computation applied to the structure of words and sentences, models of syntax, parsing algorithms. Prereq: 3802 (Linguist 394), 5000 (601), CSE 3321, 3521, or 5052; or permission of instructor. Not open to students with credit for Linguist 684.01.

5802 Computational Linguistics II U G 3
Computational models of language acquisition and application of machine learning techniques to language processing. Prereq: Ling 5801 (Linguist 684.01). Not open to students with credit for Linguist 684.02.

5804 Analyzing Language in Social Media U G 3
Course gives students experience analyzing language in social media. It covers theoretical issues arising in digital communication and provides hands-on practice at computational data analysis, applicable across fields. Students gain an understanding of the sociolinguistic dynamics of online communication and the technical skills to conduct research on them. Team-taught w/ faculty in English. Prereq: Not open to students with credit for English 5804. Cross-listed in English.

5891 Proseminar in Cognitive Science U G 2
Provides an in-depth examination of cognitive science from an interdisciplinary perspective. Prereq: Permission of instructor. Repeatable to a maximum of 4 cr hrs. Cross-listed in CSE, Psych, Philos, and Sphl/Eng.

5901 Introduction to Historical Linguistics U G 3
Introduction to the methods and principles of historical linguistics. Prereq: 4100 (Linguist 500), 5101 (601.01), 4300 (503), 5301 (603.01), or 5000 (601); or permission of instructor. Not open to students with credit for Linguist 611.

5906 Topics in Indo-Iranian Linguistics U G 1 - 3
Possible topics include advanced classical Sanskrit, introductory Vedic Sanskrit, Indo-Iranian or Indo-Aryan linguistics, or studies in the ancient Indian grammarians. Repeatable to a maximum of 9 cr hrs or 3 completions.

6000 Teaching Introductory Linguistics G 1
Designed to train instructors in the techniques and materials used to teach introductory linguistics courses. Prereq: Not open to students with credit for Linguist 830. Repeatable to a maximum of 4 cr hrs. This course is graded S/U.

6001 Proseminar in Linguistics G 2
Introduction to the problems, methods, and tools of linguistic research. Recommended for all candidates for grad degrees. Repeatable to a maximum of 50 cr hrs. This course is graded S/U.

6193 Individual Studies G 1 - 12
Individual Studies. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs or 8 completions. This course is graded S/U.

6194 Group Studies G 1 - 3
Study of topics not regularly scheduled for seminars in linguistics, under the direction of a faculty member. Prereq: Ling 4000 (Linguist 601). Repeatable to a maximum of 24 cr hrs or 6 completions.

7890.01 Seminar Discussion Groups: TA Workshop G 1 - 3
A selected group study, with emphasis on individual writing and presentation. Prereq: 5000 (600) level or above course in Ling; or permission of instructor. Repeatable to a maximum of 60 cr hrs or 60 completions.

7890.02 Seminar Discussion Groups: Syntax G 1 - 3
A selected group study, with emphasis on individual writing and presentation. Prereq: 5000 level or above course in Ling; or permission of instructor. Repeatable to a maximum of 60 cr hrs or 60 completions.

7890.03 Seminar Discussion Groups: Phonetics/Phonology G 1 - 3
A selected group study, with emphasis on individual writing and presentation. Prereq: 5000 level or above course in Ling; or permission of instructor. Repeatable to a maximum of 60 cr hrs or 60 completions.

7890.04 Seminar Discussion Groups: Pragmatics G 1 - 3
A selected group study, with emphasis on individual writing and presentation. Prereq: 5000 level or above course in Ling; or permission of instructor. Repeatable to a maximum of 60 cr hrs or 60 completions.

7890.05 Seminar Discussion Groups: Language Acquisition Research Group G 1 - 3
A selected group study, with emphasis on individual writing and presentation. Prereq: 5000 (600) level or above course in Ling; or permission of instructor. Repeatable to a maximum of 60 cr hrs or 60 completions.

7890.06 Seminar Discussion Groups: Sociolinguistics/Historical G 1 - 3
Linguistics
A selected group study, with emphasis on individual writing and presentation. Prereq: 5000 (600) level or above course in Ling; or permission of instructor. Repeatable to a maximum of 60 cr hrs or 60 completions.

7890.07 Seminar Discussion Groups: Psycholinguistics G 1 - 3
A selected group study, with emphasis on individual writing and presentation. Prereq: 5000 (600) level or above course in Ling; or permission of instructor. Repeatable to a maximum of 60 cr hrs or 60 completions.

7890.08 Seminar Discussion Groups: Computational Linguistics G 1 - 3
A selected group study, with emphasis on individual writing and presentation. Prereq: 5000 (600) level or above course in Ling; or permission of instructor. Repeatable to a maximum of 60 cr hrs or 60 completions.

7890.09 Seminar-Discussion Group on LLIC (Language, Logic, Information, and Computation) G 1 - 3
This discussion group introduces, discusses and reviews the technical details of formal methods in linguistics. Prereq: 5000 (600) level course or above in Ling; or permission of instructor. Repeatable to a maximum of 60 cr hrs or 60 completions.

7890.10 Seminar Discussion Groups: Topics in Linguistics G 1 - 3
A selected group study, with emphasis on individual writing and presentation. Prereq: 5000 (600) level course or above in Ling; or permission of instructor. Repeatable to a maximum of 60 cr hrs or 60 completions.

7890.11 Sociolinguistic Meaning Discussion Group G 1 - 3
Cross-disciplinary discussion group on sociolinguistic meaning. Readings and research drawn from sociolinguistics, anthropology, psycholinguistics, phonetics and social cognition, among others. Prereq: 5000 (600) level course or above in Ling, or permission of instructor. Repeatable to a maximum of 60 cr hrs or 60 completions.

7890.12 Seminar in Linguistics: Computational and Cognitive Approaches to Language Discussion Group G 1 - 3
A selected seminar, with emphasis on individual writing and presentation. This particular decentralized subdivision of Linguistics 7890 (Seminar in Linguistics) is specified to be a forum for individual writing and presentation by members of the Computational and Cognitive Approaches to Language Discussion Group. Repeatable.

7901 Historical Linguistics: Phonology G 3
An introduction to the methods, conventions, and literature of comparative-historical linguistics with primary attention to the comparison and reconstruction of Indo-European phonological systems. Prereq: Ling 4000 (Linguist 601) and 5901 (611), or permission of instructor. Not open to students with credit for Linguist 801.

7902 Historical Linguistics: Morphology G 3
Advanced work in the comparison and reconstruction of morphological and syntactic systems, primarily Indo-European; detailed examination of some of the results of past and current scholarship. Prereq: 7901 (Linguist 801). Not open to students with credit for 802.

7903 Topics in Indo-European G 3
Study of various Indo-European languages and language families and exploration in depth of specific problems in Indo-European grammar. Prereq: Ling 7902 (Linguist 802). Repeatable to a maximum of 18 cr hrs.

8193 Individual Studies G 1 - 9
Assigned reading and individual research. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs or 18 completions. This course is graded S/U.

8200 Seminar in Syntax G 1 - 3
Advanced topics in syntactic analysis. Prereq: 5202 (Linguist 602.02). Repeatable to a maximum of 18 cr hrs.

8300 Seminar in Phonology G 1 - 3
Advanced topics in phonological analysis. Prereq: 5302 (Linguist 603.02). Repeatable to a maximum of 18 cr hrs or 6 completions.

8350 Seminar in Morphology G 1 - 3
Advanced topics in morphological analysis. Repeatable to a maximum of 18 cr hrs or 18 completions.

8400 Seminar in Semantics G 1 - 3
Accounts of semantic judgments in languages, especially within the theory of generative grammar; relationships between syntax, semantics, and language use. Prereq: 5202 (Linguist 602.02). Repeatable to a maximum of 18 cr hrs.

8650 Seminar in Contact Linguistics G 1 - 3
Advanced topics in sociolinguistics. Prereq: 5601 (Linguist 661.01). Repeatable to a maximum of 18 cr hrs or 18 completions.

The goal of this seminar is to explore in some detail the methodological frameworks and theoretical issues that relate to the origins and development of various outcomes of language contact. Prereq: Ling 5651 (Linguist 685). Repeatable to a maximum of 18 cr hrs or 18 completions.
Seminar in Psycholinguistics  
Advanced topics in psycholinguistics.  
Prereq: Ling 5701 (Ling 615). Repeatable to a maximum of 18 cr hrs or 18 completions.

Seminar in Computational Linguistics  
Advanced topics in computational linguistics.  
Prereq: 5802. Repeatable to a maximum of 18 cr hrs.

Non-thesis graduate research  
Non-thesis graduate research. Repeatable to a maximum of 15 cr or 15 completions. This course is graded S/U.

Thesis/Dissertation Research in Linguistics  
Research for thesis and dissertation purposes only. Repeatable to a maximum of 24 cr hrs or 24 completions. This course is graded S/U.

Linguistics  

8700 Seminar in Psycholinguistics  
Advanced topics in psycholinguistics.  
Prereq: Ling 5701 (Ling 615). Repeatable to a maximum of 18 cr hrs or 18 completions.

8800 Seminar in Computational Linguistics  
Advanced topics in computational linguistics.  
Prereq: 5802. Repeatable to a maximum of 18 cr hrs.

6200 Organizational Behavior, Teamwork and Leadership-EMBA  
An overview of factors that influence individual, group and organizational work performance and techniques to improve it; analytical frameworks for determining effectiveness of given techniques in specific circumstances.  
Prereq: Enrollment in Executive MBA program or permission of instructor. Not open to students with credit for 660.

6201 Organizational Behavior  
An overview of factors that influence individual and team performance and techniques to improve it; analytical frameworks for determining effectiveness of given techniques in specific circumstances.  
Prereq: Enrollment in MBA or WPMBA program; or permission of instructor. Not open to students with credit for 660.

6202 Leadership  
An overview of factors that influence individual and team performance and techniques to improve it; analytical frameworks for determining effectiveness of given techniques in specific circumstances.  
Prereq: Enrollment in MBA or WPMBA program; or permission of instructor. Not open to students with credit for 660.

6203 Organizational Behavior and Leadership  
This class is about building critical managerial skills needed to excel in careers, as well as providing an understanding of how and why effective leaders do what they do. While being technically proficient is a necessary prerequisite for many jobs, it is equally important to understand the human side of business and management.  
Prereq: Enrollment in MBA program, or permission of instructor. Not open to students with credit for 6201 or 6202.

Professional Development: Leadership and Team Effectiveness-EMBA  
Skills enhancement in professional teamwork and leadership roles.  
Prereq: Enrollment in Executive MBA program or permission of instructor. Not open to students with credit for BusMHR 801.

6210 Accounting for Decision Making-EMBA  
Uses of Accounting by Managers.  
Prereq: Enrollment in Executive MBA program or permission of instructor. Not open to students with credit for 822.

6211 Accounting for Decision Making  
Examines the role of accounting and financial reporting by investors and managers for decision-making and performance evaluation.  
Prereq: Enrollment in MBA program or permission of instructor. Not open to students with credit for 601 or 801.

6220 Finance  
Course covers time value of money, risk and return, investment criteria, capital budgeting, market efficiency, derivatives, and interest rate parity.  
Prereq: Enrollment in Executive MBA program or Working Professional MBA program; or permission of instructor. Not open to students with credit for 810.

6223 Finance  
A market-oriented framework for analyzing the major types of financial decisions made by corporations. The course covers the following topics: present value techniques, capital budgeting, asset valuation, portfolio theory, asset pricing, market efficiency, options, capital structure, financial distress, financial modeling, risk management, mergers and acquisitions and ethics.  
Prereq: Enrollment in the MBA or WPMBA program. Not open to students with credit for 621, 6222, or BusFin 810 or 811.

6230 Operations Management  
How the operations function contributes to ensuring effective and efficient flow of materials and information within and outside the organization.  
Prereq: Enrollment in Executive MBA program or Working Professional MBA program; or permission of instructor. Not open to students with credit for 850. Repeatable to a maximum of 3 cr hrs. This course is progress graded.

6231 Operations Management I  
How the operations function contributes to ensuring effective and efficient flow of materials and information within and outside the organization.  
Prereq: Enrollment in MBA or permission of instructor. Not open to students with credit for 850.

6232 Operations Management II  
How the operations function contributes to ensuring effective and efficient flow of materials and information within and outside the organization. Continuation of 6231.  
Prereq: 6231 and enrollment in MBA or WPMBA program or permission of instructor. Not open to students with credit for 850.

6233 Operations Management  
Operations Management (MBA 6233) is designed to provide a solid foundation and deeper understanding of how the operations function contributes to ensuring effective and efficient flow of materials and information within and outside the organization.  
Prereq: Enrollment in MBA, or permission of instructor. Not open to students with credit for 850.

6240 Organizations, Markets and Management-EMBA  
Microeconomics from a management and organizational perspective, developing a framework grounded in the fundamentals of economic theory.  
Prereq: Enrollment in Executive MBA program or permission of instructor. Not open to students with credit for 812.

6243 Organizations, Markets and Management  
Microeconomics from a management and organizational perspective, developing a framework grounded in the fundamentals of economic theory.  
Prereq: Enrollment in MBA or WPMBA program, or permission of instructor. Not open to students with credit for 840.

6251 Marketing Management I  
Focuses on the interconnected elements of the marketing mix, its relationship with the other functional areas of management, and marketing responses to the external environment.  
Prereq: Enrollment in Executive MBA program or Working Professional MBA program or permission of instructor. Not open to students with credit for 840.

6252 Marketing Management II  
Focuses on the interconnected elements of the marketing mix, its relationship with the other functional areas of management, and marketing responses to the external environment. Continuation of 6251.  
Prereq: 6251 and enrollment in MBA or permission of instructor. Not open to students with credit for 840.

6253 Marketing  
Focuses on the interconnected elements of the marketing mix, its relationship with the other functional areas of management, and marketing responses to the external environment.  
Prereq: Enrollment in MBA program, or permission of instructor. Not open to students with credit for 840.

6260 Global Environment of Business-EMBA  
Political, economic, social and technological forces shaping today's global business environment.  
Prereq: Enrollment in Executive MBA program, or permission of instructor. Not open to students with credit for 820.

6261 Global Environment of Business  
Political, economic, social and technological forces shaping today's global business environment.  
Prereq: Enrollment in MBA or WPMBA program, or permission of instructor. Not open to students with credit for 820.

6270 Data Analysis for Managers-EMBA  
Introduction to data analysis and statistics for business. Emphasis on achieving an application-oriented understanding of statistical inference and regression analysis and their use in decision making.  
Prereq: Enrollment in Executive MBA program or permission of instructor. Not open to students with credit for 870.

6273 Data Analysis for Managers  
Introduction to data analysis and statistics for business. Emphasis on achieving an application-oriented understanding of statistical inference and regression analysis and their use in decision making.  
Prereq: Enrollment in MBA or WPMBA program, or permission of instructor. Not open to students with credit for 6271 or 870.

Professional Development  
Professional development and skill set enhancement in the areas of leadership, self-awareness, team-based work and ability to adapt to work life in the context of different organizational and global cultures.  
Prereq: Enrollment in MBA program.
298 Master of Business Administration

6201.04 Professional Development G 1½
Professional development and skill set enhancement in the areas of leadership, self-awareness, team-based work and ability to adapt to work in the context of different organization and global cultures.
Prereq: Enrollment in MBA program, or permission of instructor.

6202 Business Lab Challenge G 3
Course provides the foundations of project management. Students work in teams to apply these concepts via the execution and presentation of a business project for a local firm.
Prereq: Enrollment in MBA program.

6203 Strategy Formulation & Implementation-EMBA G 3
Focuses on the determination of the strategic direction of the firm and the management of the strategic process.
Prereq: Enrollment in Executive MBA program or permission of instructor. Not open to students with credit for 6290 or 6291.

6205 Social Impact G 3
Students will learn about the unique challenges and business environment facing non-profit organizations through the design, execution, and presentation of a socially-impactful consulting project with a local non-profit organization.
Prereq: MBA 6293, or permission of instructor.

6206 Business Internship G 1½
The MAX Problem Solving capstone course deploys the decision-making FISHER strategy to examine serious social challenges facing current and future enterprises and to stir discussion and debate for future leaders to embody the best in business stewardship and ethical enterprise principles.

6000 Medical Nutrition Therapy and Pathophysiology I G 3
Study of nutrition therapy in disease: interrelationships of nutrition with biochemical, physiological and anatomical changes associated with energy balance, diseases of the cardiovascular, musculoskeletal and respiratory systems.
Prereq: Admission to Master of Dietetics and Nutrition Program (MDN).

6001 Communications Strategies, Methods and Technology in Dietetics I G 1
An evidence-based review of current topics in dietetics to support the integration of nutrition informatics, scientific evidence and key trends in healthcare to dietetics practice.
Prereq: Admission to Master of Dietetics and Nutrition Program (MDN).

6002 Communications Strategies, Methods and Technology in Dietetics II G 1
An evidence based review of current topics in dietetics to support the integration of nutrition informatics, scientific evidence and key trends in healthcare to dietetics practice.
Prereq: Admission to Master of Dietetics and Nutrition Program (MDN).

6010 Nutrition Care Process Laboratory I G 2
Laboratory: integration and application of knowledge of nutrition, dietetics, metabolism, and physiology to plan and manage the nutritional care of a variety of patients/clients with evidence-based medical nutrition therapy with laboratory and experiential application.
Prereq: Admission to Master of Dietetics and Nutrition Program (MDN).

6028 Supervised Practice: Outpatient G 1 - 5
Supervised practice experience in a specific health care system with outpatient emphasis to achieve professional competencies. The student works under the direction of Registered Dietitian Nutritionists and the supervision of MDN faculty.
Prereq: Admission to Master of Dietetics and Nutrition Program (MDN). Repeatable to a maximum of 5 cr hrs or 3 completions. This course is graded S/U.

6100 Medical Nutrition Therapy and Pathophysiology II G 3
Study of nutrition therapy in disease: interrelationships of nutrition with biochemical, physiological and anatomical changes associated with disorders of Gastroenterology, Endocrine, Renal, Oncology, Nutritional genomics, Intellectual Disabilities.
Prereq: Admission to Master of Dietetics and Nutrition Program (MDN).

6105 Nutrition Care Process Laboratory II G 2
Laboratory: integration and application of knowledge of nutrition, dietetics, metabolism, and physiology to plan and manage the nutritional care of a variety of patients/clients with evidence-based medical nutrition therapy with laboratory and experiential application.
Prereq: Admission to Master of Dietetics and Nutrition Program (MDN).

6188 Supervised Practice: Acute Care G 1 - 5
Supervised practice experience in a specific health care system with inpatient emphasis to achieve professional competencies. The student works under the direction of Registered Dietitian Nutritionists and the supervision of MDN faculty.
Prereq: Admission to Master of Dietetics and Nutrition Program (MDN). Repeatable to a maximum of 5 cr hrs or 3 completions. This course is graded S/U.

6200 Medical Nutrition Therapy and Pathophysiology III G 3
Study of nutrition therapy in disease: interrelationships of nutrition with biochemical, physiological and anatomical changes associated with acute, chronic and terminal illness, surgery and trauma.
Prereq: Admission to Master of Dietetics and Nutrition Program (MDN).

6250 Nutrition Care Process Laboratory III G 2
Laboratory: integration and application of knowledge of nutrition, dietetics, metabolism, and physiology to plan and manage the nutritional care of a variety of patients/clients with evidence-based medical nutrition therapy with laboratory and experiential application.
Prereq: Admission to Master of Dietetics and Nutrition Program (MDN).

6300 Advanced Nutrition Counseling Education G 3
Individual and group nutrition education/counseling as applied to responsibilities of the registered dietitian. Theoretical principles and teaching skills needed for effective group teaching of nutrition and to creation of content for a variety of populations and settings.
Prereq: Admission to Master of Dietetics and Nutrition Program (MDN).

6350 Advanced Nutrition Counseling Education II G 2
Individual and group nutrition education/counseling as applied to responsibilities of the registered dietitian. Theoretical principles and teaching skills needed for effective individual and group teaching of nutrition and to creation of content for a variety of populations and settings.
Prereq: 6300 and admission to MDN Program.

6400 Advanced Nutrition and Physical Assessment G 3
Comprehensive development of skills for nutritional & physical assessment information using evidence-based research. Assessment of macro and micronutrient status will be discussed in the context of Inflammation, pathology, aging, and sarcopenia will be investigated.
Prereq: Admission to Master of Dietetics and Nutrition Program (MDN).

6495 Supervised Practice: Culminating G 3
Supervised practice experience in a specific health care system with inpatient and outpatient emphasis to achieve professional competencies. The student works under the direction of Registered Dietitian Nutritionists and the supervision of MDN faculty.
Prereq: Admission to Master of Dietetics and Nutrition Program (MDN). Repeatable to a maximum of 5 cr hrs or 3 completions.

6550 Advanced Community Nutrition and Health Promotion G 3
Advanced study of community needs assessment, national nutrition policy, design and evaluation of programs and cultural factors to promote the health and nutritional status of the community.
Prereq: Admission to Master of Dietetics and Nutrition Program (MDN).

6558 Supervised Practice: Community G 1 - 5
Supervised practice experience in a specific health care system with community outpatient emphasis to achieve professional competencies. The student works under the direction of Registered Dietitian Nutritionists and the supervision of MDN faculty.
Prereq: Admission to Master of Dietetics and Nutrition Program (MDN). Repeatable to a maximum of 5 cr hrs or 3 completions.

6800 Nutrition Entrepreneurship, Management, and Leadership G 3
Managerial leadership principles for the development/administration of clinical departments in the health care system. Integration of leadership literature and content with facilitated group discussion and learning circles to develop the skills required of leaders.

6889 Supervised Practice: Food Service Management G 1 - 5
Supervised practice experience in a specific health care system with community outpatient emphasis to achieve professional competencies. The student works under the direction of Registered Dietitian Nutritionists and the supervision of MDN faculty.
Prereq: Admission to Master of Dietetics and Nutrition Program (MDN). Repeatable to a maximum of 5 cr hrs or 3 completions.

6900 Practice-Based Research in Dietetics and Nutrition G 3
Overview of research in the Nutrition and Dietetics. This course is intended to prepare students to be educated consumers of research and to enable them to find, understand, interpret, and apply research findings in their professional practice.
Prereq: Admission to Master of Dietetics and Nutrition Program (MDN).

6950 Evidence Based Analysis in Nutrition and Dietetics G 3
An in depth examination of the role of nutrients and food components and their impact on body systems and health.
Prereq: Admission to Master of Dietetics and Nutrition Program (MDN).

Materials Science and Engineering

2100 Introduction to Engineering Materials U 3
Introduction to the properties (mechanical, electrical, thermal, diffusive, degradative, magnetic, optical), structure, and processing of engineering materials, including ceramic, metals, polymers, biological, and composite materials.
Prereq: Physics 1250 or 1260, Math 1151 or 1161, and Chemistry 1210 or 1250 or 1910H; or permission of instructor.

2194 Group Studies in Materials Science and Engineering U 0 - 6
Special topics in MSE not offered in other courses. Repeatable to a maximum of 12 cr hrs or 9 completions.
2241 Structure and Characterization of Materials U 3
Prereq: 2010, Physics 1250 or 1260, Math 1151 or 1161, and Chem 1210 or 1250; and enrollment as MatScEn-BS student; or permission of instructor. Not open to students with credit for both 341 and 342.

2251 Thermodynamics of Materials U 3
Fundamental basis of three laws of thermodynamics, phase equilibria, reaction equilibria, solution theory, and phase diagrams and electrochemistry.
Prereq: 2010, Physics 1250 or 1260, Math 1151 or 1161, and Chem 1210 or 1250; and enrollment as MatScEn-BS or WeldEng-BS student; or permission of instructor. Not open to students with credit for both 401 and 525.

2321 Modeling and Simulation Lab I U 3
A modeling and simulation laboratory appropriate to sophomore-level study in materials science and engineering.
Prereq: 2010, Physics 1250 or 1260, Math 1151 or 1161, and Chem 1210 or 1250; and enrollment as MatScEn-BS student; or permission of instructor.

2331 Structure and Characterization Lab U 2
Companion laboratory course to MatScEn 2241. Experiments on X-ray diffraction, scanning electron microscopy, optical microscopy, and stereology with applications. Statistical treatment of data and technical reporting.
Prereq: 2010, Physics 1250 or 1260, Math 1151 or 1161, and Chem 1210 or 1250; and enrollment as MatScEn-BS student; or permission of instructor. Not open to students with credit for 282.

3141 Transformation and Processing of Materials U 3
Introduction to transformations, and the relationship between microstructure, properties, and processing in metals, ceramics, semiconductors, and polymers.
Prereq: 2251, and enrollment as MatScEn-BS or WeldEng-BS major; or permission of instructor.

3151 Transport Phenomena and Kinetics U 3
Provides students with concepts related to transport phenomena and kinetics as applied to processing of metals, ceramics, polymers, and composite materials.
Prereq: 2010 and 2241; and Math 2177 or 2415; or 2174; and enrollment as MatScEn-BS major; or permission of instructor.

3189 Professional Practice in Industry U ½ - 3
Preparation of a comprehensive report based on employment experience in a co-op or job in industry. Repeatable to a maximum of 8 or hrs or 8 completions. This course is graded S/U.

3193.01 Individual Studies in Materials Science & Engineering U ½ - 6
Investigations in areas of advanced non-thesis research. Library and/or research investigations under the directions of instructors. Comprehensive report required.
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions. This course is graded S/U.

3193.02 Individual Studies in Materials Science & Engineering U ½ - 6
Investigations in areas of advanced non-thesis research. Library and/or research investigations under the directions of instructors. Comprehensive report required.
Prereq: Permission of Instructor. Repeatable to a maximum of 12 cr hrs or 12 completions.

3261 Introduction to the Mechanical Behavior of Materials U 3
Survey of the mechanical response of solids to forces and stresses. Responses studied include elastic, viscoelastic, plastic deformation and fracture.
Prereq: 2010, and MechEng 2020 or 2040, and enrollment as MatScEn-BS student; or permission of instructor.

3271 Electronic Properties U 3
Introduction to structure, property, and applications of electronic materials. Includes electronically and ionically conducting materials, dielectrics, and optical and magnetic materials.
Prereq: 2010; and Math 1151 or 1161; and Physics 1251 or 1261; and enrollment as MatScEn-BS student; or permission of instructor. Not open to students with credit for 371.

3321 Modeling and Simulation Lab II U 2
Modeling and simulation techniques appropriate to junior-level study in materials science and engineering.
Prereq: 2321, 3141, and 3151, and enrollment as MatScEn-BS student; or permission of instructor.

3331 Materials Science and Engineering Lab I U 2
Laboratory experiments related to materials processes and properties. Introduction to experimental techniques used in materials fields. Data analysis, presentation, and technical writing skills.
Prereq: 2331, and enrollment as MatScEn-BS major; or permission of instructor. Not open to students with credit for both 581.01 and 581.02.

3332 Materials Science and Engineering Lab II U 2
Laboratory experiments related to materials application and performance. Advanced experimental techniques and analysis in these areas. Technical writing skills at fully professional level.
Prereq: 2241, 2331, and 2251; and enrollment as MatScEn-BS student; or permission of instructor. Not open to students with credit for both 581.02 and 581.03.

3333 Materials Science and Engineering Laboratory for Welding Engineering Students U 2
Lab experiments related to heat treating, casting, welding, materials characterization, and properties. Introduction to experimental techniques in materials science. Development of technical writing skills.
Prereq: WeldEng 2001 and 2901; and enrollment as WeldEng-BS major; or permission of instructor. Not open to students majoring in MatScEn.

3611 Biological Response to Biomaterials U 3
The biological response to biomaterials implanted within the human body.
Prereq: 2010, or permission of instructor.

4181 Materials Selection U 2
Systematic and quantitative strategies for selecting materials and processes as a foundation for designing with materials.
Prereq: 2241, 2251, 2261, 2321, and enrollment as MatScEn-BS major; or permission of instructor. Not open to students with credit for 600.

4193.01 Individual Studies in Materials Science & Engineering U ½ - 6
Investigations in areas of advanced non-thesis research. Library and/or research investigations under the directions of instructors. Comprehensive report required.
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions.

4193.02 Individual Studies in Materials Science & Engineering U ½ - 6
Investigations in areas of advanced non-thesis research. Library and/or research investigations under the directions of instructors. Comprehensive report required.
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions.

4194 Group Studies in Materials Science and Engineering U 0 - 6
Special topics in Materials Science and Engineering. Repeatable to a maximum of 12 cr hrs or 8 completions.

4321 Modeling and Simulation-Based Design U 3
Practical modeling and simulation techniques appropriate to senior-level design in materials science and engineering.
Prereq: 2241, 3321, and enrollment as MatScEn-BS major; or permission of instructor.

4381.01 Design and Professional Practice I U 3
An in-depth design project to foster independent thinking and to develop problem-solving skills. Design of experiments, applied statistics, presentation and communication skills will be discussed.
Prereq: 3141, 3151, and 3331. Prereq or concur: 3261, 3271, or 3332, and enrollment as MatScEn-BS major; or permission of instructor.

4381.02 Design and Professional Practice I, Biomedical U 3
First course in a two-course MSE Senior Design sequence with a biomedical engineering emphasis. Introduction to design principles; challenges of biomedical device design; projects focus on helping people with disabilities.
Prereq: 3141, 3151, 3331, and enrollment as MatSEng-BS major. Prereq or concur: 3261, 3271, or 3331.

4382.01 Design and Professional Practice II U 3
An in-depth design project to foster independent thinking and to develop problem-solving skills. Design of experiments, applied statistics, presentation and communication skills will be discussed.
Prereq: 4381.01, and enrollment as MatSEng-BS major; or permission of instructor.

4382.02 Design and Professional Practice II, Biomedical U 3
Second course in a two-course MSE Senior Design sequence with a biomedical engineering emphasis. Applying design principles; challenges of biomedical device design; engineering and testing devices that focus on helping people with disabilities.
Prereq: 4381.02, and enrollment as MatSEng-BS major; or permission of instructor.

4998 Undergraduate Research U ½ - 3
Supervised undergraduate research on various topics. Repeatable to a maximum of 6 or hrs or 6 completions.

4999 Undergraduate Research U ½ - 3
Supervised undergraduate research on topics in Materials Science & Engineering.
Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs or 2 completions.

4999H Undergraduate Honors Research U ½ - 3
Supervised research and project work arranged individually for honors students on topics in Materials Science & Engineering.
Prereq: Honors standing, Sr standing in MatScEn major, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>5193.01</td>
<td>Individual Studies in Materials Science &amp; Engineering</td>
<td>U G 0 - 6</td>
<td>Investigations in areas of advanced non-thesis research. Library and/or research investigations under the directions of instructors. Comprehensive report required. Prereq: Permission of instructor. Repeatable to a maximum of 12 or 4 hrs. This course is graded S/U.</td>
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<tr>
<td>5193.02</td>
<td>Individual Studies in Materials Science &amp; Engineering</td>
<td>U G 0 - 6</td>
<td>Investigations in areas of advanced non-thesis research. Library and/or research investigations under the directions of instructors. Comprehensive report required. Prereq: Permission of instructor. Repeatable to a maximum of 12 or 4 hrs.</td>
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</tr>
<tr>
<td>5194</td>
<td>Group Studies in Materials Science &amp; Engineering</td>
<td>U G 0 - 6</td>
<td>Investigations in areas of advanced non-thesis research. Library and/or research investigations under the directions of instructors. Comprehensive report required. Repeatable to a maximum of 12 or 4 hrs.</td>
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</tr>
<tr>
<td>5237</td>
<td>Photovoltaics Laboratory</td>
<td>U G 4</td>
<td>Introduce student to basic techniques for fabrication and measurement of photovoltaic cells. Laser computer tools for simulation of photovoltaic cell characteristics. Obtain practical experience with contact and series resistance, spectral sensitivity, open circuit voltage, short circuit current, and quantum efficiency of photovoltaic devices and test structures fabricated in lab. Preq: 3271 or ECE 3030, and enrollment in ECE or MatScEn major; or Grad standing in Engineering, Biological Sciences, or Math and Physical Sciences. Cross-listed in ECE.</td>
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</tr>
<tr>
<td>5321</td>
<td>Computational Thermodynamics and Kinetics</td>
<td>U G 2</td>
<td>Comprehensive background on computational thermodynamics and kinetics. Includes focus on CALPHAD (Calculation of Phase Diagram) methodology. Preq: 2251 and 3151 or equivs., or Grad standing in MatScEn or WeldEng; or permission of instructor. Cross-listed in WeldEng 4121 and 7121.</td>
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</tr>
<tr>
<td>5431</td>
<td>Advanced Metals Laboratory</td>
<td>U G 1</td>
<td>Advanced laboratory covering various topics in metallic materials. Preq: 2241, 3311, 3141, 3261, and 3332. Preq or concor: 5441 or 5451; or permission of instructor. Not open to students with credit for 669, or to Grad students enrolled in MatScEn or WeldEng.</td>
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<tr>
<td>5441</td>
<td>Physical Metallurgy</td>
<td>U G 3</td>
<td>Physical metallurgy of ferrous and non-ferrous alloys. Emphasis on alloy design, processing and structure-property relations. Preq: 3141, 3261, and enrollment as MatScEn-ES major student; or Grad standing; or permission of instructor. Not open to students with credit for both 661 and 663.</td>
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<tr>
<td>5451</td>
<td>Molten Metal Processing</td>
<td>U G 3</td>
<td>An advanced class in application of thermodynamics, kinetics, and macro-transport phenomena to primary metals production, refining, and solidification processing. Preq: 2251 or 3151; or Grad standing; or permission of instructor. Not open to students with credit for 667, 668, 5451, ISE 5502, or 651.02. Cross-listed in ISE 5502.</td>
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<tr>
<td>5531</td>
<td>Ceramics Processing Laboratory</td>
<td>U G 1</td>
<td>Laboratory experiments involving synthesis/fabrication and characterization of high performance technical ceramics. Preq: 3141, 3261, 3271, 3332, and enrollment as MatScEn-ES major student; or Grad standing; or permission of instructor. Not open to students with credit for 619.</td>
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<tr>
<td>5532</td>
<td>Electronic, Optical, and Magnetic Properties Laboratory</td>
<td>U G 1</td>
<td>Correlates electronic, optical, and magnetic properties of materials with structure, composition, and microstructure. Examples include resistivity, the Hall effect, and ferromagnetic/ferroelectric hysteresis. Preq: 3141, 3261, 3271, 3332, and enrollment as MatScEn-ES major student; or Grad standing; or permission of instructor. Not open to students with credit for 679.</td>
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<tr>
<td>5551</td>
<td>Ceramic Processing</td>
<td>U G 3</td>
<td>Overview of ceramics processing, including essential topics of: powder synthesis/characterization, colloidal/sol-gel processing, shaping/consolidation, sintering, microstructure development and nanoceramics, and thin films/coating. Preq: 3141, 3151, and enrollment as MatScEn-ES major; or Grad standing; or permission of instructor. Not open to students with credit for 615.</td>
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<tr>
<td>5571</td>
<td>Electronic Ceramics</td>
<td>U G 3</td>
<td>Functional ceramics covering electrical, magnetic and optical properties of oxides. Emphasis is on the processing-microstructure-property correlation. Preq: 3271, or permission of instructor. Not open to students with credit for 614.</td>
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<tr>
<td>5571.71</td>
<td>Electronic Ceramics I: Electronic and Ionic Conductors</td>
<td>U G 1½</td>
<td>Functional ceramic oxides covering electronic and ionic conductors and their applications in devices. Emphasis on the processing-microstructure-property correlation. Preq: 3271, or permission of instructor. Not open to students with credit for 5571.</td>
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<tr>
<td>5571.72</td>
<td>Electronic Ceramics II: Dielectric, Magnetic, and Optical Ceramics</td>
<td>U G 1½</td>
<td>Dielectric, Magnetic, and Optical Ceramics and their applications in devices. Emphasis on the processing-microstructure-property correlation. Preq: 3271, or permission of instructor. Not open to students with credit for 5571.</td>
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<tr>
<td>5572</td>
<td>Materials for Energy Technology</td>
<td>U G 3</td>
<td>Structure property relationships of materials in energy applications. Photovoltaic materials, solid state photonic materials, electrochemical devices such as batteries, fuel cells and chemical sensors, superconductors, memory and nuclear materials. Preq: 2241, and 3271 or ECE 2300, and enrollment as MatScEn-BS major; or Grad standing; or permission of instructor.</td>
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<tr>
<td>5605</td>
<td>Quantitative Introduction to Materials Science</td>
<td>U G 3</td>
<td>A quantitative survey of the key elements related to the processing, structure and properties of materials. Structural materials and core aspects are emphasized. Intended for MS/PhD students enrolled in MatScEn who come from a non-MatScEn background. Preq: Grad standing in MatScEn or WeldEng; or permission of instructor. Not open to students with credit for 2010, 6605, or 605, or to students enrolled in MatScEn-BS.</td>
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<tr>
<td>5611</td>
<td>Materials in Medicine</td>
<td>U G 3</td>
<td>The materials science of plastics, metals and ceramics currently used to replace or supplement tissues within the human body. Preq: 2010 and 3611; or Grad standing; or permission of instructor. Not open to students with credit for both 645 and 646.</td>
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<tr>
<td>5631</td>
<td>Biomaterials Laboratory</td>
<td>U G 1</td>
<td>A laboratory experience in the processing and characterization of biomaterials used for the replacement of human tissues. Preq or concor: 5611 or 5641; or permission of instructor. Not open to students with credit for 5649.</td>
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<tr>
<td>5641</td>
<td>Structure-Property Relationships of Polymers</td>
<td>U G 3</td>
<td>An understanding of the structure/property relationships that drive the continued expansion of polymers into a wide array of applications. Preq: 2010, CPHR 2.0 or higher, and rank 3 or 4 in Engineering; or Grad standing; or permission of instructor. Not open to students with credit for both 642 and 643.</td>
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<tr>
<td>5651</td>
<td>Biomaterials Processing</td>
<td>U G 3</td>
<td>The relationship between the processing of biomaterials - metals, polymers and ceramics - and the impact that these steps have on final biomedical properties. Preq: 5611 or 5641; or permission of instructor.</td>
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<tr>
<td>5711.70</td>
<td>Introduction to Composites</td>
<td>U G 1½</td>
<td>In this seven-week course, students will gain the theoretical background as well as practical knowledge of the structure and properties of ceramic, metal, and polymer matrix composites. Preq: 3261 or 5641; or Grad standing; or permission of instructor. Not open to students with credit for 644 or 5711.</td>
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<tr>
<td>5761.71</td>
<td>Mechanical Behavior of Crystalline Solids at Lower Temperature</td>
<td>U G 1½</td>
<td>Strength and Deformation Mechanisms in Crystalline Solids at Low Temperatures. Preq: 3261 or 3332; or Grad standing; or permission of instructor. Not open to students with credit for MatScEn 5761.</td>
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<tr>
<td>5761.72</td>
<td>Mechanical Behavior of Crystalline Solids at High Temperatures</td>
<td>U G 1½</td>
<td>Strength and deformation mechanisms in crystalline solids at high temperatures. Preq: 3261 or 3332; or Grad standing; or permission of instructor.</td>
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<tr>
<td>5763.70</td>
<td>Fracture and Fatigue of Engineering Materials</td>
<td>U G 1½</td>
<td>This seven week course will provide a background in fracture and fatigue with a survey of material-specific mechanisms. Preq: 3261, or Grad standing; or permission of instructor. Not open to students with credit for 5763.</td>
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<tr>
<td>5774</td>
<td>Polymer Membranes</td>
<td>U G 3</td>
<td>Membrane separation mechanisms, transport models, permeability computations/measurements, membrane materials/types/modules, membrane contactors/reaktions, and applications. Preq: ChBE 3508 (509), or Grad standing; or permission of instructor. Not open to students with credit for 774 or ChBE 774. Cross-listed in ChBE.</td>
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<tr>
<td>5991</td>
<td>Corrosion and Failure Analysis</td>
<td>U G 3</td>
<td>Covers fundamentals of environmental degradation of materials, corrosion phenomenology and corrosion prevention strategies. Also methodologies for root cause analysis of failed components. Preq: Sr or Grad standing in Engineering, or permission of instructor.</td>
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<tr>
<td>5971</td>
<td>Solid State Science</td>
<td>U G 3</td>
<td>In-depth study of electronic structure of materials as related to the materials’ atomistic structure. The origins of the mechanical, optical and magnetic properties are discussed. Preq: 2010 and 3271; or permission of instructor.</td>
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</tbody>
</table>
Investigations in areas of advanced non-thesis research. Library and/or research investigations under the directions of instructors. Comprehensive report required. Prereq: Permission of instructor. Repeatable to a maximum of 12 or hrs or 12 completions. This course is graded S/U.

Individual Studies in Materials Science & Engineering

Investigations in areas of advanced non-thesis research. Library and/or research investigations under the directions of instructors. Comprehensive report required. Prereq: Permission of instructor. Repeatable to a maximum of 12 or hrs or 12 completions.

Group Studies in Materials Science and Engineering

Special topics in Materials Science and Engineering. Repeatable to a maximum of 12 or hrs or 8 completions.

Superconducting Materials and Properties

Introduction to superconducting materials and phenomena. It will focus on the description of various materials and their properties in terms of basic superconducting phenomena, and the influence of materials-based properties on these phenomena. Prereq: Grad standing in Material Science & Engineering, Welding, or Engineering; or Math and Physical Sciences; or permission of instructor.

Equations of Materials Science for High School Educators

Provides academic background and quantitative examples to the demonstrations in the ASM Materials Foundation Materials Camps for Teachers. This requires the students to this class to deploy related content in their high school classroom settings. Prereq: Graduate Non-Degree status, or permission of instructor.

Principles of the Characterization of Materials

Fundamentals of beam-solid interactions and their application to the characterizing the structure and composition of materials. The emphasis of this course will be on techniques utilizing X-ray and electron probes. Prereq: Grad standing in MatSciEn or WeldEng, or permission of instructor. Not open to students with credit for 715.

Thermodynamics of Materials

Thermodynamics of mixtures and phase equilibria relevant to metallurgy and materials science. Prereq: Grad standing or permission of instructor. Not open to students with credit for 730.

Corrosion Science and Materials Electrochemistry

Electrochemistry fundamentals, corrosion thermodynamics and kinetics, experimental approaches, corrosion phenomenology, corrosion control strategies, nonmetallic material degradation, electrochemistry of batteries, fuel cells, and electrodeposition. Prereq: Grad standing in MatSciEn or permission of instructor. Not open to students with credit for 735.

Diffusion and Interface Kinetics

Detailed atomic and phenomenological descriptions of rate limiting steps, diffusion, and interface kinetics with applications involving mass transport and phase transitions in the solid state. Prereq: Grad standing in MatSciEn, or permission of instructor. Not open to students with credit for 737.

Practical Scanning Electron Microscopy Laboratory

Provides basic understanding of scanning electron microscopy characterization methods, understanding of sample preparation & compatibility, various imaging modes, and analytical techniques. This course focuses primarily on the practical operation of a scanning electron microscope, and not on its theoretical background. Prereq: Grad standing; or permission of instructor. This course is graded S/U.

Practical Transmission Electron Microscopy Lab

Transmission Electron Microscopy with emphasis on practical methods. Prereq: Grad standing; or permission of instructor.

Structure and Defects in Materials

Elements of crystallography, structure and defects in solids. Prereq: Grad standing in Chem, Engr; or Physics; or permission of instructor.

Computational Materials Modeling

Introduction to common computer modeling methods, including hands-on work with emphasis on the atomic and nano-scales. Prereq: Permission of instructor. Not open to students with credit for 756.

Computational Materials Modeling - Continuum Scale

Practical computational materials modeling and simulation techniques with focus on methods at the continuum scale. Prereq: Grad standing in MatSciEn or permission of instructor. Not open to students with credit for 6756 or 756.

Computational Materials Modeling - Atomic Scale

Practical computational materials modeling and simulation techniques with focus on the atomic scale. Prereq: Grad standing in MatSciEn or permission of instructor. Not open to students with credit for 6756 or 756.

Materials Science and Engineering

Advanced Metallic Materials and Processing

A graduate class in design, processing and simulation of advanced metallic materials including alloys (ferrous and non-ferrous) and metal matrix composites. Prereq: Grad standing in AeroEng, ISE, MatSciEn, MechEng, NuclEn, or WeldEng; or permission of instructor. Not open to students with credit for ISE 6557. Cross-listed in ISE 6557.

Mechanical Behavior of Materials

Mechanical response of materials to loads and deformation. Prereq: Grad standing in MatSciEn, or permission of instructor. Not open to students with credit for 765.

Electronic Properties of Materials

In-depth analysis of the structure - property relationships and application of materials in electronics, optics and magnetics. Prereq: Grad standing in Engineering or Science or permission of instructor. Not open to students with credit for 777.

Magnetic Materials

This course teaches the basic properties of magnetic materials in a wide class of materials including metals, insulators, semiconductors. The relationships between structure, composition, processing, and magnetic properties will be reviewed with a special focus on the atomic origins of magnetism and the ability to engineer these mechanisms through alloying or doping, or layered structures. Prereq: Grad standing in Engineering or Mathematical and Physical Science; or permission of instructor.

Graduate Research in Materials Science and Engineering

Research for thesis purposes only. Repeatable. This course is graded S/U.

Individual Studies in Materials Science and Engineering

Investigations in areas of advanced non-thesis research. Library and/or research investigations under the directions of instructors. Comprehensive report required. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions. This course is graded S/U.

Individual Studies in Materials Science & Engineering

Investigations in areas of advanced non-thesis research. Library and/or research investigations under the directions of instructors. Comprehensive report required. Prereq: Grad standing in MatSciEn, or permission of instructor. Not open to students with credit for 777.

Graduate Research in Materials Science and Engineering

Special topics in Materials Science and Engineering. Repeatable to a maximum of 12 cr hrs or 8 completions.

Epitaxial Heterostructures

Science and techniques behind thin film growth and engineering for combining different materials, altering chemical composition at the nanometer scale, while controlling defects and strain. Epitaxial crystal growth will be explained. Students will gain an understanding of the kinetics, thermodynamics, and technology involved in epitaxial heterostructures and self-assembled nanosystems. Prereq: Grad standing. Cross-listed in ECE.

Advanced Topics in Corrosion Science

Advanced topics in corrosion science. Prereq: 6735. Not open to students with credit for 881.

Point Defects in Crystalline Materials

A thermodynamic and electrochemical treatment of the formation, concentrations, mobilities, and interactions of atomic, ionic, and electronic point defects in materials at high temperatures. Prereq: 6730 and 6737, or permission of instructor. Not open to students with credit for 835.

Solid Surfaces and Interfaces

Elements of surface and interface science. Thermodynamics, structure, microstructure and kinetics of interfacial phenomena in materials. Prereq: 6730, 6737, and 6747. Not open to students with credit for 845.

Structural Transformations

Structural transformations in materials with emphasis on basic phenomena. Selected topics will be developed based on classical approaches and recent advances. Prereq: 6730 and 6737. Not open to students with credit for 850.

Electron Diffraction, Imaging and Spectroscopies

Advanced topics in characterizing materials using transmission electron microscopy. Topics covered include electron diffraction techniques, important imaging modes, and widely used spectroscopy methods. Prereq: 6715, or permission of instructor. Not open to students with credit for 855.

Microstructural Elasticity

Elastic interaction between vacancies, dislocations, faults, grain boundaries, interfaces, precipitates, transforming particles, cracks, and indentations controls material properties, primarily mechanical. Prereq: 6765.
302 Materials Science and Engineering

7895 Graduate Seminar in Materials Science and Engineering G 1
Presentations and discussion by graduate students, outside speakers on thesis research, and current problems in Materials Science and Engineering. Prereq: Grad standing in Materials Science and Engineering, or permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

8000 MSE PhD Dissertation Overview G 1
Public review of PhD research and committee guidance on dissertation topic. Prereq: Only open to students who have passed the MSE PhD Candidacy Exam. This course is graded S/U.

8193.01 Individual Studies in Materials Science and Engineering G 0 - 6
Investigations in areas of advanced non-thesis research. Library and/or research investigations under the directions of instructors. Comprehensive report required. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions. This course is graded S/U.

8193.02 Individual Studies in Materials Science & Engineering G 0 - 6
Investigations in areas of advanced non-thesis research. Library and/or research investigations under the directions of instructors. Comprehensive report required. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions.

8194 Group Studies in Materials Science and Engineering G 0 - 6
Special topics in Materials Science and Engineering. Repeatable to a maximum of 12 cr hrs or 8 completions.

8999 Graduate Research in Materials Science and Engineering G ½ - 18
Research for dissertation purposes only. Repeatable. This course is graded S/U.

Mathematics

1050 Precalculus Mathematics I U 5
Fractions and decimals, basic algebra, graphing lines, factoring, systems of equations. Credit for this course will not count toward graduation in any degree program. Prereq: 1040 (040) or 050, or Math Placement Level T, or permission of department. Not open to students with credit for any Math course above 1050 (050). This course is available for EM credit.

1060 Supplementary Pre-College Mathematics U 2
Matth 1060 is a terminal math course designed to satisfy the Quantitative Reasoning: Basic Computation category of the General Education Requirement (GE). Students may follow-up with Math 1116 to satisfy the Mathematical or Logical Analysis category of the General Education Requirement (GE). Students who wish to take math courses higher than Math 1116 should take Math 1075 rather than Math 1060. Prereq: C- or better in 1050, or Math placement level S. Not open to students with credit for any higher numbered math class, or for any quarter class numbered higher than 50. GE quant reason basic computation course.

1074 Transition Pre-College Mathematics II U 3
Graphing lines, systems of two equations, factoring, rational expressions, quadratic equations, applications. Credit for this course will not count toward graduation in any degree program. This course is used only for transfer credit. Prereq: 1050 (50), Not open to students with credit for any Math course numbered 1075 (75) or above. GE quant reason basic computation course.

1075 Precalculus Mathematics II U 4
Algebraic, rational, and radical expressions; functions and graphs; quadratic equations; absolute value; inequalities; and applications. Credit for this course will not count toward graduation in any degree program. Prereq: 1074 or 075; or a grade of C- or above in 1050; or Math Skills Assessment Level R or S; or ACT math subscore of 22 or higher that is less than 2 years old. Not open to students with credit for any Math course above 1075, except for 1116; or for any quarter-system course above 075, except for 116. This course is available for EM credit. GE quant reason basic computation course.

1116 Excursions in Mathematics U 3
Critical thinking and problem solving, with relevant topics met in everyday life. Appropriate for non-science majors. Prereq: 1073, 1074, 1075, 75, or 104; or Math Placement Level R or above; or ACT math subscore of 22 or higher that is less than 2 years old. Not open to students with credit for any Math course above 1075, except for 1116; or for any quarter-system course above 075, except for 116. This course is available for EM credit. GE quant reason math and logical only course.

1118 Mathematics for Architects U 3
Topics in geometry for architecture majors. Prereq: A grade of C- or above in 1148 or 1150, or credit for 148 or 150, or Math Placement Level M or L, and enrollment in School of Architecture.

1120 Precalculus with Review I U 5
This is the first course of a two course sequence covering precalculus. In this first course, topics covered will include an introduction to functions (linear, polynomial and rational), equations and inequalities along with appropriate review. This course is designed with an emphasis on reviewing these fundamental basic algebra skills as they apply to precalculus in a just-in-time manner. Prereq: A grade of C- or above in 1075; or grade of B- or above in 1050; or Math Placement Level R. Not open to students with credit for 1121 or above. GE quant reason math and logical only course.

1121 Precalculus with Review II U 5
This is the second course of a two course sequence in precalculus. In this second course, topics covered will include an introduction to functions (exponential, logarithmic, trigonometric), equations, inequalities and right-angle trigonometry with appropriate review. This course has an emphasis on reviewing fundamental basic algebra skills as they apply to precalculus in a just-in-time manner. Prereq: A grade of C- or above in 1120. GE quant reason math and logical only course.

1125 Mathematics for Elementary Teachers I U 5
Sequence 1125-1126 involves numbers, geometry, measurement, and mathematical reasoning, for prospective elementary school teachers. Prereq: A grade of C- or above in 1075; or credit for 1074, 75, or 104; or Math Placement Level R or above; or ACT math subscore of 22 or higher that is less than 2 years old; and enrollment in Early Childhood or Special Education major, or in Middle Childhood major or pre-major with area of concentration different than Math.

1126 Mathematics for Elementary Teachers II U 5
Continuation of 1125: numbers, geometry, measurement, and mathematical reasoning, for prospective elementary school teachers. Prereq: A grade of C- or above in 1125, and enrollment in Early Childhood or Special Education major, or in Middle Childhood major or pre-major with area of concentration different than Math.

1130 College Algebra for Business U 4
Algebraic, exponential, and logarithmic functions. Matrix algebra. Applications to business. Prereq: A grade of C- or above in 1075; or credit for 1074, 75, or 104; or Math Placement Level R or above; or ACT math subscore of 22 or higher that is less than 2 years old. Not open to students with credit for 1131 (131), or for any Math course numbered 1149 (150) or above. This course is available for EM credit. GE quant reason math and logical only course.

1131 Calculus for Business U 5
Survey of calculus of one and several variables: applications to business. Prereq: A grade of C- or above in 1130, 1144, 1148, or 1150; or credit for 130, 148, or 150, or Math Placement Level L. Not open to students with credit for 1151 (151) or above, or 1134 (132). This course is available for EM credit. GE quant reason math and logical only course.

1134 Transition Calculus for Business U 3
Integral and multi-variable calculus for business. This course is used only for transfer credit. Prereq: 131, or equiv. Not open to students with credit for 132. This course is available for EM credit.

1135 Number and Operations for Teachers U 5
The first course in a two semester sequence for teachers of elementary and middle grade students. This course focuses on concepts of numbers and arithmetic operations, including modern and historical perspectives. Prereq: A grade of C- or above in 1075; or credit for 1074, 75, or 104; or Math Placement Level R or above; or ACT math subscore of 22 or higher that is less than 2 years old. Not open to students with credit for 106. GE quant reason math and logical only course.

1136 Measurement and Geometry for Teachers U 5
This course is the second in a two semester sequence for teachers of elementary and middle grade students. This course focuses on concepts of measurement and geometry, including modern and historical perspectives. Prereq: A grade of C- or above in 1135.

1138 Fundamentals of Mathematics for Engineers U 4
This application-oriented, hands-on, introduction to engineering mathematics course will provide an overview of the salient math topics most heavily used in beginning engineering courses. All math topics will be presented within the context of an engineering application, and reinforced through extensive examples of their use in the core engineering courses. Prereq: Math Placement Level N. Not open to students with credit for 1151 or Engr 1138. Cross-listed in Engr.

1140 Calculus with Review I U 4
This is the first of a two semester course sequence. The topics covered in Math 1140 will include differential calculus of one real variable, with review of important algebra and pre-calculus concepts. Calculus with Review I is a course designed with an emphasis on reviewing these fundamental pre-calculus skills as they apply to calculus. Prereq: A grade of C- or above in 1148 and 1149, or in 1144, 1150, or 150, or Math Placement Level L. Not open to students with credit for 1141, or 1151 or above, or 151.xx or above. GE quant reason math and logical only course.
1141 Calculus with Review II
Spring
4
This is the second of a two semester course sequence. The topics covered in Math 1141 will include differential calculus of one real variable, with review of important algebra and pre-calculus concepts. Math 1141 is a course designed with an emphasis on reviewing these fundamental pre-calculus skills as they apply to calculus.
Prereq: A grade of C- or above in 1140. Not open to students with credit for 1151 or above (151.xx, or above). GE quant reason math and logical anly course.

1144 Precalculus Transition
Spring
4
Math 150 done in a semester: Properties and applications of rational, logarithmic, exponential, trigonometric, and inverse trigonometric functions. Introduction to complex numbers. This course is only available for transfer credit.
Prereq: 1148 (148), or permission of department. Not open to students with credit for 150 or above.

1148 College Algebra
Spring
4
Functions: polynomial, rational, radical, exponential, and logarithmic. Introduction to right-angle trigonometry. Applications.
Prereq: A grade of C- or above in 1075, or credit for 104 or 148, or Math Placement Level N, or ACT math subscore of 22 or higher that is less than 2 years old, or permission of department. Not open to students with credit for 1144, or for Math courses numbered 1150 (150) or above. This course is available for EM credit. GE quant reason math and logical anly course.

1149 Trigonometry
Spring
3
Trigonometric functions and their properties. Vectors, polar coordinates and complex numbers.
Prereq: A grade of C- or above in 1146, or permission of department. Not open to students with credit for 1144, or for any Math course numbered 150 (150) or above. This course is available for EM credit. GE quant reason math and logical anly course.

1150 Precalculus
Spring
5
Functions: polynomial, rational, radical, exponential, logarithmic, trigonometric, and inverse trigonometric. Applications.
Prereq: Math Placement Level M. Not open to students with credit for 1144, 1148, or for 1149 or above, or for any quarter Math course numbered 150 (150) or above. This course is available for EM credit. GE quant reason math and logical anly course.

1151 Calculus I
Spring
5
Differential and integral calculus of one real variable.
Prereq: A grade of C- or above in 1148 and 1149, or in 1144, 1150, or 150, or Math Placement Level L. Not open to students with credit for 1152 or 152.xx, or above. This course is available for EM credit. GE quant reason math and logical anly course.

1152 Calculus II
Spring
5
Integral calculus, sequences and series, parametric curves, polar coordinates, (optional: vectors).
Prereq: A grade of C- or above in 1114 (114), 1151, 1156, 1161.xx, 152.xx, 161.xx, or 161.01H. Not open to students with credit for 1172, 1181H or any Math class numbered 1500 or above, or with credit for 153.xx, or Math courses numbered 162.xx or above. This course is available for EM credit. GE quant reason math and logical anly course.

1154 Calculus I for Engineering Technology
Fall
4
Calculus I for Engineering Technology is the first in a two-course calculus sequence specifically designed for Engineering Technology. It covers standard Calculus topics including limits, differentiation, integration, optimization, and approximation with an emphasis on building mathematical intuition, problem solving ability and using appropriate technology to find solutions.
Prereq: A grade of C- or above in 1148 and 1149, or grade of C- or above in 1144 or 1150, or Math Placement Level L. Not open to students with credit for 2153 or above.

1155 Calculus II for Engineering Technology
Fall
4
Calculus II for Engineering Technology is the second in a two-course calculus sequence specifically for Engineering Technology. It covers standard Calculus topics including related rates, Taylor Polynomial approximations, differential equations and functions of several variables with an emphasis on building mathematical intuition, problem solving and using appropriate technology to find solutions.
Prereq: A grade of C- or above in 1148 and 1149, or grade of C- or above in 1144 or 1150, or Math Placement Level L. Not open to students with credit for 2153 or above.

1156 Calculus for the Biological Sciences
Fall
5
Differential and mathematical modeling in the life sciences.
Prereq: A grade of C- or above in 1148 and 1149, or a grade of C- or above in 1150, or credit for 150, or Math Placement Level L. Not open to students with credit for 1151 (151.xx) or above. GE quant reason math and logical anly course.

1161.01 Accelerated Calculus I
Fall
5
Differential and integral calculus of one real variable. Intended for students having prior experience with calculus.
Prereq: Math Placement Level L, and previous calculus experience. Not open to students with credit for any Math course numbered 1152 or above, or for the quarter-system Math courses 151.xx and 152.xx, or for any quarter-system course numbered 162 or above. GE quant reason math and logical anly course.

1161.02 Accelerated Calculus I for Honors Engineers
Fall
5
Differential and integral calculus of one real variable. Intended for students in Fundamentals of Engineering for Honors (FEH).
Prereq: Math Placement Level L, and previous calculus experience. Not open to students with credit for 1152, or 151.xx and 152.xx, or 162 or above. GE quant reason math and logical anly course.

1165 Math for Middle School Teachers I
Spring
5
Algebra and reasoning for middle school teachers.
Prereq: A grade of C- or above in 1148 and 1149, or in 1150, or credit for 150, or Math Placement Level L, and major or pre-major in Middle Childhood Education, within either ASC or EHE.

1166 Math for Middle School Teachers II
Spring
5
Geometry for middle school teachers.
Prereq: A grade of C- or above in 1165, and major or pre-major in Middle Childhood Education either within ASC or within EHE.

1172 Engineering Mathematics A
Fall
5
Techniques of integration, Taylor series, differential calculus of several variables. Applications. Prereq: A grade of C- or above in 1114 (114), 1151, 1156, 1161.xx, 152.xx, 161.xx, or 161.01H. Not open to students with credit for 1152, 1534 (153.xx), or 1544 (154), or for any Math class numbered 1172 or above, or for any quarter-system Math class numbered 254.xx.
Not open to students majoring in Math, pre-Actuarial Science, or Actuarial Science. This course is available for EM credit.

1181H Honors Calculus I
Fall
5
Single variable calculus treated in depth.
Prereq: 1151 or 151.xx, and permission of department. GE quant reason math and logical anly course.

1187H Honors Problem Solving
Fall
1 - 2
Problem solving beyond what is encountered in standard programs.
Prereq: Permission of department. Repeatable to a maximum of 8 cr hrs or 4 completions. This course is graded S/U.

1193 Individual Studies in Mathematics
Fall
1 - 3
Individual studies.
Prereq: Permission of department. Repeatable to a maximum of 6 cr hrs or 2 completions. This course is graded S/U.

1194 Group Studies in Mathematics
Fall
1 - 3
Designed to give groups of undergraduates an opportunity to pursue special studies not otherwise offered.
Prereq: Permission of department. Repeatable to a maximum of 6 cr hrs or 2 completions.

1194H Honors Group Studies in Mathematics
Fall
1 - 3
Designed to give groups of honors undergraduate students an opportunity to pursue special studies not otherwise offered.
Prereq: Permission of department. Repeatable to a maximum of 6 cr hrs or 2 completions.

1295 Introductory Seminar
Fall
1
Seminar on mathematical topics for beginning math majors.
Prereq: Enrollment in Math major, or permission of department. This course is graded S/U.

1534 Transition Calculus II
Fall
3
Indeterminate forms, improper integrals, infinite series, parametric curves, vectors and vector functions. This course is used only for transfer credit.
Prereq: A grade of C- or above in 152.xx, 161.xx, or 161.01H. GE quant reason math and logical anly course.

1544 Transition Engineering Calculus
Fall
3
Integral calculus, Taylor series, differential calculus of several variables. Applications. Intended for students majoring in Engineering. This course is used only for transfer credit.
Prereq: A grade of C- or above in 152.xx, or equiv.

2010S Intersections of Mathematics and Society: Hidden Figures
Fall
3
This course examines the intersections of race, gender, and mathematics as it relates to the accomplishments of the African-American mathematicians featured in the book. We analyze how mathematics and the advancement of American society were intertwined from WWI to the Space Race and focus on understanding the mathematical tools used by human computers and scientists at Langley during this time.
Prereq: A grade of C- or above in 1148 and 1149, or a grade of C- or above in 1150; or Math Placement Level L. GE cultures and ideas and diversity soc div in the US and service learning course.

2137 Algebra and Coordinate Geometry for Teachers
Fall
3
This is one of two independent courses which follow Math 1136 to provide necessary content for middle grade teachers. This course focuses on algebra, coordinate geometry, and their connections through equations in one or more unknowns. Modern and historical perspectives are woven throughout.
Prereq: A grade of C- or above in 1136; and a grade of C- or above in 1149 or 1150, or credit for 150, or math placement level L.

2138 Calculus and its History for Teachers
Fall
3
This is one of two independent courses which follow Math 1136 to provide necessary content for middle grade teachers. This course focuses on functions and calculus, including modern and historical perspectives.
Prereq: A grade of C- or above in 1136; and a grade of C- or above in 1149 or 1150, or credit for 150, or math placement level L.
Multivariable differential and integral calculus. Prereq: A grade of C- or above in 1152, 1172, 1534, 1544, 1181H, or 4181H, or credit for 153.xx, 154, 162.xx, or 162.01H. Not open to students with credit for any course 2153 or above, or for any quarter-system class 254.xx or above. This course is available for EM credit.

Vectors, multivariable calculus, integral theorems. Prereq: A grade of C- or above in 1161.xx, 1181H, or 4181H. Not open to students with credit for semester Math course above 2162.01, or for any quarter Math course numbered 254.xx or above.

Accelerated multivariable calculus. Intended for students in Fundamentals of Engineering for Honors (FEH). Prereq: A grade of C- or above in 1161.xx, 1181H, or 4181H. Not open to students with credit for 2153, or for a semester Math course numbered 2162 or above, or for a quarter Math course numbered 263.xxx or above.

Calculus for Middle School Teachers

Concepts of Calculus for Middle School teachers. Prereq: A grade of C- or above in 1165, or credit for 1164 (110); and enrollment in Middle Childhood Education major or pre-major, within ASC or EHE. Not open to students with credit for 111.

History of Mathematics for Middle School Teachers

Historical and mathematical discussion of topics in the middle school math curriculum. Prereq: A grade of C- or above in 2167, or credit for 111; and enrollment as a major or pre-major in Middle Childhood Education (within either ASC or EHE). Not open to students with credit for 212.

Engineering Mathematics B

Multiple integrals, line integrals, vector fields, second order ordinary differential equations. Prereq: 1172 or 1544 (154). Not open to students with credit for 2153, or for any Math course 2173 or above, or for any quarter-system Math course 254.xx or above.

Linear Algebra and Differential Equations for Engineers

Matrix theory, eigenvectors and eigenvalues, ordinary and partial differential equations. Prereq: 2173, and enrollment in Engineering, Physics, or Chemistry major; or permission of Math department. Not open to students with credit for both 2415 (415.xx) and 2568 (568 or 571), or with credit for 5520H (520H and 521H).

Mathematical Topics for Engineers

Multiple integrals, line integrals, matrix algebra; ordinary and partial differential equations. Prereq: 1172, 1544 (154), 2153, 2162.xx, 2182H, 2418H, 254.xx, 263.xxx, 263.01H, or 264H; and a major or minor in Biochem, BiomedE, Chem, CEENG, FABEng, MatScEn, CBE, Physics or WeldEng. Not open to students with credit for 2174 or 5520H, or with credit for both 2415 (415), 2255 (255), or 4512 (512) and (i) 2668 (568 or 571).

Honors Calculus II

Multivariable calculus treated in depth. Prereq: A grade of C- or above in 1181H or 4181H. Not open to students with credit for both 162.01H and 263.01H.

Individual Studies in Mathematics

Individual studies. Prereq: Permission of department. Repeatable to a maximum of 6 cr hrs or 2 completions. This course is graded S/U.

Group Studies in Mathematics

Designed to give groups of able undergraduate students an opportunity to pursue special studies not otherwise offered. Prereq: Permission of department. Repeatable to a maximum of 6 or hrs or 2 completions. This course is graded S/U.

Differential Equations and Their Applications

Ordinary differential equations, their series solutions, numerical methods, Laplace transforms, physical applications. Prereq: A grade of C- or above in 2153, 2162.xx, 2173, 2182H, or 4182H, or credit for 254.xx, 263.xxx, 263.01H, or 264H. Not open to students with credit for 2415, 5520H, 255, 415.xx, or 521H.

Introduction to Discrete Mathematics

Mathematical reasoning, logic, sets, functions, recursive definitions, elementary counting principles. Prereq: C- or better in 1131, 1151, 1161.xx, or 1181H; or credit for 132, 152.xx, 161.xx, 161.01H; or permission of department. Open only to majors in MIS (Management Information Systems). Not open to students with credit for 366.

Ordinary and Partial Differential Equations

Ordinary and partial differential equations: Fourier series, boundary and initial value problems. Prereq: 2153, 2162.xx, 2173, 2182H, 4182H, 254.xx, 263.xxx, 263.01H, or 264H; or 2688 and either 1172 or 1544 (154). Not open to students with credit for 2255 (255), 5520H (521H), 2174, or 415.xx.

Linear Algebra

Matrix algebra, vector spaces and linear maps, bases and dimension, eigenvalues and eigenvectors, applications. Prereq: A grade of C- or above in 1152, 1544, 2153, 2162.xx, 2182H, or 4182H; or a grade of C- or above in both 1152 and CSE 2321. Not open to students with credit for 4568 or 5520H.

Honors Linear Algebra

This course, an introduction to linear algebra, is aimed at math majors who want a rigorous background in finite-dimensional linear algebra and exposure to applications of modern relevance, including some practice in implementing ideas from this course on a computer. Prereq: A grade of C- or above in 2153, 2162.xx, 2182H, or 4182H; and permission of department. Not open to students with credit for 2568, 4568, or 5520H.

Senior Seminar

Seminar on mathematical topics and career possibilities for senior math majors and actuarial science majors. Prereq: Enrollment in Math or Actuarial Science major, and permission of department. This course is graded S/U.

Foundations of Higher Mathematics

Introduction to logic, proof techniques, set theory, number theory, real numbers. Prereq: Major or minor in Math, CSE, CIS, ECE, IMME, STAT, STEMED-PRE or STEMED-BS, and: If Math, IMME, STAT, STEMED-PRE or STEMED-BS; Prereq: A grade of C- or above in 2153, 2162.xx, 2173, or 2182H. If CSE, CIS or ECE: Prereq: A grade of C- or above in CSE 2321; and a grade of C- or above in 1161xx, 1172, 1181H, 1534, 1544, 1152, or 4181H.

Honors Foundations of Higher Mathematics

A systematic introduction to problem solving and proof-writing through interesting, non-trivial mathematics. This class serves as a bridge between a problem-oriented Calculus class and the more conceptual classes in the math major. Additionally, this class exposes students to some of math's greatest intellectual successes. Prereq: A grade of C- or above in 2153, 2162.xx, 2173, or 2182H; and permission of department. Not open to students with credit for 3345.

Introduction to Mathematical Biology

Introduction to quantitative and qualitative analysis of several mathematical models for biological systems. Prereq: C- or better in Math 2255, 2415, 5520H; or credit for 255, 415.xx, or 521H; or permission of department with credit for 390.

Practicum in Actuarial Science

Presentations by practicing actuaries on topics drawn from their fields of expertise; oral presentations by students on selected topics in actuarial science. Prereq: Completion of second writing course. Jr standing. Open only to actuarial science majors. Not open to students with credit for 588.

Introduction to Financial Mathematics

Introduction to mathematics used in financial asset pricing, based on the binomial asset pricing model. Prepares students for further study of stochastic calculus in continuous time. Prereq: C- or better in 3345 or credit for 345, and either C- or better in 4530, 5530H, or Stat 4201; or credit for 530, 531H, or Stat 420; or permission of department. Not open to students with credit for 589.

Beginning Scientific Computing

Introduction to mathematical theory of algorithms used to solve problems that typically arise in sciences, engineering, and finance. Prereq: Both a C- or better in 2255, 2415, or 5520H, or credit for 255, 415.xx, or 521H; and also a C- or better in 2688 or 5520H, or credit for 568, 571, or 529H.

Theory of Interest

Financial transactions involving interest: measurement of interest, force of interest, annuities-certain, introduction to financial derivatives. Prereq: A grade of C- or above in 1152, 1172, 1181H, 1534, 1544, 2153.xx, 2153, or 4181H, or credit for 153, 154, 162, 162H, or 191H; and enrollment in Math major, or Actuarial Science major or pre-major. Not open to students with credit for 618.

Honors Analysis I

An enriched honors sequence introducing students to mathematical underpinnings of calculus. Prereq: Permission of department.

Honors Analysis II

An enriched honors sequence introducing students to mathematical underpinnings of calculus. Prereq: A grade of B- or above in 4181H, or permission of department. Not open to students with credit for 264H.

Individual Studies in Mathematics

Individual studies. Prereq: Permission of department. Repeatable to a maximum of 6 cr hrs or 2 completions. This course is graded S/U.
4194 Group Studies in Mathematics U 1 - 3
Designed to give groups of able undergraduate students an opportunity to pursue special studies not otherwise offered.
Prereq: Permission of department. Repeatable to a maximum of 6 or hrs or 2 completions.

4350 Quantitative Neuroscience U 3
Introduction to mathematical modeling and computational analysis of neural systems, Hodgkin-Huxley model, dynamical systems methods, neuronal networks, models for neurological disease.
Prereq: 1152 (152) or 1157, or permission of instructor.

4407 Geometry for Teaching U 2
Algebra connections between school mathematics and undergraduate mathematics, focusing on the algebra in the Common Core State Standards for Mathematics.
Prereq: Enrollment in the M.Ed. program for secondary mathematics. Prereq or concur: 4507; or permission of instructor.

4420 Capstone Course for Integrated Major in Mathematics U 3 and English
Students combine the Mathematics and English knowledge and skills they have acquired in the integrated major through a capstone experience.
Prereq: Sr standing in Integrated Major in Mathematics and English (IMME) Program, or permission of instructor. Not open to students with credit for English 4420. Cross-listed in English.

4480 Algebra for Teaching U 2
Algebra connections between school mathematics and undergraduate mathematics, focusing on the algebra in the Common Core State Standards for Mathematics.
Prereq: Enrollment in the M.Ed. program for secondary mathematics. Prereq or concur: 4580; or permission of instructor.

4504 History of Mathematics U 3
Development of mathematics from primitive origins to present forms. Topics include development of arithmetic, algebra, geometry, trigonometry, and calculus.
Prereq: A grade of C- or above in 2568, 4507, or 5520H, or credit for 568, 571, 507, 580, or 520H, and enrollment in Math major or Grad standing in EduTL; or permission of department. Not open to students with credit for 504.

4507 Geometry U 3
Topics in Euclidean, spherical, and hyperbolic geometries.
Prereq: A grade of C- or above in 3345, and in 2568 or 5520H; or credit for 345, and credit for 568, 571, or 520H. Not open to students with credit for 507.

4512 Partial Differential Equations for Science and Engineering U 3
Second order ordinary differential equations via Laplace transforms and series solutions; Fourier series; three archetypical partial differential equations; boundary value problems; Sturm-Liouville theory. Intended for Engineering students.
Prereq: A grade of C- or above in 2153, 2162.xx, 2173, 2182H, or 4182H, or credit for 254.xx, 263.xx, 263.01H, or 264H. Not open to students with credit for 4557 (557) or 512.

4530 Probability U 3
Combinatorial probability, random variables, independence, expectation, variance.
Prereq: A grade of C- or above in 2153, 2162.xx, 2173, 2177, 2182H, or 4182H, or credit for 254.xx, 263.xx, 263.01H, or 264H. Not open to students with credit for 5530H (531H), 530, or Stat 4201 (420).

4545 Analysis Overview U 4
Topics in calculus and analysis.
Prereq: A grade or C- or above in 2153, 2162.xx, 2173, 2182H, or 4182H, or credit for 254, 263.xx, 263.01H, 264H, or equiv; and a grade of C- or above in 2568 or 5520H, or equiv; and Grad standing in Statistics or Biostatistics; and permission of department (Statistics or Biostatistics).

4547 Introductory Analysis I U 3
4547 - 4548 involves advanced calculus: sequences, limits, continuity, differentiation, Riemann integral, sequences and series of functions, Taylor series, improper integrals.
Prereq: C- or better in 3345; or credit for 345. Not open to students with credit for 548.

4548 Introductory Analysis II U 3
Continuation of Math 4547. Advanced calculus: sequences, limits, continuity, differentiation, Riemann integral, sequences and series of functions, Taylor series, improper integrals.
Prereq: C- or better in 4547, or credit for 548. Not open to students with credit for 549.

4551 Vector Algebra U 3
Vector operations; Jacobian and change of variables; divergence, gradient, and curl; Green’s, Stokes’, and divergence theorems; applications.
Prereq: C- or better in 2533, 2563.xx, 2173, or 2182H, or credit for 254.xx, 263.xx, 263.01H, or 264H. Not open to students with credit for 5522H (522H), 514, or 552.

4552 Complex Analysis U 3
Introduction to analytic functions of a complex variable, integral theorems, power series, residues, conformal mapping.
Prereq: A grade of C- or above in 2153, 2162.xx, 2173, 2182H, or 4182H, or credit for 254.xx, 263.xx, 263.01H, or 264H. Not open to students with credit for 5522H (522H), 514, or 552.
306 Mathematics

5001 Introduction to Set Theory U G 3
Axioms of set theory, transfinite induction and recursion, cardinal numbers, cardinal arithmetic, ordinal numbers, ordinal arithmetic. Axiom of Choice, equivalent principles, closed unbounded and stationary sets, infinitary combinatorics.
Prereq: 4547 (547), 4580 (580), Grad standing or permission of department. Not open to students with credit for 647

5051 Introduction to Mathematical Logic U G 3
Syntax and semantics of sentential logic, syntax and semantics of first-order logic, compactness of first-order logic, Gödel's completeness theorem, theories and models of theories, Gödel's incompleteness theorems; computability.
Prereq: 4547 (547), 4580 (580), Grad standing, or permission of department. Not open to students with credit for 648 or 649.

5101 Linear Mathematics in Finite Dimensions U G 3
Vector spaces; linear transformations; inner product spaces; eigenvalues and eigenvectors; Hermitian, unitary and normal matrices; quadratic forms; constraints; Rayleigh quotients; singular value decomposition; pseudo-inverse.
Prereq: 2568 (568), 571, or Grad standing. Not open to students with credit for 601.

5102 Linear Mathematics in Infinite Dimensions U G 3
Prereq: 5101 (602). Not open to students with credit for 603.02.

5111 Algebra I U G 5
Groups and homomorphisms, group actions and Sylow's theorems, direct and semidirect products, rings and homomorphisms, factorizations in rings, polynomial rings.
Prereq: Grad standing, or permission of department. Not open to students with credit for 670.

5112 Algebra II U G 5
Modules and vector spaces, modules over a principal ideal domain, applications to linear algebra, field theory, Galois theory.
Prereq: 5111 (671) or 591H. Not open to students with credit for 672.

5152 Introduction to Number Theory with Applications U G 3
Divisibility, fundamental theorem of arithmetic, Fermat's theorem, congruences, Euler's formula, prime numbers, Euler's phi-function, counting primes, powers and roots mod m, quadratic reciprocity theorem, Diophantine approximation, Pell's theorem.
Prereq: Both 5101 (602) and 4581 (582); or Grad standing. Not open to students with credit for 683.

5168 Introduction to the Finite Element Method U G 3
Basic concepts, formulation, and application of finite element techniques for numerical solution of problems of engineering and scientific interest.
Prereq: 2568 (568) or Cive 2060 (406), and CSE 1221. Not open to students with credit for both Cive 766 and Cive 768. Cross-listed in MechEng 768a. Cross-listed in MechEng 768a.

5194 Group Studies in Mathematics U G 1 - 9
Designed to give groups of advanced undergraduate and beginning graduate students an opportunity to pursue special studies not otherwise offered. Permission of department. Repeatable.

5194H Honors Group Studies in Mathematics U G 1 - 3
Gives groups of honors undergraduate students an opportunity to pursue special studies not otherwise offered. Permission of department. Repeatable to a maximum of 6 or 12 or 6 or 2 completions.

5201 Introduction to Real Analysis I U G 5
Basic metric topology, sequences and series, continuous functions, differentiable functions of one variable, Riemann integration, uniform convergence, Fourier series.
Prereq: Grad standing, or permission of department. Not open to students with credit for 651.

5202 Introduction to Real Analysis II U G 5
Continuation of Fourier series, differentiable functions of several variables, implicit function theorem and inverse function theorem, introduction to Lebesgue measure and Lebesgue integration, introduction to Hilbert spaces.
Prereq: 5201 (652). Not open to students with credit for 653.

5221 Introduction to Complex Analysis U G 3
Calculus of functions of a complex variable, series expansion and singularities of complex analytic functions, Cauchy's integral theorem, maximum principle, harmonic functions, differentials and residue theory, Weierstrass theorem.
Prereq: 4547 (547). Not open to students with credit for 5251 (654).

5401 Applied Differential Equations I U G 3
Existence and uniqueness, linear ODE systems, 2x2, phase plane analysis, conservative and reversible systems, bifurcation analysis, limit cycles, perturbation theory.
Prereq: 2255 (251) and 2568 (568) or 572. Not open to students with credit for 615.

5402 Applied Differential Equations II U G 3
Steady state, heat equation, wave equation, PDEs in two dimensions, the Dirichlet problem, nonlinear evolution equations, wave equations by method of characteristic curve.
Prereq: 5401 (616). Not open to students with credit for 617.

5421 Mathematics of Infectious Disease Dynamics U G 3
Provides an introduction to mathematical modeling of infectious diseases, including techniques for building and analyzing disease models, and discussions of calibration and comparison of models with data. This course is intended for graduate students in public health or other related disciplines and for upper level undergraduate and graduate mathematics students.
Prereq: 1152, 1172, or 153; or permission of instructor. Cross-listed in PubHEpi.

5451 Calculus of Variations and Tensor Calculus U G 3
Euler-Lagrange equations, Hamilton's Principle, Lagrangian mechanics, Hamiltonian dynamics, Hamilton-Jacobi integration theory of dynamical systems, direct methods, tensor calculus, curvature and geometry of continuum mechanics.
Prereq: 2415.xx (415) and 2568 (568) or 572. Not open to students with credit for 701.

5520H Honors Linear Algebra and Differential Equations U G 5
Linear transformations and matrices, spectral theorem, ordinary differential equations, existence and uniqueness theorems, phase space, stability, oscillations.
Prereq: A grade of C or above in 4182H, or in both 2182H and 3345; or credit for 264H, or in both 263H and 345; or permission of department. Not open to students with credit for 520H and 521H.

5522H Honors Complex Analysis U G 5
Theoretical treatment of complex analysis.
Prereq: A grade of C or above in 520H, or credit for 521H, or permission of department. Not open to students with credit for 4552, 522H, 514, or 552.

5522H Honors Combinatorics U G 5
Combinatorial mathematics and its connections with geometry, algebra, analysis, and probability.
Prereq: A grade of C or above in 4182H, or in both 2182H and 3345; or credit for 264H, or in both 263H and 345; or permission of department. Not open to students with credit for 541H taken in Au10.

5530H Honors Probability U G 5
Theoretical treatment of probability, with applications within and outside mathematics.
Prereq: A grade of C or above in 552H, or permission of department. Not open to students with credit for 531H or 594H in Au06 or Au07.

5540H Honors Differential Geometry U G 5
Geometry of curves and surfaces in 3-dimensional space, curvature, geodesics, Gauss-Bonnet Theorem, Riemannian metrics.
Prereq: A grade of C or above in 5520H, or in both 2182H and 2568; or credit for 520H, or in both 263H and 568; or permission of department. Not open to students with credit for 541H.

5576H Honors Number Theory U G 5
Elementary algebraic and algebraic number theory, tracing its unifying role in the development of mathematics through history.
*Au Sem (odd years). Prereq: A grade of C or above in 4182H, or in both 2182H and 3345; or credit for 264H, or in both 263H and 345; or permission of department. Not open to students with credit for 577H.

5590H Honors Abstract Algebra I U G 5
5590H-5591H includes elementary number theory, group theory, ring theory, abstract linear algebra, field theory, and Galois theory.
Prereq: A grade of C or above in 5520H or in 520H, or permission of department. Not open to students with credit for 591H.

5591H Honors Abstract Algebra II U G 5
Continuation of 5590H: elementary number theory, group theory, ring theory, abstract linear algebra, field theory, and Galois theory.
Prereq: A grade of C or above in 5520H or in 591H, or permission of department. Not open to students with credit for 592H.

5601 Essentials of Numerical Methods U G 3
Systems of linear equations, linear least squares, eigenvalue problems, nonlinear equations and optimization, interpolation, numerical integration and differentiation, numerical solution for ODEs, IVPs and BVPs.
Prereq: 4556 (556) and either 2568 (568) or 572. Not open to students with credit for 607.

5602 Computational Partial Differential Equations U G 3
Parabolic PDEs: method of lines, stability and convergence; hyperbolic PDEs: shock capturing, flux limiters; elliptic PDEs: direct solvers and iterative methods.
Prereq: Under semesters 5601 and either 4512 or 4557. Under quarters either 512 or 557; and 556; and either 568 or 572. Not open to students with credit for 606.

5603 Numerical Linear Algebra U G 3
Fundamentals of numerical linear algebra; solving square systems; QR factorization and least squares; calculation of eigenvalues, iterative methods for linear systems; iterative methods for eigenvalue problems.
Prereq: Under semesters 2568 and one of 3607, 5601 or 5602. Under quarters either 568 or 571 and either 606 or 607.

5630 Life Contingencies I U G 3
Introduction to the mathematical theory of contingencies. Includes material from examinations by the Society of Actuaries and the Casualty Actuarial Society.
Prereq: A grade of C- or above in 3618; and a grade of C- or above in 4530, 5530H, or Stat 4201; and enrolment in Actuarial Science major or the MMS program in Financial Math; or permission of department.
Continuation of 5630: Mathematical Theory of Contingencies. Includes material from examinations by the Society of Actuaries and the Casualty Actuarial Society. Prerequisite: A grade of C- or above in 5630 (631). Open only to Actuarial Science majors and to MMS students specializing in Financial Math.

Introduction to the evaluation of options, futures, and other derivatives, interest models and risk management techniques. Includes material from examinations by the Society of Actuaries and the Casualty Actuarial Society. Prerequisite: A grade of C- or above in 3618, and a grade of C- or above in 4530, 5530H, or Stat 4201; and enrollment in Math major or Actuarial Science major or Actuarial Science Pre-major, or Grad standing; or permission of department.

Introduction to the construction and evaluation of actuarial models, with topics covered by examinations of the Society of Actuaries and the Casualty Actuarial Society. Prerequisite: A C- or above in Act 4202; and a C- or above in 4530, 5530H, or Stat 4201. Open only to actuarial science majors, and to MMS students specializing in Financial Math.

Continuation of 5632: introduction to the construction and evaluation of actuarial models, with topics covered by examinations of the Society of Actuaries and the Casualty Actuarial Society. Prerequisite: C- or better in 5633. Open only to actuarial science majors, and to MMS students specializing in Financial Math.

Enzyme dynamics, predator-prey and competition model, spread of diseases, plant growth, cell cycle and cell differentiation, reaction-diffusion with advection, cancer models and cancer therapy, wound healing. Prerequisite: Grad standing; or either 4512 (512) or 557, and 4556 (556), and either 2568 (568) or 572. Not open to students with credit for 665.

Overview of molecular and cellular biology of single cells, tissues, organisms and their interactions, including genetics and biochemistry of single cells. Prerequisite: Bio 1101 (101) or permission of instructor. Not open to students with credit for any one of MolGen 6660 (660), 4500 (500), 4606 (606), 605, or 661. Cross-listed in MolGen 5660.

Parametrized curves, curvature of curves; Frenet frames, curves with prescribed curvatures, curves on hypersurfaces; principal, Gaussian, and mean curvatures; surfaces in R^3, triangulation and classification of surfaces, Gauss-Bonnet theorem. Prerequisite: Grad standing or 2515.01 (254) and either 2568 (568) or 572. Not open to students with credit for 642.

Special relativity as moving frames; tensors, exterior algebra and exterior calculus; differentiable manifolds and space time structures; parallel transport, torsion and curvatures, metric compatibility; structure equations of differential geometry. Prerequisite: 2515.01 (254) and one of 2568 (568) or 5101 (501) or 572. Not open to students with credit for 665.

Gravitation via geometry; stress energy tensor; fluid dynamics; energy momentum conservation; Einstein’s field equations, geodesic world lines via Hamilton-Jacobi theory; Schwarzchild spacetime; gauge invariant perturbation theory. Prerequisite: 5756 (665). Not open to students with credit for 666.

Topological spaces; continuous maps and metric spaces; connectedness, compactness, countability axioms; metrization, compactification, and convergence; combinatorial, geometric, and algebraic techniques in knot theory; invariants of knots. Prerequisite: Grad standing; or 4547 (547) and either 2568 (568) or 572. Not open to students with credit for 640.

Logical calculi; cut elimination and Herbrand’s theorem; ordinal analysis; ordinal analysis of theories of sets; constructive and intuitionistic logics; realizability; proof mining. Prerequisite: 5051 (649), or permission of department. Not open to students with credit for 747.

Construction of models, compactness, Lowenheim-Skolem theorems, union of elementary chains, omitting types; categoricity; saturation; model completeness; quantifier elimination; ultraproducts; definability. Prerequisite: 5051 (649) or permission of department. Not open to students with credit for 747.

Axioms of set theory; ordinal and cardinal numbers; transitive models of ZFC; the constructible universe L and HOD; forcing; large cardinals; descriptive set theory. Prerequisite: 5051 (649) or permission of department. Not open to students with credit for 747.
308 Mathematics

6501 Enumerative Combinatorics and Graph Theory I
G 3
Enumerative combinatorics: factorials, binomials and multinomials; Stirling approximation, recursion and generating functions; Catalan numbers. Graph theory: Kuratowski’s theorem, graph coloring, Ramsey theory, matrix-tree theorem, expander graphs.
Prereq: Grad standing in Math; or 4581 and 2568; or permission of instructor.

6502 Combinatorics and Graph Theory II
G 3
Prereq: 6501 or permission of instructor.

6601 Numerical Methods in Scientific Computing I
G 4
Numerical linear algebra: matrix operations, direct and iterative methods for systems of linear equations, eigenvalue problems; least-squares problems; eigenvalues and eigenvectors; Krylov subspaces.
Prereq: 5603, and permission of the Graduate School; or Grad standing.

6602 Numerical Methods in Scientific Computing II
G 4
Approximation theory: interpolation, projection, integration; initial value problems: one- and multi-step methods; Runge-Kutta methods; stability analysis; PDEs; advection equation, diffusion equation, stability analysis.
Prereq: 6601.

6701 Differentiable Manifolds
G 3
Differentiable manifolds; vector bundles, existence theorem for ODE, flows, sprays, vector fields, Lie and exterior derivatives; Poincare Lemma, Darboux’s Theorem; Frobenius’s Theorem, Lie groups; de Rham cohomology.
Prereq: Grad standing or all of 5201 (652), and either 2568 (568) or 572, and 2153.01 (254).
Not open to students with credit for 776.

6702 Differential Geometry
G 3
Riemannian manifolds, distance, volume; covariant derivatives, Levi-Civita connection; geodesics, curvatures: sectional, Ricci, scalar; Jacobi fields; conjugate points; Rauch comparison, Hopf-Rinow, Hadamard, Preissmann’s and Berger’s Sphere Theorems.
Prereq: 6701 (765). Not open to students with credit for 776.

6801 Algebraic Topology I
G 3
Algebraic topological methods, simplicial and CW-complexes, homotopy and homology; singular and simplicial homology, chain maps, homotopy invariance, functoriality.
Prereq: Grad standing or both 6801 (540) and 5111 (670).
Not open to students with credit for 776.

6802 Algebraic Topology II
G 3
Homology of pairs, excision, axioms; Mayer-Vietoris, cellular homology; cohomology groups, Ext and Tor functors, universal coefficients; Kunneth Theorem; Orientation on manifolds; fundamental class; Poincare, Alexander, and Lefschetz duality.
Prereq: 6801 (766). Not open to students with credit for 776.

6998 Graduate Research
G 1 - 16
Graduate research, primarily for Masters and beginning PhD students participating in research projects other than their thesis work.
Prereq: Permission of department. Repeatable. This course is graded S/U.

6999 Graduate Thesis Research
G 1 - 16
Graduate research, primarily for students working on their master theses.
Prereq: Permission of department. Repeatable. This course is graded S/U.

7121.01 Algebraic Number Theory
G 3
Algebraic integers, Dedekind domains, ideal class group; Galois theory of prime ideals, Frobenius automorphisms; geometry of numbers; cyclotomic fields, class field theory over Q; quadratic fields; local fields; ideles and adeles.
Prereq: 6112. Not open to students with credit for 7121.02.

7121.02 Algebraic Number Theory
G 3
Algebraic integers, Dedekind domains, ideal class group; Galois theory of prime ideals, Frobenius automorphisms; geometry of numbers; cyclotomic fields, class field theory over Q; quadratic fields; local fields; ideles and adeles.
Prereq: Post-candidacy in Math, and permission of instructor. This course is graded S/U.

7122.01 Analytic Number Theory
G 3
Properties and examples of L-functions; primes in arithmetic progression; Riemann-Weil formula; non-vanishing theorem; analysis of L-functions on the critical line; prime number theorem; Brauer-Siegel theorem, Ikehara-Tauberian theorem.
Prereq: 7121.01 and 6222. Not open to students with credit for 7122.02.

7122.02 Analytic Number Theory
G 3
Properties and examples of L-functions; primes in arithmetic progression; Riemann-Weil formula; non-vanishing theorem; analysis of L-functions on the critical line; prime number theorem; Brauer-Siegel theorem, Ikehara-Tauberian theorem. This course section is open only to mathematics postgraduate students.
Prereq: Permission of instructor. This course is graded S/U.

7141.01 Algebraic Geometry I
G 3
Affine and quasi-projective varieties; morphisms and rational maps; nonsingular varieties; sheaves and schemes; first properties of schemes; separated and proper maps of schemes.
Prereq: 6112 and 6151. Not open to students with credit for 7141.02.

7141.02 Algebraic Geometry I
G 3
Affine and quasi-projective varieties; morphisms and rational maps; nonsingular varieties; sheaves and schemes; first properties of schemes; separated and proper maps of schemes.
Prereq: Post-candidacy in Math and permission of instructor. This course is graded S/U.

7142.01 Algebraic Geometry II
G 3
Sheaves of Modules, quasi-coherent and coherent sheaves; divisors, projective morphism; sheaf of differentials; derived functors and sheaf cohomology; coherent sheaf cohomology of schemes; Serre’s Duality, higher direct images, flat and smooth maps.
Prereq: 7141.01. Not open to students with credit for 7142.02.

7142.02 Algebraic Geometry II
G 3
Sheaves of Modules, quasi-coherent and coherent sheaves; divisors, projective morphism; sheaf of differentials; derived functors and sheaf cohomology; coherent sheaf cohomology of schemes; Serre’s Duality, higher direct images, flat and smooth maps.
Prereq: Post-candidacy in Math, and permission of instructor. This course is graded S/U.

7161.01 Lie Algebras
G 3
Nilpotent and solvable Lie algebras; structure and classification of simple Lie algebras; Levi-Malcev decomposition; root systems; Dynkin diagrams; introduction to representation of complex semi-simple Lie algebras; universal enveloping algebra.
Prereq: 6111, or instructor permission.

7161.02 Lie Algebras
G 3
Nilpotent and solvable Lie algebras; structure and classification of simple Lie algebras; Levi-Malcev decomposition; root systems; Dynkin diagrams; introduction to representation of complex semi-simple Lie algebras; universal enveloping algebra.
Prereq: Post-candidacy in Math, and permission of instructor. This course is graded S/U.

7162.01 Lie Groups and Representation Theory
G 3
Basic group theory constructions; passage between a Lie group and its Lie algebra; homogeneous spaces; maximal tori; unitary trick and complete reducibility; classification of irreducible unitary representations; Cartan-Weyl theory.
Prereq: 7161.01 and 6701. Not open to students with credit for 7162.02.

7162.02 Lie Groups and Representation Theory
G 3
Basic group theory constructions; passage between a Lie group and its Lie algebra; homogeneous spaces; maximal tori; unitary trick and complete reducibility; classification of irreducible unitary representations; Cartan-Weyl theory. This course section is open only to mathematics postgraduate students.
Prereq: Permission of instructor. This course is graded S/U.

7193 Individual Studies in Mathematics
G 1 - 9
Individual studies.
Prereq: Permission of department. Repeatable. This course is graded S/U.

7194 Group Studies in Mathematics
G 1 - 9
Designed to give groups of advanced PhD students an opportunity to pursue special studies not otherwise offered.
Prereq: Permission of department. Repeatable.

7211.01 Functional Analysis I
G 3
Linear spaces and linear maps; Hahn-Banach theorem and its applications; normed linear spaces and their duals; Hilbert spaces and applications; weak and weak* topologies; Choquet theorems; bounded linear maps.
Prereq: 6212. Not open to students with credit for 7211.02.

7211.02 Functional Analysis I
G 3
Linear spaces and linear maps; Hahn-Banach theorem and its applications; normed linear spaces and their duals; Hilbert spaces and applications; weak and weak* topologies; Choquet theorems; bounded linear maps.
Prereq: Post-candidacy in Math, and permission of instructor. This course is graded S/U.

7212.01 Functional Analysis II
G 3
Banach algebras, elementary spectral theory; Gelfand’s theory of commutative Banach algebras; examples of families of operators; spectral theory of normal, unitary, self-adjoint operators; semigroups of operators; distributions; applications.
Prereq: 7211.01. Not open to students with credit for 7212.02.

7212.02 Functional Analysis II
G 3
Banach algebras, elementary spectral theory; Gelfand’s theory of commutative Banach algebras; examples of families of operators; spectral theory of normal, unitary, self-adjoint operators; semigroups of operators; distributions; applications.
Prereq: Post-candidacy in Math, and permission of instructor. This course is graded S/U.

7221.01 Ergodic Theory I
G 3
Measure-preserving transformations; isomorphism, conjugacy, spectral isomorphism; measure preserving systems with discrete spectrum; hierarchy of mixing properties; invariant measures for continuous transformations; topological and symbolic dynamics.
Prereq: 6211. Not open to students with credit for 7221.02.

7221.02 Ergodic Theory I
G 3
Measure preserving transformations; isomorphism, conjugacy, spectral isomorphism; measure preserving systems with discrete spectrum; hierarchy of mixing properties; invariant measures for continuous transformations; topological and symbolic dynamics.
Prereq: Post-candidacy in Math, and permission of instructor. This course is graded S/U.
7722.01 Ergodic Theory II
G 3
Entropy; topological entropy; flows on homogeneous spaces; structure theory of measure preserving systems; applications to combinatorics and number theory. Prereq: 7721.01. Not open to students with credit for 7722.02.
7722.02 Ergodic Theory II
G 3
Entropy; topological entropy; flows on homogeneous spaces; structure theory of measure preserving systems; applications to combinatorics and number theory. This course section is open only to mathematics postgraduate students.
Prereq: Permission of instructor. This course is graded S/U.
7412.01 Ordinary Differential Equations II
G 3
Topological equivalence of nonlinear systems; normal forms of Poincare-Dulac-Birkhoff; classification of vector fields near critical points; local bifurcation theory; topological dynamics; limit sets; flows on the torus.
Prereq: 6451. Not open to students with credit for 7412.02.
7412.02 Ordinary Differential Equations II
G 3
Topological equivalence of nonlinear systems; normal forms of Poincare-Dulac-Birkhoff; classification of vector fields near critical points; local bifurcation theory; topological dynamics; limit sets; flows on the torus.
Prereq: Post-candidacy standing in Math, and permission of instructor. This course is graded S/U.
7413 Ordinary Differential Equations III
G 3
Structural stability; singularity theory of Thom and Arnold; versal deformations; global deformations at separaticle cycle; Anosov diffeomorphisms; Anosov A; symbolic dynamics.
Prereq: 7412 (821). Not open to students with credit for 822.
7452.01 Partial Differential Equations II
G 3
Sobolev spaces, Sobolev inequalities and embedding theorems; Lax-Milgram theorem; Fredholm alternatives, weak compactness; linear elliptic equations: existence, regularity, maximum principles; hyperbolic equations; first order hyperbolic systems.
Prereq: 6451 and 6212. Not open to students with credit for 7452.02.
7452.02 Partial Differential Equations II
G 3
Sobolev spaces, Sobolev inequalities and embedding theorems; Lax-Milgram theorem; Fredholm alternatives, weak compactness; linear elliptic equations: existence, regularity, maximum principles; hyperbolic equations; first order hyperbolic systems.
Prereq: Post-candidacy in Math, and permission of instructor. This course is graded S/U.
7453.01 Partial Differential Equations III
G 3
Hamack inequalities, De Giorgi-Nash-Moser theory; calculus of variations; monotonicity and sub-super solution methods, Pohozaev identity; hyperbolic conservation laws; quasilinear elliptic and parabolic equations; Schauder theory; strong solutions.
Prereq: 7452.01. Not open to students with credit for 7453.02.
7453.02 Partial Differential Equations III
G 3
Hamack inequalities, De Giorgi-Nash-Moser theory; calculus of variations; monotonicity and sub-super solution methods, Pohozaev identity; hyperbolic conservation laws; quasilinear elliptic and parabolic equations; Schauder theory; strong solutions.
Prereq: Post-candidacy in Math, and permission of instructor. This course is graded S/U.
7611 Computational Partial Differential Equations I
G 3
Numerical methods for boundary value problems (BVP); extension to separable elliptic PDEs, fast solvers; irregular domains, variable coefficients; iterative methods; diffusion equations; error analysis; variable coefficients in nonlinear problems.
Prereq: 6602 (709). Not open to students with credit for 807.
7612 Computational Partial Differential Equations II
G 3
Linear hyperbolic equations, finite difference methods; quasi-linear and non-linear equations with shock formation, Lax-Wendroff theorem; flux-limiters, WENO methods; multi-dimensional problems; transport equations; adaptive grids, grid generation.
Prereq: 7611 (808). Not open to students with credit for 809.
7651.01 Applied Complex Variables and Asymptotics I
G 3
Contour integration, conformal mapping; asymptotics of integrals; asymptotic properties of Laplace and Fourier transforms; Riemann-Hilbert problems, applications to singular integral equations; introduction to the theory of elliptic functions.
Prereq: 5251 and 5201 and 6451. Not open to students with credit for 7651.02.
7651.02 Applied Complex Variables and Asymptotics I
G 3
Contour integration, conformal mapping; asymptotics of integrals; asymptotic properties of Laplace and Fourier transforms; Riemann-Hilbert problems, applications to singular integral equations; introduction to the theory of elliptic functions.
Prereq: Post-candidacy in Math, and permission of instructor. This course is graded S/U.
7652.01 Applied Complex Variables and Asymptotics II
G 3
Asymptotic expansions; Watson's and Borel-Ritt lemma, stationary phase, steepest descent methods; controtive mapping methods; WKs and boundary layer methods; analyzable functions, transseries; Borel transform; Borel summability of solutions.
Prereq: 7651.01. Not open to students with credit for 7652.02.
7652.02 Applied Complex Variables and Asymptotics II
G 3
Asymptotic expansions; Watson's and Borel-Ritt lemma, stationary phase, steepest descent methods; controtive mapping methods; WKs and boundary layer methods; analyzable functions, transseries; Borel transform; Borel summability of solutions.
Prereq: Post-candidacy in Math, and permission of instructor. This course is graded S/U.
7711.01 Riemanian Geometry
G 3
Basic concepts of (pseudo) Riemannian geometry, such as curvature and Ricci tensors, Riemannian distance, geodesics, the Laplacian, and proofs of some fundamental results, including the Frobenius and Lie-subgroup theorems, the local structure of constant-curvature metrics, characterization of conformal flatness, the Hopf-Rinow, Myers, Lichnerowicz and Singer-Thorpe theorems.
Prereq: 6T02. Not open to students with credit for 7711.02.
7711.02 Riemanian Geometry
G 3
Basic concepts of (pseudo) Riemannian geometry, such as curvature and Ricci tensors, Riemannian distance, geodesics, the Laplacian, and proofs of some fundamental results, including the Frobenius and Lie-subgroup theorems, the local structure of constant-curvature metrics, characterization of conformal flatness, the Hopf-Rinow, Myers, Lichnerowicz and Singer-Thorpe theorems.
Prereq: Post-candidacy in Math, and permission of instructor. This course is graded S/U.
7721.01 Kahler Geometry
G 3
Basic concepts of Kahler geometry, such as the Kahler and Ricci forms, positivity/negativity in cohomology, Kahler-Einstein metrics, and proofs of some fundamental results, including the d- bar lemma, Calabi's uniqueness theorems, Matsushita's reductivity theorem for Kahler-Einstein manifolds, and Futaki's isomorphism theorem.
Prereq: 6T01 and 6221. Not open to students with credit for 7721.02.
7721.02 Kahler Geometry
G 3
Basic concepts of Kahler geometry, such as the Kahler and Ricci forms, positivity/negativity in cohomology, Kahler-Einstein metrics, and proofs of some fundamental results, including the d-bar lemma, Calabi's uniqueness theorems, Matsushita's reductivity theorem for Kahler-Einstein manifolds, and Futaki's isomorphism theorem.
Prereq: Post-candidacy in Math, and permission of instructor. This course is graded S/U.
7811.01 Homotopy Theory
G 3
Homotopy groups, Whitehead's theorem, CW approximation; homotopy excision, Hurewicz theorem; fibrations, mapping path and loop spaces; fibre bundles, sphere bundles over spheres; obstruction theory, relation to cohomology; Postnikov towers.
Prereq: 6602. Not open to students with credit for 7811.02.
7811.02 Homotopy Theory
G 3
Homotopy groups, Whitehead's theorem, CW approximation; homotopy excision, Hurewicz theorem; fibrations, mapping path and loop spaces; fibre bundles, sphere bundles over spheres; obstruction theory, relation to cohomology; Postnikov towers.
Prereq: Post-candidacy in Math, and permission of instructor. This course is graded S/U.
7851.01 Differential Topology I
G 3
Whitney Immersion and Embedding Theorems, transverse functions, jet-bundles, Thom transversality; classification of vector bundles, collars, tubular neighborhoods, intersection theory; Morse functions and lemma; surgery, Smale cancellation.
Prereq: 6701 and 6901. Not open to students with credit for 7851.02.
7851.02 Differential Topology I
G 3
Whitney Immersion and Embedding Theorems, transverse functions, jet-bundles, Thom transversality; classification of vector bundles, collars, tubular neighborhoods, intersection theory; Morse functions and lemma; surgery, Smale cancellation.
Prereq: Post-candidacy in Math, and permission of instructor. This course is graded S/U.
7852.01 Differential Topology II
G 3
DeRahm and Cech cohomology; deRham Theorem; Grassmannians; Steifel-Whitney, Euler, Chern, and Pontryagin classes; Gysin sequence, Thom isomorphism; characteristic numbers, multiplicative sequences, Hirzebruch signature theorem; Chern-Weil Theory.
Prereq: 6T02 and 6802 and 7851.01. Not open to students with credit for 7852.02.
7852.02 Differential Topology II
G 3
DeRahm and Cech cohomology; deRahm Theorem; Grassmannians; Steifel-Whitney, Euler, Chern, and Pontryagin classes; Gysin sequence, Thom isomorphism; characteristic numbers, multiplicative sequences, Hirzebruch signature theorem; Chern-Weil Theory.
Prereq: Post-candidacy in Math, and permission of instructor. This course is graded S/U.
7998 Graduate Research
G 1 - 16
Graduate Research; primarily for intermediate PhD students participating in research projects other than their thesis work.
Prereq: Permission of the department. Repeatable. This course is graded S/U.
8000 Topics in Foundations of Mathematics
G 3
Special topics in foundations of mathematics chosen by the instructor.
Prereq: Permission of department. Repeatable to a maximum of 15 cr hrs or 5 completions.
8110 Topics in Algebra
G 3
Special topics in algebra chosen by the instructor.
Prereq: Permission of department. Repeatable to a maximum of 15 cr hrs or 5 completions.
310 Mathematics

8120 Topics in Number Theory G 3
Special topics in number theory chosen by the instructor.
Prereq: Permission of department. Repeatable to a maximum of 15 cr hrs or 5 completions.

8140 Topics in Algebraic Geometry G 3
Special topics in algebraic geometry chosen by the instructor.
Prereq: Permission of department. Repeatable to a maximum of 15 cr hrs or 5 completions.

8160 Topics in Representation Theory G 3
Special topics in representation theory chosen by the instructor.
Prereq: Permission of department. Repeatable to a maximum of 15 cr hrs or 5 completions.

8210 Topics in Real Analysis G 3
Special topics in real analysis chosen by the instructor.
Prereq: Permission of department. Repeatable to a maximum of 15 cr hrs or 5 completions.

8220 Topics in Complex Analysis G 3
Special topics in complex analysis chosen by the instructor.
Prereq: Permission of department. Repeatable to a maximum of 15 cr hrs or 5 completions.

8250 Topics in Probability Theory G 3
Special topics in probability theory chosen by the instructor.
Prereq: Permission of department. Repeatable to a maximum of 15 cr hrs or 5 completions.

8300 Topics in Financial Mathematics G 3
Special topics in financial mathematics chosen by the instructor.
Prereq: Permission of department. Repeatable to a maximum of 15 cr hrs or 5 completions.

8410 Topics in Ordinary Differential Equations G 3
Special topics in ordinary differential equations chosen by the instructor.
Prereq: Permission of department. Repeatable to a maximum of 15 cr hrs or 5 completions.

8420 Topics in Partial Differential Equations G 3
Special topics in partial differential equations chosen by the instructor.
Prereq: Permission of department. Repeatable to a maximum of 15 cr hrs or 5 completions.

8500 Topics in Combinatorics G 3
Special topics in combinatorics chosen by the instructor.
Prereq: Permission of department. Repeatable to a maximum of 15 cr hrs or 5 completions.

8610 Topics in Applied Mathematics G 3
Special topics in applied mathematics chosen by the instructor.
Prereq: Permission of department. Repeatable to a maximum of 15 cr hrs or 5 completions.

8650 Topics in Mathematical Biology G 3
Special topics in mathematical biology chosen by the instructor.
Prereq: Permission of department. Repeatable to a maximum of 15 cr hrs or 5 completions.

8710 Topics in Differential Geometry G 3
Special topics in differential geometry chosen by the instructor.
Prereq: Permission of department. Repeatable to a maximum of 15 cr hrs or 5 completions.

8750 Topics in Lie Theory G 3
Special topics in Lie theory chosen by the instructor.
Prereq: Permission of department. Repeatable to a maximum of 15 cr hrs or 5 completions.

8800 Topics in Topology G 3
Special topics in topology chosen by the instructor.
Prereq: Permission of department. Repeatable to a maximum of 15 cr hrs or 5 completions.

8998 Graduate Research G 1 - 16
Graduate research, primarily for advanced PhD students participating in research projects other than their thesis work.
Prereq: Permission of department. Repeatable to a maximum of 20 completions. This course is graded S/U.

8999 Dissertation Research G 1 - 16
Graduate research for students working on their PhD dissertation.
Prereq: Permission of department. Repeatable. This course is graded S/U.

3191 Internship in Meat Science U 2
Supervised preplanned employment experience and/or on-site problem solving study program.
Prereq: Permission of academic advisor. Prereq or concur: FAES 3191. This course is graded S/U. Cross-listed in AnimSci.

3210 Food Animal Processing U 3
Hands-on application of the procedures involved with food animal harvest, inspection, carcass fabrication and merchandising retail products.
Prereq or concur: 3110 or AnimSci 3110. Not open to students with credit for AnimSci 355.02.

3310 Meat Animal and Carcass Evaluation U 3
Evaluating the factors that influence the value of meat animals and their resulting carcasses, wholesale and retail cuts in accordance with recognized grading standards; laboratory practice.
Prereq: Not open to students with credit for AnimSci 305.

3488 Professional Development in Meat Science U 1 - 2
Participation in structured co-curricular programs leading to professional development.
Prereq: CPRH 2.0 or above, and permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

4193 Individual Studies U 0 - 3
Special assignments and advanced research; problems assigned after consultation with the instructor in charge.
Prereq: CPRH 2.5 or above, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

4194 Group Studies U 1 - 3
Special topics area group studies finally proposed for a specific semester by an animal science faculty member.
Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

4510 Processed Meats U 3
Exploring fundamental changes in soft animal tissues resulting from comminution and application of non-meat ingredients and a variety of cooking methodologies to enhance palatability and value.
Prereq or concur: 3110, AnimSci 3110, or FdScTe 2400. Not open to students with credit for AnimSci 355.02.

4999 Research with Distinction U 0 - 6
Conducting and reporting research with distinction.
Prereq: CPRH 3.0 overall. GPA 3.0 or above in major, and permission of project supervisor. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

4999H Honors Research with Distinction U 0 - 6
Conducting and reporting honors research with distinction.
Prereq: Honors standing, FAES 1100H, CPRH 3.4 or above, major GPA 3.4 or above, and permission of honors project supervisor. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

5510 Advanced Meat Science U G 3
Exploration of the antemortem and postmortem biochemical principles in skeletal muscle underlying protein functionality and resulting meat quality.
Prereq: 3110 or AnimSci 3110. Not open to students with credit for AnimSci 605.

5810 Branded Meat Products U G 4
Integration of multiple factors influencing value-added product development including; raw material quality and procurement, processing, packaging, distribution, and complexity of market development and current consumer trends in niche marketing.
Prereq: 3110 or AnimSci 3110, and completion of a second writing course. Not open to students with credit for AnimSci 5810 or 555.03. Cross-listed in AnimSci.

Mechanical Engineering

2010 Statics U 2
Vector concepts of static equilibrium for isolated and connected bodies, centroids, inertia, truss, frame and machine analysis, and friction.
Prereq: Engr 1181 or 1187 or 1281H, and Physics 1250 or 1260, and Math 1151 or 1161. Not open to students with credit for 2010H or 2040.

2010H Statics U 2
Vector concepts of static equilibrium for isolated and connected bodies, centroids, inertia, truss, frame and machine analysis, friction and virtual work.
Prereq: Honors standing, and Engr 1181 or 1187 or 1281H, and Math 1151 or 1161. Prereq or concur: Physics 1250 or 1260. Not open to students with credit for 2040.

2020 Introduction to Mechanics of Materials U 3
Stress and strain analysis of deformable structural components subjected to unidirectional and combined loads; pressure vessels; stress transformations (Mohr's Circle); beam deflections; column buckling.
Prereq: 2010 or 2010H. Not open to students with credit for 2040.

2030 Dynamics U 3
Dynamics of particles and rigid bodies; linear and angular motion; work and energy; and single degree of freedom vibration analysis.
Prereq: 2010 or 2010H or 2040.

Meat Science

1100 Exploring Animal and Meat Sciences U ½
Basic understanding of animal and meat sciences and opportunities for undergraduate professional development.
Cross-listed in AnimSci.

2010 Bar-B-Que Science U 2
Investigating methods to prepare various meat products. Students will gain experience in matching proper cooking methods with different muscles to produce wholesome and palatable products. Students will be introduced to product sensory techniques.

3110 Introductory Meat Science U 3
Analysis of the principles of meat science as related to meat animal value factors, processing technology, and merchandising systems affecting the producer, processor, and consumer.
Prereq: Biology 1101 or 1113. Not open to students with credit for AnimSci 3110. Cross-listed in AnimSci.
2040 Statics and Introduction to Mechanics of Materials U 4
Vector concepts of static equilibrium, truss, frame and machine analysis, Stress and strain analysis of deformable structural components; stress transformations; beam deflections; column buckling.
Prereq: Engr 1181 or 1187 or 1281H, and Physics 1250 or 1260, and Math 1152 or 1161 or 1172 or 1181H. Not open to students with credit for 2020.

2193 Individual Studies in Mechanical Engineering U 1 - 5
Designed to give the advanced student opportunity to pursue special studies not otherwise offered.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 15 completions. This course is graded S/U.

2194 Group Studies in Mechanical Engineering U 1 - 5
Special topics in Mechanical Engineering. The particular topic, credit hours, and the instructor will be announced the semester previous to the one in which the course is offered.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

2194H Group Studies in Mechanical Engineering U 1 - 5
Special topics in mechanical engineering. The particular topic, credit hours, and the instructor will be announced the semester previous to the one in which the course is offered.
Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

2850.01 Numerical Methods in Mechanical Engineering U 3
Prereq: Enrollment as MechEng-BS student (No ME pre-majors can enroll in this course), or permission of instructor. Prereq or concur: Math 2174 or 2415 (415), or equiv. Not open to students with credit for 250.

2850.02 Numerical Methods in Mechanical Engineering U 3
Prereq: Enrollment as indEng-BS or ISE-PRE student, or permission of instructor. Prereq or concur: Math 2174 or 2415. Not open to students with credit for 250.

2900 Introduction to Design in Mechanical Engineering U 3
Introduction to the discipline of Mechanical Engineering through a structured design, build, and test sequence. Students will fabricate apparatus which requires a basic understanding of the full scope of Mechanical Engineering.
Prereq: Enrollment as MechEng-BS student (No ME pre-majors can enroll in this course); or permission of instructor. Prereq or concur: MatSeEn 2010.

3260 System Dynamics and Vibrations U 3
Applications of ordinary differential equations, Laplace transforms, transfer function analysis to first and second order systems, and single-degree-of-freedom mechanical and electrical systems.
Prereq: 2850 (250) and 2000, and enrollment as MechEng-BS student (No ME pre-majors can enroll in this course); or permission of instructor. Prereq or concur: ECE 2300 or 2300.01 or 320. Not open to students with credit for 481 or 650.

3360 System Integration and Control U 3
Modeling of a variety of multi-domain systems, including electromechanical actuators, principles of feedback control, and analysis of control systems.
Prereq: 3260 or 3261, and enrollment as MechEng-BS student (No ME pre-majors can enroll in this course); or permission of instructor. Prereq or concur: 3903 (504) or 3904. Not open to students with credit for 482 or 571.

3500 Engineering Thermal Sciences U 3
Introduction to thermodynamics, fluid mechanics and heat transfer with engineering applications.
Prereq: Math 2174 or 2177 or 2255 (255) or 2415 (415), and Physics 1250 (131). Not open to students with credit for 500 or enrolled in MechEng major.

3501 Introduction to Engineering Thermodynamics U 3
Principles of engineering thermodynamics from the classical perspective, including first and second laws of thermodynamics, with selected applications.
Prereq: 2850 and 2900, and Chem 1210 or 1250; and enrollment as MechEng-BS student; or permission of instructor. Not open to students with credit for 3502, or to MechEng pre-majors.

3503 Introduction to Fluid Mechanics U 3
A study of the basic concepts, fundamental equations, and applications of fluid mechanics as engineering problems.
Prereq: 2850 (250), and 3501 (501) or 3502, and enrollment as MechEng-BS student (No ME pre-majors can enroll in this course); or permission of instructor. Not open to students with credit for 503 or 504.

3670 Design and Analysis of Machine Elements I U 2
Design of mechanisms. Application of general mechanical engineering principles to the design and analysis of mechanical components.
Prereq: 2020 (420) and 2030 (430) and 2900 and 2850 (250), and enrollment as MechEng-BS student; or permission of instructor. Not open to students with credit for 553 or 561 or to MechEng pre-majors.

3671 Design and Analysis of Machine Elements II U 3
Continuation of 3670 and 3671.
Prereq: 3670 or 3676, and 3751, and enrollment as MechEng-BS student; or permission of instructor. Not open to students with credit for 563, or to MechEng pre-majors.

3751 Kinematics and Mechanism Design U 2
This course is intended to help students develop an intuitive understanding of the design concepts for machinery and mechanisms. Topics covered are: kinematic joints, mobility analysis, kinematic synthesis of planar linkages, computer-aided design of mechanisms, kinematic analysis, Cam motion program synthesis, and cam profile design.
Prereq: 2030 and 2900, or permission of instructor. Not open to students with credit for 3670 (Au17 or before), 3553, or 553.

3870 Introduction to Measurements and Data Analysis in Mechanical Engineering U 3
Foundation in experimental measurement and data analysis in mechanical engineering; team planning and execution of experiments; technical report writing.
Prereq: Stat 3450 or equiv, and 3260 (482) or 3261, and a second writing course, and enrollment in Mechanical Engineering major; or permission of instructor. Prereq or concur: 3503 (504) or 3504. Not open to students with credit for 570.

4193.01 Individual Studies in Mechanical Engineering U 1 - 5
Designed to give the advanced student opportunity to pursue special studies not otherwise offered.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 15 completions. This course is graded S/U.

4193.02 Individual Studies in Mechanical Engineering U 1 - 5
Designed to give the advanced student opportunity to pursue special studies not otherwise offered.
Prereq: Permission of Instructor. Repeatable to a maximum of 15 cr hrs or 15 completions.

4194 Group Studies in Mechanical Engineering U 1 - 5
Special topics in mechanical engineering. The particular topic, credit hours, and the instructor will be announced the semester previous to the one in which the course is offered.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

4194H Group Studies in Mechanical Engineering U 1 - 5
Special topics in Mechanical Engineering. The particular topic, credit hours, and the instructor will be announced the semester previous to the one in which the course is offered.
Prereq: Enrollment in Mechanical Engineering major; or permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

4505 Introduction to Nuclear Science and Engineering U 3
Discussion of nuclear energy and nuclear radiation; sources, methods of utilization, and projections for future engineering uses.
Prereq: Math 2135 or above and Physics 1251, or permission of instructor. Not open to students with credit for NucEn 4505. Cross-listed in NucEn.

4510 Heat Transfer U 3
A study of the fundamentals of conduction, convection, and thermal radiation energy transfer with engineering applications.
Prereq: 3503 (504) or 3504, and MechEng-BS student (no pre-majors); or permission of instructor. Not open to students with credit for 510.

4536 Nuclear Reactor Systems U 3
Introductory course covering concepts of nuclear power reactor systems, thermal and mechanical design aspects, and economics of nuclear power plants.
Prereq: 4505 (553) or NucEn 4505 (555); or permission of instructor. Not open to students with credit for 6536 (736), NucEn 4536 (736), or 6536 (736). Cross-listed in NucEn.

4684 Product Design Capstone I U 4
Fundamentals of the product design process, from concept creation to final implementation, including product architecture and design for manufacture and assembly. Part I will end with initial build and Part II will continue with implementation and testing.
Prereq: 3671 (563), and 3360 or 3870 (571); and 3870 (570). Prereq or concur: 4510 (510), and enrollment as MechEng-BS student, or permission of instructor. Not open to students with credit for 5682 (682) or ISE 6682 (650) or 5680.

4685 Product Design Capstone II U 2
Fabrication and testing of the product prototype developed in MechEng 4684, Product Design Capstone I.
Prereq: 4684.

4870 Multidisciplinary Mechanical Engineering Laboratory U 2
Builds upon prior laboratory experiences and integrates thermal and mechanical system concepts; focus on problem solving using experimental and analytical/computational methods.
Prereq: 3860, 3871, and 3870, and enrollment as MechEng-BS or EngPhys-BS student. Prereq or concur: 4510.
312 Mechanical Engineering

4900 ME Capstone Design I U 1½
First course of 2-semester senior capstone series. Fundamentals of engineering design process and the technical and professional skills needed in Mechanical Engineering. Lectures, hands-on project.
Prereq: 3671 (563), and 3360 or 3361 (571); and 3870 (570), PreReq: or concurrent: 4510 (510); and enrollment as MechEng-BS student; or permission of instructor. Concur: 4901.01 or 4902.01 or 4903.01 or 4904.01 or 4905.01. Not open to students with credit for Engr 4901 (658), 564, or 565, or MechEng pre-majors.

4901.01 ME Capstone Design II: General Projects U 1
Second course of 2-semester capstone sequence. Students work on design problems proposed by faculty. Emphasis on problem definition, requirements, and design proposal. Concur: 4900, and enrollment as MechEng-BS student; or permission of instructor. Not open to MechEng pre-majors.

4901.02 ME Capstone Design III: General Projects U 2½
Third course of 2-semester senior capstone series. Complete work on design problem proposed by faculty. Emphasis on detailed design, prototype, evaluation, and documentation. PreReq: 4901.01, and enrollment as MechEng-BS student (No ME pre-majors can enroll in this course); or permission of instructor.

4902.01 ME Capstone Design II: Student Design Competitions U 1
Second course of 2-semester capstone sequence. Students work on design problems arising from various student competitions in engineering. Emphasis on problem definition, requirements, and design proposal.
Concur: 4900, and enrollment as MechEng-BS student; or permission of instructor. Not open to MechEng pre-majors.

4902.02 ME Capstone Design III: Student Design Competitions U 2½
Third course of 2-semester senior capstone series. Complete work on design project associated with student design competitions. Emphasis on detailed design, prototype, evaluation, and documentation.
PreReq: 4902.01, and enrollment as MechEng-BS student (No ME pre-majors can enroll in this course); or permission of instructor.

4903.01 ME Capstone Design II: Industry Projects U 1
Second course of 2-semester capstone sequence. Students work on design problems sponsored and/or proposed by industry. Emphasis on problem definition, requirements, and design proposal.
Concur: 4900, and enrollment as MechEng-BS student; or permission of instructor. Not open to MechEng pre-majors. This course is progress graded.

4903.02 ME Capstone Design III: Industry Projects U 2½
Third course of 2-semester senior capstone series. Complete work on design project from industry. Emphasis on detailed design, prototype, evaluation, and documentation.
PreReq: 4903.01, and enrollment as MechEng-BS student (No ME pre-majors can enroll in this course); or permission of instructor.

4904.02 ME Capstone Design III: Humanitarian Projects U 2½
Third course of 2-semester senior capstone series. Complete work on humanitarian project. Emphasis on detailed design, prototype, evaluation, and documentation.
PreReq: 4904.01, and enrollment as MechEng-BS student (No ME pre-majors can enroll in this course); or permission of instructor.

4905.01 ME Capstone Design II: Assistive Devices U
Second course of 2-semester senior capstone series. Students begin to work on assistive devices for persons with disabilities. Emphasis on problem definition, requirements, and design proposal.
Concur: 4900, and enrollment as MechEng-BS student; or permission of instructor. Not open to MechEng pre-majors.

4905.02 ME Capstone Design III: Assistive Devices U 2½
Third course of 2-semester senior capstone series. Complete work on assistive devices for persons with disabilities. Emphasis on detailed design, prototype, evaluation, and documentation.
PreReq: 4905.01, and enrollment as MechEng-BS student (No ME pre-majors can enroll in this course); or permission of instructor.

4906.01 ME Capstone Design II: Special Projects U 1
Second course of 2-semester senior capstone series. Students begin to work on their design project. Emphasis on problem definition, requirements, design proposal.
PreReq: 4900. This course is progress graded.

4906.02 ME Capstone Design III: Spec Projects U 2½
Third course of 2-semester senior capstone series. Complete work on design project proposed by faculty. Emphasis on detailed design, prototype, evaluation, documentation.
PreReq: 4906.01.

4998 Undergraduate Research in Mechanical Engineering U 1 - 2
Opportunity for undergraduate students to conduct research in Mechanical Engineering. PreReq: Permission of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

4998H Undergraduate Research in Mechanical Engineering U 1 - 2
Opportunity for undergraduate Honors program students to conduct research in Mechanical Engineering. PreReq: Honors standing, and enrollment in MechEng major; and permission of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

4999 Mechanical Engineering Undergraduate Research for Thesis U 1 - 3
Students are offered the opportunity to pursue independent projects/research. Student presentations and undergraduate thesis writing is included.
PreReq: CPRHR 3.0 or above, and Sr standing in MechEng major; or permission of instructor. Repeatable to a maximum of 6 cr hrs or 4 completions.

4999H Mechanical Engineering Undergraduate Research for Thesis U 1 - 3
Honors program students are offered the opportunity to pursue independent projects/research. Student presentations and undergraduate thesis writing is included, to enable graduation with Research Distinction in Mechanical Engineering.
PreReq: Honors standing, and CPRHR 3.4 or above, and Sr standing in MechEng major; or permission of instructor. Repeatable to a maximum of 6 cr hrs or 4 completions.

5030 Intermediate Dynamics U G 3
This course emphasizes dynamics of single/multi-degree-of-freedom systems, including particles and rigid bodies, and is aimed as an extensive introduction to the principles of analytical mechanics. Of particular interest is the investigation of Lagrange's equations of motion for particles and rigid bodies.
PreReq: 2030, or permission of instructor. Not open to students with credit for 5194 (Au14 or Sp16).

5134 Introduction to Vibrations of Deformable Solids U G 3
Introduction to the analysis of the free and forced transverse vibrations of strings, beams, membranes and plates and the longitudinal and torsional vibrations of prismatic bars.
PreReq: 2020 (420) or 2040, and Math 2174, 2177, or 2415 (415); and enrollment in MechEng major; or Grad standing in MechEng. Not open to students with credit for 734.

5139 Applied Finite Element Method U G 3
Overview of finite element method, description of finite element software, modeling requirements and techniques, analysis using general purpose software, and case studies.
PreReq: 2020 or 2040 or equiv., and enrollment in MechEng major; or Grad standing in Engineering.

5144 Engineering Fracture Mechanics U G 3
Fracture and fatigue of solids; stress intensity factors, stability of cracks; compliance and energy methods; plane stress, plane strain effects; crack propagation and arrest criteria.
PreReq: 2020 (420) or 2040, and Math 2174, 2177, or 2415 (415); and Grad standing in Engineering. Not open to students with credit for 744.

5162 Introduction to Laminated Composite Materials U G 3
Introduction to anisotropic material behavior and failure assessment of laminated composite materials. Classical lamination theory, beams, plates and shells.
PreReq: 2020 (420) or 2040; or Grad standing in Engineering; or permission of instructor. Not open to students with credit for 652, 762, CivilEn 5162, 652, or 762. Cross-listed in CivilEn.

5180 Mechanics of Biomolecular Systems U G 3
Introduction to biomolecules and systems in the context of cellular functions. In particular the course focuses on the physical properties of biomolecules and the physical interactions that mediate their functions.
PreReq: Sr or Grad standing in Engineering, or permission of instructor. Not open to students with credit for 694E (Spring 2010).

5194 Group Studies in Mechanical Engineering U G 1 - 5
Special topics in Mechanical Engineering. The particular topic, credit hours, and the instructor will be announced the semester prior to the one in which the course is offered.
PreReq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

5234 Vehicle Dynamics U G 4
A first course in vehicle dynamics devoted to the basic concepts of rubber wheeled vehicles with an actual driving and demonstrated laboratory.
PreReq: 3360 (482) and 3671 (563), or Grad standing in MechEng, or permission of instructor. Not open to students with credit for 654 or 754.

5240 Mechanical Vibrations U G 3
PreReq: 2060 (481), PreReq: or concurrent: 3360 (482), or Grad standing in Engineering. Not open to students with credit for 650, 666, or 7250.

5241 Engineering Acoustics U G 3
PreReq: 3260, or Grad standing, or permission of instructor.
5339 Simulation Techniques for Dynamic Systems U G 3
Introduction and use of software tools for dynamic system modeling, control system analysis, and design. Application to real world dynamic systems, with emphasis on model development and validation, parameter identification, and results presentation. Prereq: 3360 (571) or equiv, and enrollment in MechEng; or Graduate standing in MechEng; or permission of instructor.

5359 Extracellular Matrix in Bioengineering U G 3
Extracellular matrix (ECM) present in mammalian tissue(s) is important for the integrity and tensile strength of the underlying tissue as well as for cell-matrix interactions and matrix mineralization. This course provides an overview of the composition, structure and function of ECM and its application(s) in bioengineering. Prereq: Jr, Sr or Grad standing in MechEng or BioMedE, or permission of instructor. Not open to students with credit for 5359.

5372 Design and Control of Mechatronic Systems U G 3
Introduction to multi-domain (mechanical, thermal, fluid, electrical, electronic, electro-mechanical) system design, dynamic modeling, and control system design and analysis techniques. Prereq: 3360 (571) or 3361, or Grad standing in MechEng, or permission of instructor. Not open to students with credit for 672 or 674.

5374 Smart Materials and Intelligent Systems U G 3
Macromechanical modeling of smart materials including piezoceramics, magnetostriatics, shape memory alloys, magnetothermophysical fluids, and active polymers. Constitutive and system-level modeling. Design of smart dynamic systems. Prereq: 3360 (571) or 3361, or Grad standing in MechEng, or permission of instructor. Not open to students with credit for 774.

5427 Introduction to Turbomachinery U G 3
Introduction to analysis and design of turbomachinery. Prereq: 3503 or 3504 (504), or Grad standing in MechEng. Not open to students with credit for 627.

5463 Introduction to Real Time Robotics Systems U G 3
Components of a robot system, robot forward and reverse kinematics; robot dynamics; robot force generation, robot trajectory generation. Prereq: Math 2177 or 2174, or 2415 and 2569; and Physics 1250, 1250H, 1260, or 2300; and CS&E 1221, 1222, Engr 1181, 1281.01H, 1281.02H, 1221 or 1222; or Grad standing in Engr; or permission of instructor. Not open to students with credit for 7752 or ECE 5463. Cross-listed in ECE.

5502 Engineering Thermodynamics U G 3
Technique effective in engineering Thermodynamics including energy analysis, non-reacting and reacting gas mixtures, combustion, psychrometrics, chemical and phase equilibrium, thermoeconomics and applications. Prereq: 3501 (501) or 3502, or equiv. Not open to students with credit for 502.

5512 Design of Heat Exchangers U G 2
Design methods, heat transfer and pressure drop in single phase and two phase heat exchangers. Design of single phase and two phase heat exchangers. Prereq: 4510 (510), or Grad standing in MechEng, or permission of instructor. Not open to students with credit for 612.

5530 Internal Combustion Engines U G 3
Design and operating characteristics of contemporary internal combustion engines, induction/exhaust breathing, boosting, variable valvetrains, combustion and knock, fuel economy, alternative fuels, and advanced powertrains. Prereq: 3501 or 3502 (502), or Grad standing in MechEng, or permission of instructor. Not open to students with credit for 630.

5531 Automotive Powertrain Laboratory U G 3
This course focuses on analysis and testing of advanced automotive systems. These systems include advanced powertrain components like turbocharged GDI engines, electric powertrain components like electric motors, and autonomous vehicle sensing technologies like radar and lidar. Students will conduct labs and use supplied data to conduct analysis typical of practicing automotive engineers. Prereq: 3670; or Grad standing in Engr, or permission of instructor.

5539 Applied Computational Fluid Dynamics and Heat Transfer U G 3
Introduces basic concepts in Computational Fluid Dynamics (CFD) and Computational Heat Transfer (CHT), teaches thermo-fluid analysis of engineering systems, and enhances understanding of fluid flow and heat transfer. Prereq: 3501 or 3502 (502), or 3503 or 3504 (504). Prereq or concurs: 4510 (510), or Grad standing in MechEng.

5541 Heating, Ventilating, and Air Conditioning U G 3
Analysis of components and systems for heating, ventilating and air-conditioning. Prereq: 4510 (510), or Grad standing in MechEng. Not open to students with credit for 641.

5550 Engineering Principles in Cancer U G 3
The purpose of this course is to introduce engineering principles in the context of cancer progression and therapy. Prereq: 3500, 3503, or CBE 2420; or permission of instructor. Not open to students with credit for BioMedE 5550 or CBE 5550. Cross-listed in BioMedE and CBE.

5600 Applied Project Management in Product Development U G 3
Team Environments
Students learn to apply project management concepts in product development team environments; includes relevant theory, tools, and techniques used in industry; relevant systems engineering concepts for designing complex products are introduced. Prereq: Jr, Sr, Grad status; and enrollment in College of Engineering or Engineering minor. Not open to with credit for 4194 or 5194.

5670 Advanced MCAD modeling with CATIA U G 3
Advanced techniques for solid, surface and assembly modeling using CATIA workbenches. Covers not only construction methods, but also how geometric modelers work internally; constraint solving, geometric DoFs, history roll forward-rollback, BRep data structure, Boolean ops, math representations of curves and surfaces. Teaches effective strategies for modeling, parametrization and robust histories. Prereq: 3670, or Grad standing in Engr, or permission of instructor.

5680 Computer Aided Design and Manufacturing U G 4
Design of machine components, surfaces, and assemblies using parametric and feature-based design principles and advanced design tools. Prereq: 3670 (561), or Grad standing in Engineering, or permission of instructor. Not open to students with credit for 621 or 683.

5682.01 Fundamentals of Product Design Engineering U G 3
Lecture covering the fundamentals of the product design process, from concept creation to final implementation, including product architecture and design for manufacture and assembly. An optional, corresponding project-based lab course (ME/ISE 5683) offers practical application of this material. Open only to students enrolled in the College of Engineering. Prereq: Jr, Sr, or Grad standing in the College of Engineering, or permission of instructor. Not open to students with credit for 4684, 5682 (682), 5682.02, 5684, ISE 5560, 5682 (682), or 5682.02. Cross-listed in ISE.

5682.02 Product Design Engineering for Entrepreneurs U G 3
An engineering perspective on product development for non-engineering students in the Entrepreneurship & Innovation minor. This course covers fundamental products of the design process, from user research to concept creation to final implementation and manufacturing. Not open to students in the College of Engineering, does not count as an engineering Technical Elective. Prereq: Enrollment in a major outside of the College of Engineering, and enrollment in the Entrepreneurship & Innovation minor. Not open to students with credit for 5682, 5682.01, 5194 (AU15, SP16, AU16, Abell), ISE 5682, or 5682.01, or enrolled in a major within the College of Engineering.

5683 Fundamentals of Product Design Engineering Laboratory U G 1
This course is an optional laboratory to go with ISE/ME5682.01. This project-based lab gives students hands-on experience with the product design process introduced in lecture. Students will work with real people to identify opportunities to create innovative, product-based solutions. Students will go through the design process from conducting user research all the way to constructing prototypes. Prereq or concur: 5682.01 or ISE 5682.01, and enrollment in a major within the College of Engineering. Not open to students with credit for 5682, 5682.02, ISE 5682, or 5682.02. Cross-listed in ISE.

5700 Introduction to Musculoskeletal Biomechanics U G 3
Introduction to field of musculoskeletal biomechanics at a level appropriate for advanced undergraduates and senior graduate students. Fundamental anatomy and physiology. Mechanics of muscle, tendon, ligament, meniscus, bone. Equations of motion for movement. Introduction to experimental methods. Prereq: 3670, or permission of instructor. Not open to students with credit for 6700.

5751 Design and Manufacturing of Compliant Mechanisms U G 3
and Robots
Introduces methods and theories for kinematic and force analysis, synthesis of rigid body and compliant (flexible) mechanisms and robots. Pseudo-rigid-body model and CAD/CAE software will be used for modeling and analysis study. Students will be required to work on a team project to solve a real world design problem related to mechanisms and robots. Prereq: 3670 or equiv, or Grad standing in Engineering, or permission of instructor.

5787 Study at a Foreign Institution U G 1 - 10
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Prereq: Permission of department chairperson. Repeatable to a maximum of 15 cr hrs or 2 completions.

6193 Individual Studies in Mechanical Engineering G 1 - 5
Designed to give the advanced student opportunity to pursue special studies not otherwise offered. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 15 completions. This course is graded SU.

6193.01 Individual Studies in Mechanical Engineering G 1 - 5
Designed to give the advanced student opportunity to pursue special studies not otherwise offered. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 15 completions.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6194</td>
<td>Group Studies in Mechanical Engineering</td>
<td>G 1-5</td>
<td>Special topics in Mechanical Engineering. The particular topic, credit hours, and the instructor will be announced the term preceding the one in which the course is offered.</td>
</tr>
<tr>
<td>6501</td>
<td>Gas Dynamics</td>
<td>G 3</td>
<td>A study of one-dimensional and two-dimensional steady and unsteady unsteady compressible flows. Prereq: 3503 or 3504 (504), and Math 2174, 2255 (255), or 2415 (415); or Grad standing in MechEng or permission of instructor. Not open to students with credit for 701.</td>
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<tr>
<td>6505</td>
<td>Intermediate Fluid Dynamics</td>
<td>G 3</td>
<td>Principles and derivations of fundamental equations for incompressible flows with a special emphasis on formulation of problems. Prereq: 3503, or Grad standing in MechEng or AeroEng, or permission of Instructor. Not open to students with credit for 705.</td>
</tr>
<tr>
<td>6507</td>
<td>Intermediate Numerical Methods</td>
<td>G 3</td>
<td>Numerical techniques and computer algorithms to solve initial and boundary value problems relevant to engineering applications, such as heat conduction and mass diffusion. Prereq: 2850 (250), Math 2174 (568), 2415 (415), or 4512 (557 or 512); or Grad standing in MechEng, AeroEng, or NuclEn; or permission of Instructor. Not open to students with credit for 707 or NuclEn 6507 (707). Cross-listed in NuclEn.</td>
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<tr>
<td>6510</td>
<td>Intermediate Heat Transfer</td>
<td>G 3</td>
<td>In-depth derivation of equations and principles governing heat transfer with an emphasis on formulation of problems. Mass transfer is also introduced. Prereq: Grad standing in MechEng or AeroEng, or permission of Instructor. Not open to students with credit for 710.</td>
</tr>
<tr>
<td>6515</td>
<td>Introduction to Microfluidics and Nanofluidics</td>
<td>G 3</td>
<td>Principles of incompressible fluid mechanics &amp; electrokinetic phenomena at the micro &amp; nanoscale, biomedic applications with a laboratory illustrating fabrication techniques &amp; experimental methods. Undergrad students encouraged to seek permission. Prereq: 3503 or 3504 (504) or equiv, or Grad standing in Engineering, or permission of instructor. Not open to students with credit for 715 or BiomedE 5663. Cross-listed in BiomedE 5663.</td>
</tr>
<tr>
<td>6526</td>
<td>Combustion</td>
<td>G 3</td>
<td>Fundamentals of energy conversion through combustion, thermodynamics and chemical kinetics of combustion; premixed flames, deflagration vs. detonation waves, diffusion flames, droplet combustion, and thermal ignition. Prereq: 3503, 3504 (504), or 4510 (510), or permission of instructor. Not open to students with credit for 726.</td>
</tr>
<tr>
<td>6536</td>
<td>Nuclear Reactor Systems and Analysis</td>
<td>G 3</td>
<td>Intermediate-level course covering thermal and mechanical design aspects of nuclear power plants. The thermodynamics of operating nuclear power plants (BWRs and PWRs) are emphasized. Prereq: 4505 (505) or NuclEn 4505 (505); or MechEng 3501 or 3502 (502), or equiv; or permission of instructor. Not open to students with credit for 736 or NuclEn 6536 (763). Cross-listed in NuclEn.</td>
</tr>
<tr>
<td>6661</td>
<td>Advanced CEA Simulation for Structural Design</td>
<td>G 4</td>
<td>Advanced FE modeling of nonlinear structural problems; min. weight design and topology optimization. Includes boundary, geometric and material nonlinearities, both rate independent and dependent. The emphasis is on modeling decision making and validation. This is not a traditional FE theory class but a hands-on, software-intensive modeling and simulation class with a significant lab component. Prereq: 5139; or Grad standing in AeroEng, CivEng, MatSciEn, or MechEng.</td>
</tr>
<tr>
<td>6865</td>
<td>Reliability Engineering</td>
<td>G 3</td>
<td>Focuses on system level reliability modeling approaches. Engineering system reliability modeling and prediction; reliability of programmable devices and human reliability; reliability and risk management of engineering systems. Preq: 3260 (481), ECE 351, or ISE 4120 (510); or Grad standing; or permission of instructor. Not open to students with credit for 776.01.</td>
</tr>
<tr>
<td>6700</td>
<td>Musculoskeletal Biomechanics</td>
<td>G 3</td>
<td>Fundamental anatomy and physiology. Mechanics of muscle, tendon, ligament, meniscus, and bone. Equations of motion for human movement. Introduction to experimental methods in musculoskeletal biomechanics. Prereq: Grad standing in MechEng or BiomedE, or permission of Instructor. Not open to students with credit for 687 or 5700.</td>
</tr>
<tr>
<td>6716</td>
<td>Probabilistic Reliability and Safety Assessment</td>
<td>G 3</td>
<td>Methods underlying probabilistic risk assessment (PPRA) and how they are used in assessing the public health risk of nuclear systems. Prereq: 4505 (505), NuclEn 4505 (505), Grad standing, or permission of instructor. Not open to students with credit for 5716 (716) or NuclEn 5716 (716). Cross-listed in NuclEn.</td>
</tr>
<tr>
<td>7100</td>
<td>Introduction to Continuum Mechanics</td>
<td>G 3</td>
<td>Continuum mechanics in Cartesian and general coordinates, vectors and tensors in indicial and direct notation, analysis of deformation and stress, balance principles. Prereq: 2020 (420) or 2040, and Math 2174, 2255 (255), or 2415 (415) or equiv; or Grad standing in Engineering; or permission of instructor. Not open to students with credit for 743 and 840.</td>
</tr>
<tr>
<td>7101</td>
<td>Constitutive Models in Continuum Mechanics</td>
<td>G 4</td>
<td>Continuum-level constitutive models are developed, starting from a mechanistic point of view. Problems involving elasticity, plasticity, visco-elasticity, &amp; rubber elasticity are discussed. Prereq: 7040, 7105, 740, or 743; or permission of instructor. Not open to students with credit for 847 and 864.</td>
</tr>
<tr>
<td>7163</td>
<td>Advanced Strength of Materials and Elasticity Theory</td>
<td>G 4</td>
<td>Stress-Strain analysis of elastic solids: curved beams; non-symmetrical bending; non-circular torsion; beams on elastic foundations; load-deflection relations by energy methods; plane problems in elasticity theory, and applications to design Prereq: 2020 (420) or 2040, or equiv, and Math 2174 or 2255 (255) or 2415 (415); or Grad standing in MechEng. Not open to students with credit for 740 or 763.</td>
</tr>
<tr>
<td>7194</td>
<td>Group Studies in Mechanical Engineering</td>
<td>G 1-5</td>
<td>Special topics in Mechanical Engineering. The particular topic, credit hours, and the instructor will be announced the term previous to the one in which the course is offered. Prereq: Permission of instructor. Repeatable to a maximum of 10 or hrs or 10 completions.</td>
</tr>
<tr>
<td>7230</td>
<td>Advanced Dynamics</td>
<td>G 4</td>
<td>Three-dimensional kinematics and dynamics of particles and rigid bodies using vector (Newton-Euler) and analytical (Lagrange's equations and Hamilton's principle) methods. Rotating systems, Non-holonomic systems. Prereq: Sr or Grad standing. Not open to students with credit for 733 or 735.</td>
</tr>
<tr>
<td>7236</td>
<td>Powertrain Dynamics</td>
<td>G 3</td>
<td>Overview of dynamics and control of automotive powertrain systems. Emphasis on subsystem interactions. Analytical and numerical methods for dynamics of gas exchange, fueling, combustion and exhaust, and mechanical engine and transmission systems. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 781.</td>
</tr>
<tr>
<td>7250</td>
<td>Vibration of Discrete Systems</td>
<td>G 3</td>
<td>Concepts of undamped and damped vibrations of single and multi degree of freedom discrete systems. Principles of modal analysis, analytical dynamics and approximate methods. Prereq: 3303, and Math 2174, 2255, or 2415; or Sr or Grad standing in Engineering.</td>
</tr>
<tr>
<td>7255</td>
<td>Turbomachinery Dynamics</td>
<td>G 3</td>
<td>This course focuses on modeling the dynamics of rotating cyclic structures found in turbomachinery. The methods discussed in this class include traditional analysis methods such as cyclic analysis and small mistuning, and recent developments in modeling large mistuning, multi-stage systems, and friction damping. Prereq: Grad standing in Engr.</td>
</tr>
<tr>
<td>7259</td>
<td>Sliding Mode Control in Electromechanical Systems</td>
<td>G 3</td>
<td>Sliding modes an efficient tool to control high order dynamic plants operating under uncertainty conditions. Prereq: 5372 or ECE 5750 (750). Not open to students with credit for 859 or ECE 859 or 8599. Cross-listed in ECE 7859.</td>
</tr>
<tr>
<td>7260</td>
<td>Automotive Noise and Vibration Control I</td>
<td>G 3</td>
<td>Integrated study of vibrations, acoustics, digital signal processing and machinery dynamics based on case study approach; examination of design, manufacturing, material, performance, and economic considerations. Prereq: Sr or Grad standing in Engineering, or permission of instructor. Not open to students with credit for 777 or 779.</td>
</tr>
<tr>
<td>7261</td>
<td>Automotive Noise and Vibration Control II</td>
<td>G 3</td>
<td>Integrated study of vibrations, acoustics, digital signal processing and machinery dynamics based on case study approach; examination of design, manufacturing, material, performance, and economic considerations. Prereq: Sr or Grad standing in Engineering, or permission of instructor. Not open to students with credit for 777 or 779.</td>
</tr>
<tr>
<td>7262</td>
<td>Automotive Noise and Vibration Control III</td>
<td>G 3</td>
<td>Integrated study of vibrations, acoustics, signal processing and machinery dynamics based on case study approach; continuation of 7260 with focus on experimental and design methods. Prereq: 7260.01 or 777, or Sr or Grad standing, or permission of instructor. Not open to students with credit for 777 or 779.</td>
</tr>
<tr>
<td>7290</td>
<td>Digital Control Engineering</td>
<td>G 3</td>
<td>Theory of digital control engineering and its applications to the control of engineering systems including machines, vehicles, and processes. Prereq: 3360 and 3361, or 482 and 571, or Grad standing in MechEng, or permission of Instructor. Not open to students with credit for 777 or 779.</td>
</tr>
<tr>
<td>7372</td>
<td>Fault Diagnosis in Dynamic Systems</td>
<td>G 3</td>
<td>Covers the theory and application of fault diagnosis in multi-domain dynamic systems. Theory and case studies drawn from industrial applications. Prereq: 7380, ECE 4551, 5551, AeroEng 4521, or permission of instructor.</td>
</tr>
</tbody>
</table>
7374 Polymer Smart Materials and Material Systems - Advanced Modeling and Characterization  
Polymer smart materials and material systems with specific emphasis on mathematical modeling and characterization of ionic electroactive materials. Introduction of ionic electroactive materials as engineering materials and motivate students through various contemporary applications. Fabrication, characterization, electrochemical modeling for actuation, sensing, energy conversion and storage. 
Prereq: 5374, and Grad standing in Mechanical Engineering, or permission of instructor. Not open to students with credit for 7194 (Sp 2014 or Sp 2017, Polymer Smart Materials).

7380 Lumpd Parameter Modeling and System Analysis  
Mathematical model development and response prediction of lumped parameter dynamic systems. Input-output and state-space methods are used to develop insights into design, sensor placement and diagnostics, and actuator selection for control. 
Prereq: Math 2174, 2415 (415), or 4512 (512), or Grad standing in MechEng, or permission of instructor. Not open to students with credit for 780 or 880.

7383 Electrochemical Energy Conversion and Storage Systems for Automotive Applications  
Electrochemical energy storage (batteries) and conversion (fuel cells) systems for automotive applications covering state of the art principles, operations and modeling. 
Prereq: 6255 (726), or Grad standing in Engineering, or permission of instructor. Not open to students with credit for 788 or distance learning version 7383.02.

7384 Energy Modeling, Optimization, and Control of Hybrid Vehicles  
Fundamentals of advanced propulsion vehicles (HEV, PHEV, BEV, FCV), covering motivation, architectures, taxonomy and components, energy analysis, modeling, simulation, optimization, and supervisory control/energy management principles. 
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 784 or 785.

7385 Advanced Methods in the Dynamics and Control of Human and Animal Movement  
Mathematical ideas from control theory, optimization, nonlinear dynamics, and numerical computation that will be used to understand human, animal, and movement behavior and design. 
Prereq: 2030 (430), Math 2174, 2415 (415), 4668 (568), or 571, or Grad standing in Engineering.

7440 Internal Combustion Engine Modeling  
Comprehensive coverage of spark-ignited internal combustion engines modeling (fluid dynamics, thermodynamics and combustion). Additional coverage of compression ignition engine modeling and boosting. 
Prereq: 5530 or 630 or equiv, or permission of instructor. Not open to students with credit for 730.

7511 Computational Fluid Dynamics  
Advanced numerical methods for solving the Navier-Stokes equations using pressure-based techniques. 
Prereq: 6507 (707) or AeroEng 5615 (615), or permission of instructor. Not open to students with credit for 811.

7513 Turbulence  
A study of fundamentals of turbulent fluid flows and a few canonical flows. 
Prereq: 6605 (705), or permission of instructor. Not open to students with credit for 813 or AeroEng 7875 (875). Cross-listed in AeroEng 7875.

7527 Jet Propulsion  
Characteristics and performance of air breathing flight vehicle power plants and their components (inlets, compressors, combustions, turbines, and nozzles). 
Prereq: 4510 (510) or AeroEng 4550 (550), or permission of instructor. Not open to students with credit for 727 or AeroEng 8851 (851).

7751 Advanced Kinematics and Mechanisms  
Kinematic design and analysis of mechanisms. The focus is on kinematic representations of rigid transformations in space, derivation and solution of the kinematic constraint equations. Computer projects involve Solidworks and Matlab/Mathematica. 
Prereq: 3671 (663) or Engr 1153, or Grad standing, or permission of instructor. Not open to students with credit for 751.

7752 Mechanics and Control of Robots  
Introduction to the mechanical and mathematical principles of robotics including kinematics, rigid body dynamics, control theory, motion planning, sensors and actuators, legged locomotion and manipulation. 
Prereq: 2030 (430), Math 2174, 2415 (415), 4668 (568), 571, or equiv, or Grad standing in Engineering. Not open to students with credit for 752.

7761 Optimum Design of Machines and Structures  
Application of optimization techniques to mechanical systems and structures. The structures considered will typically be high performance structures such as in aircraft and spacecraft. 
Prereq: Sr standing, or permission of instructor. Not open to students with credit for 761 or AAE 7844 (844). Cross-listed in AAE 7844.

7765 Principles and Applications of Tribology  
Mechanisms of friction, wear, and lubrication ranging from macro- to nanoscale that govern interfacial behavior; applications to friction and wear problems. 
Prereq: Not open to students with credit for 766 or 767.

7837 Nanotechnology and Biomechanics  
Introduction to nanotechnology, nanocharacterization techniques, nanobiotechnology and nanomechanics of MEMS/NEMS and BioMEMS/BioNEMS materials and devices and an overview and research examples of biomimetics. 
Prereq: Not open to students with credit for 837.

8038 Advanced Topics in Finite Element Method  
State of the art advances in various areas of finite element methods covering a range of topics including element stability, time integration methods, and adaptive methods. 
Prereq: 7068 (768) or equiv, or Grad standing in MechEng, or permission of instructor. Not open to students with credit for 838.

8193 Individual Studies in Mechanical Engineering  
Designed to give the advanced student opportunity to pursue special studies not otherwise offered. 
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 15 completions. This course is graded S/U.

8194 Group Studies in Mechanical Engineering  
Special topics in Mechanical Engineering. The particular topic, credit hours, and the instructor will be announced the term previous to the one in which the course is offered. 
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

8220 Continuous Time Optimal Control  
Embraces the three historical trends in dynamic optimization: Calculus of Variations, Pontryagin’s Minimum Principle, and Bellman’s Principle of Optimality. Not only mathematical aspects of the three principles will be taught, but also their strengths and weaknesses - it is often less important to know how to apply a given principle than to know when. 
Prereq: 5732 or ECE 5551, or permission of instructor. Not open to students with credit for ECE 8250. Cross-listed in ECE 8260.

8230 Nonlinear Dynamics  
Analytical, geometric, and perturbation methods for study of nonlinear mechanical systems, and the dynamical phenomena that arise in nonlinear systems including stability, bifurcations, and hysteresis. 
Prereq: 7250 (731), or Grad standing in Engineering, or permission of instructor. Not open to students with credit for 832.

8250 Vibration of Continuous Systems  
Analysis of one, two and three dimensional continuous vibratory systems including strings, beams, membranes, plates and shells using exact and approximate methods with various boundaries. 
Prereq: 4030 (430) or 7250 (731), and Math 2255 (255) or equiv; or permission of instructor. Not open to students with credit for 734.

8260 Advanced Engineering Acoustics  
Acoustic wave equations and harmonic solution; radiation, transmission, absorption and control of sound waves; structural and flow sources; computational and experimental methods; engineering approximations. 
Prereq: 5240 (666), or Grad standing in Engineering, or permission of instructor. Not open to students with credit for 766.

8312 Diesel Powertrain Systems Control  
Control and estimation system designs for diesel powertrain and after treatment systems. 
Prereq: 7236 (781), or Grad standing in Engineering, or permission of instructor. Not open to students with credit for 766.

8322 Vehicle System Dynamics and Control  
Control and estimation system designs for vehicle systems. 
Prereq: Grad standing in Engineering, or permission of instructor.

8352 Robust Control of Mechatronic Systems  
This course is focused on the application of the parameter space approach of robust control to mechatronic systems including ADAS and automated driving. The students will learn how to design multi-objective low order controllers in parameter space based on Hurwitz stability, D-stability, phase margin bounds, gain margin bounds and mixed sensitivity bounds. 
Prereq: Grad standing in MechEng or ECE, or permission of instructor.

8503 Statistical Thermodynamics  
Prereq: Grad standing in MechEng or AeroEng, and permission of instructor. Not open to students with credit for 803.

8514 Optical Techniques in Fluid Flows  
Fundamentals of lasers, optics, and diatomic spectroscopy, and their application to flow and combustion diagnostics. 
Prereq: Grad standing in Engineering or the Sciences, or permission of instructor. Not open to students with credit for 814.

8518 Advanced Mathematical Methods in Mechanical Engineering  
Fourier series, complex differentiation and integration and transform and Green’s function for solution of problems arising in heat transfer, solid mechanics, fluid mechanics; asymptotic analysis. 
Prereq: Grad standing in Mechanical, Aerospace, or Nuclear Engineering; or permission of instructor. Cross-listed in AeroEng 8802.
316  Mechanical Engineering

8603  Irreversible Thermodynamics and Transport of Charge  G  3

Heat, and Spin
Ohm's, Fourier and Fick's laws, which relate linearly the transport of electrical charge, heat and matter to voltages, temperatures and concentrations gradients, are generalized in the framework of irreversible thermodynamics. The microscopic mechanisms of transport of heat, electrical charge and magnetization by elemental excitations (electrons, phonons and magnons) are explained.
Prereq: 8503 or statistical mechanics, and permission of instructor.

8888  Mechanical Engineering Graduate Seminar  G  1

Lecture and discussion of current topics related to Mechanical Engineering presented by graduate student, staff, and guest speakers. Course does not count toward course work required for MS or PhD degrees.
Prereq: Grad standing in MechEng, AeroEng, or NucEn. Repeatable to a maximum of 20 or hrs. This course is graded S/U.

8901  Future Academic Scholars Training I for MAE  G  2

To provide Ph.D. students in the Department of Mechanical and Aerospace Engineering an opportunity to learn, understand, and practice aspects of effective teaching specific to mechanical, aerospace and nuclear engineering.
Prereq: Enrollment in Mechanical, Aerospace, or Nuclear Engineering Ph.D. program; or permission of instructor. This course is graded S/U.

8902  Future Academic Scholars Training II for MAE  G  2

To provide Ph.D. students in the Department of Mechanical and Aerospace Engineering an opportunity to learn and understand what it takes to get an academic position in a research university and to become a successful faculty member.
Prereq: Enrollment as a PhD student in Mechanical, Aerospace, or Nuclear Engineering; or permission of instructor. This course is graded S/U.

8998  Graduate Research in Mechanical Engineering  G  1 - 16

Mechanical Engineering graduate research for thesis. Repeatable. This course is graded S/U.

8999  Mechanical Engineering Research for Dissertation  G  1 - 16

Research for dissertation purposes only. Repeatable. This course is graded S/U.

Medical Dietetics

1100  Careers in Dietetics  U  1

An introduction to the roles and responsibilities of the dietitian; the educational preparation of the dietitian and employment opportunities.

3100  Human Nutrition and Metabolism  U  3

Integration of principles related to foods, nutrients, physiology, and biochemistry as they apply to nutritional care for the promotion of health and prevention of disease.
Prereq: Chem 1210 and 1220; and Biology 1101 or 1113; and HumnNtr 2310; or equivalent coursework; or permission of instructor.

4200  Management in Medical Dietetics  U  3

The study of the principles of food management systems, including food procurement, food distribution, environment management, facility design, and introductory financial controls in noncommercial foodservice segments.

4500  Health Promotion and Community Nutrition  U  3

Study of community needs assessment, national nutrition policy, design and evaluation of programs and cultural factors to promote the health and nutritional status of the community.
Prereq: HumnNtr 2310.

4700  Research Design in Medical Dietetics  U  1

Concepts related to the planning, conducting, tabulating and reporting of research in dietetics.
Prereq: Enrollment in MedDiet program.

4900  Nutrition Assessment  U  3

Methods of gathering, interpreting, and reporting nutrition assessment data.
Prereq: HumnNtr 2310, ECOB 2520, or equiv.

4910  Nutr Care Process I  U  3


4911  Nutrition Care Process II  U  3

Nutrition care process: Principles of individual and group education and nutrition counseling as applied to responsibilities of the dietitian.
Prereq: Enrollment in MedDiet program. Concur: 4910, 4912, or 4911.

4912  Nutrition Care Process III  U  2

Laboratory and experiential application of the nutrition care process for disorders of body weight, musculoskeletal system, cardiovascular system; gastrointestinal tract and endocrine system.
Prereq: Enrollment in MedDiet program. Concur 4910 and 4911.

4923  Nutr Car Proc IV  U  3

Nutrition care process: Pathophysiology; overview of medical treatment; nutrition assessment, diagnosis, intervention; monitoring and evaluation of nutritional care of infants, children, adolescents, and adults.
Prereq: A grade of B or above in 4910, 4911, and 4912, and enrollment in MedDiet. Concur: 4924 and 4925.

4924  Nutrition Care Process V  U  3

Nutrition care process: Principles of individual and group education and nutrition counseling as applied to responsibilities of the dietitian.

4925  Nutrition Care Process VI  U  2

Laboratory and experiential application of the nutrition care process for disorders of refeeding, renal, neurological, respiratory, critical care, cancer, AIDS, and inborn errors of metabolism.

5189  Dietetic Professional Practice I  U  G  1 - 12

Clinical experience in a specific health care system uses inpatient, outpatient, foodservice and community-based dietetic practice. The student works under the direction of Registered Dietitians and the supervision of medical dietetic faculty.
Prereq: Enrollment in MedDiet program. Repeatable to a maximum of 12 or hrs or 3 completions. This course is graded S/U.

5289  Dietetic Professional Practice II  U  G  1 - 12

Clinical experience in a specific health care system uses inpatient, outpatient, foodservice and community-based dietetic practice. The student works under the direction of Registered Dietitians and the supervision of medical dietetic faculty.
Prereq: Enrollment in MedDiet. Repeatable to a maximum of 12 or hrs or 3 completions. This course is graded S/U.

5389  Dietetic Professional Practice III  U  G  1 - 12

Field experience in a specific health care system uses inpatient, outpatient, foodservice and community-based dietetic practice. The student works under the direction of Registered Dietitians and the supervision of medical dietetic faculty.
Prereq: Enrollment in MedDiet. Repeatable to a maximum of 12 or hrs or 3 completions. This course is graded S/U.

5705  Nutrition and Physical Performance  U  G  2

Integration of nutrition, exercise physiology, and biochemistry. Use of nutrients as fuel, interaction between nutrients and exercise performance, assessment of energy expenditure and nutritional status, interactions among diet, exercise and health.
Prereq: 4609 (610). Not open to students with credit for 705. Cross-listed in HumnNtr.

5800  Advanced Nutrition Therapy in Complex Disease States  U  G  3

Study of nutrition therapy in disease: interrelationships of nutrition with biochemical, physiological and anatomical changes associated with acute, chronic and terminal illness, surgery and trauma.
Prereq: Credit in general chemistry, biology, physiology, nutritional assessment, nutritional therapy, or education and counseling, or permission of instructor. Not open to students with credit for 645 or 885.

5825  Advanced Practice in Nutrition Assessment and Counseling  U  G  3

In-depth analysis of the literature and current practice for use in nutrition assessment and counseling for both healthy and medically complex patients with acute, chronic and terminal illnesses.

5850  Advanced Management and Current Topics in Medical Dietetics  U  G  3

Emphasis on leadership skills for nutrition and dietetics in health care settings.
Prereq: 5189. Not open to students with credit for 645.

6001  Foundations in Research & Application I  G  1

An evidence based review of current topics in dietetics to support the integration of nutrition information, scientific evidence and key trends in healthcare to dietetics practice.
Prereq: Enrollment in MedDiet or HTHRScs graduate program. This course is graded S/U.

6002  Foundations in Research & Application II  G  1

An evidence based review of current topics in dietetics to support the integration of nutrition information, scientific evidence and key trends in healthcare to dietetics practice.
Prereq: Enrollment in MedDiet or HTHRScs graduate program. This course is graded S/U.

6003  Foundations in Research & Application III  G  1

An evidence based review of current topics in dietetics to support the integration of nutrition information, scientific evidence and key trends in healthcare to dietetics practice.
Prereq: Enrollment in MedDiet or HTHRScs graduate program. This course is graded S/U.

6100  Care and Management of Diabetes Mellitus  G  3

An in depth examination of etiology, epidemiology, and pathophysiology associated with diabetes and disease complications; pharmacological and non-pharmacological treatments; insulin, physical activity and nutritional pattern management; monitoring; symptom management and steps for prevention of secondary complications. Future research and application of evidence based care will be emphasized.
Prereq: Biochem or equivalent; or Anatomy and Physio; or HumnNtr 2310, MedDiet 3100, HTHRSc 4530, or equivalent; and Grad standing in MedDiet, HumnNtr, or other health related program.
### Medical Laboratory Science

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites/Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>4400</td>
<td>Introduction to the Medical Laboratory Environment</td>
<td>U 1</td>
<td>Prereq: Admission to Medical Laboratory Science program, or permission of instructor. Concur: 4405.</td>
</tr>
<tr>
<td>4405</td>
<td>Introduction to the Medical Laboratory Environment Laboratory</td>
<td>U 1</td>
<td>Prereq: Admission to Medical Laboratory Science program, or permission of instructor. Concur: 4405.</td>
</tr>
<tr>
<td>4500</td>
<td>Phlebotomy</td>
<td>U 1</td>
<td>The principles and practice of sample collection as it relates to clinical laboratory testing. Prereq: Admission to Medical Laboratory Science program, or permission of instructor. Concur: 4505.</td>
</tr>
<tr>
<td>4505</td>
<td>Phlebotomy Laboratory</td>
<td>U 1</td>
<td>The practice of sample collection for the clinical laboratory. Prereq: Admission to Medical Laboratory Science program, or permission of instructor. Concur: 4500.</td>
</tr>
<tr>
<td>5000</td>
<td>Medical Laboratory Microbiology I</td>
<td>U G 3</td>
<td>Introduce medical bacteriology in the aspects of fundamental epidemiology, disease transmission routes, clinical correlation of microbial diseases, as well as diagnostic tests to identify commonly encountered and clinically important bacteria. Prereq: Microbio 4000.01, and admission to Medical Laboratory Science program; or permission of instructor.</td>
</tr>
<tr>
<td>5000E</td>
<td>Medical Laboratory Microbiology I</td>
<td>U G 3</td>
<td>Introduce medical bacteriology in the aspects of fundamental epidemiology, disease transmission routes, clinical correlation of microbial diseases, as well as diagnostic tests to identify commonly encountered and clinically important bacteria. Honors-embedded course includes an infectious disease project. Prereq: Honors standing, Microbio 4000, and admission to Medical Laboratory Science Program; or permission of instructor.</td>
</tr>
<tr>
<td>5005</td>
<td>Medical Laboratory Microbiology I Laboratory</td>
<td>U G 2</td>
<td>Basic theory and application of clinical laboratory techniques used to identify bacteria pathogenic to humans. Prereq: 4405 and Microbio 4000, and admission to Medical Laboratory Science Program; or permission of instructor. Concur: MedLBS 4400. Not open to students with credit for MedTech 500.02.</td>
</tr>
<tr>
<td>5050</td>
<td>Medical Laboratory Hematology</td>
<td>U G 5</td>
<td>Theory and application of clinical laboratory procedures used to identify and evaluate the formed elements of the blood and hemostatic mechanisms in health and disease. Prereq: Enrollment in Medical Laboratory Science program, or permission of instructor.</td>
</tr>
<tr>
<td>5050E</td>
<td>Medical Laboratory Hematology</td>
<td>U G 5</td>
<td>Theory and application of clinical laboratory procedures used to identify and evaluate the formed elements of the blood and hemostatic mechanisms in health and disease. Prereq: Honors standing, and admission to Medical Laboratory Science program; or permission of instructor. Not open to students with credit for MedTech 510.01.</td>
</tr>
<tr>
<td>5055</td>
<td>Medical Laboratory Hematology Laboratory</td>
<td>U G 2</td>
<td>Theory and application of clinical laboratory procedures used to identify and evaluate the formed elements of the blood and hemostatic mechanisms in health and disease. Concur: 4400 and 4405, and admission to Medical Laboratory Science program, or permission of instructor.</td>
</tr>
<tr>
<td>5089</td>
<td>Clinical Practice in Medical Laboratory Science</td>
<td>U G 1 - 10</td>
<td>Application of medical laboratory technique under supervision in clinical laboratories or other non-hospital laboratory settings. Prereq: All courses required in the Medical Laboratory Science Certification curriculum except 5660 and 5350. Repeatable to a maximum of 20 cr hrs or 4 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>5100</td>
<td>Medical Laboratory Microbiology II</td>
<td>U G 3</td>
<td>Introduce medical mycology, parasitology, and virology in the aspects of fundamental epidemiology, disease transmission routes, clinical correlation of microbial diseases, as well as diagnostic tests to identify commonly encountered and clinically important viruses, fungi and parasites. Prereq: Admission to Medical Laboratory Science Program, or permission of instructor. Not open to students with credit for MedTech 525.01.</td>
</tr>
<tr>
<td>5105</td>
<td>Medical Laboratory Microbiology II Laboratory</td>
<td>U G 1</td>
<td>The theory and application of clinical laboratory procedures used to identify fungi, parasites, and viruses pathogenic to humans. Prereq: Admission to Medical Laboratory Science Program, or permission of instructor. Concur: 4400 and 4405.</td>
</tr>
<tr>
<td>5150</td>
<td>Medical Laboratory Microscopy</td>
<td>U G 2</td>
<td>Microscopic analysis of urine and other body fluids including correlational pathophysiology. Prereq: Admission to Medical Laboratory Science program, or permission of instructor.</td>
</tr>
<tr>
<td>5155</td>
<td>Medical Laboratory Microscopy Laboratory</td>
<td>U G 1</td>
<td>Microscopic analysis of urine and other body fluids. Prereq: MedLBS 4400, and admission to Medical Laboratory Science program; or permission of instructor. Not open to students with credit for MedTech 570.02.</td>
</tr>
<tr>
<td>5200</td>
<td>Medical Laboratory Immunology</td>
<td>U G 3</td>
<td>Theory, application, and correlation of clinical immunology knowledge and procedures used to evaluate the function of the immune system in health and disease. Prereq: Enrollment in Medical Laboratory Science program, or permission of instructor.</td>
</tr>
<tr>
<td>5200E</td>
<td>Medical Laboratory Immunology</td>
<td>U G 3</td>
<td>Theory, application, and correlation of clinical immunology knowledge and procedures used to evaluate the function of the immune system in health and disease. Prereq: Honors standing, and admission to Medical Laboratory Science program; or permission of instructor.</td>
</tr>
<tr>
<td>5205</td>
<td>Medical Laboratory Immunohematology</td>
<td>U G 1</td>
<td>Theory, application and correlation of clinical immunology knowledge and procedures. Prereq: 4400, and admission to Medical Laboratory Science program; or permission of instructor.</td>
</tr>
<tr>
<td>5250</td>
<td>Medical Laboratory Immunohematology</td>
<td>U G 4</td>
<td>The theory and practice of blood banking and transfusion medicine. Prereq: 5000, 5050, or 5200, and Enrollment in Medical Laboratory Science program; or permission of instructor.</td>
</tr>
<tr>
<td>5255</td>
<td>Medical Laboratory Immunohematology Laboratory</td>
<td>U G 2</td>
<td>Theory and practice of blood banking and transfusion medicine. Prereq: 4400, 5200, and 5205, and admission to Medical Laboratory Science program; or permission of instructor.</td>
</tr>
<tr>
<td>5300</td>
<td>Medical Laboratory Chemistry</td>
<td>U G 5</td>
<td>Principles in clinical chemistry with an emphasis on analysis and correlation of biochemical parameters with disease. Prereq: Chem 2510 and Biochem 4511; or BioPhrm 3311 and 3312; and enrollment in Medical Laboratory Science program; or permission of instructor.</td>
</tr>
<tr>
<td>5305</td>
<td>Medical Laboratory Chemistry Laboratory</td>
<td>U G 2</td>
<td>Applications of theory in quality control, method selection and evaluation, and diagnostic techniques in the clinical chemistry. Prereq: 4400; and Chem 2510 and Biochem 4511, or BioPhrm 3311; and admission to Medical Laboratory Science program; or permission of instructor.</td>
</tr>
<tr>
<td>5350</td>
<td>Professional Issues in Medical Laboratory Science</td>
<td>U G 3</td>
<td>Theory and application of professional, education, and management issues directed specifically towards Medical Laboratory Science. Prereq: Admission to Medical Laboratory Science program, or permission of instructor. Not open to students with credit for MedTech 620.</td>
</tr>
<tr>
<td>5400</td>
<td>Molecular Techniques in Medical Laboratory Science</td>
<td>U G 2</td>
<td>Theory and clinical applications of molecular techniques used in medical laboratory science. Prereq: 5000, 5050, 5100, and MolGen 4500, and admission to the Medical Laboratory Science Program; or permission of instructor. Prereq or concur: 5250 and 5300.</td>
</tr>
<tr>
<td>5405</td>
<td>Molecular Techniques in Medical Laboratory Science Laboratory</td>
<td>U G ¼</td>
<td>Theory and clinical applications of molecular techniques used in medical laboratory science. Prereq or Concur: 5250 and 5300, and enrollment in Medical Laboratory Science Program; or permission of instructor.</td>
</tr>
</tbody>
</table>
**Medical Laboratory Science**

**5600 Interdisciplinary Studies in Medical Laboratory Science**

The application of medical laboratory science in interdisciplinary settings.

Prereq: All Medical Laboratory Science certification track required courses except MedLS 5088. Repeatable to a maximum of 5 or hrs or 5 completions. This course is graded S/U.

**5690 Advanced Topics in Medical Laboratory Science**

Introduction to skills and resources necessary to enhance professional development and facilitate professional goal setting.

Prereq: Enrollment in Medical Laboratory Science program, or permission of instructor.

**5693 Individual Studies**

Guided study or individual readings, research, or experiences related to medical laboratory science.

Prereq: Admission to Medical Laboratory Science program, or permission of instructor. Repeatable to a maximum of 15 or hrs or 5 completions. This course is graded S/U.

**5890 Seminar in Medical Laboratory Science**

Introduction to the skills and resources necessary to enhance professional development and facilitate professional goal setting.

Prereq: Admission to Medical Laboratory Science program, or permission of instructor. Repeatable to a maximum of 5 or hrs or 5 completions.

**6885 Medical Laboratory Clinical Teaching Practicum**

Supervised experience in clinical education.

Prereq: Admission to Medical Laboratory Science program, or permission of instructor. Repeatable to a maximum of 5 or hrs or 2 completions. This course is graded S/U.

**6890 Medical Laboratory Graduate Seminar**

Investigation of current topics in medical technology.

Prereq: Admission to Medical Laboratory Science program, or permission of instructor. Repeatable to a maximum of 5 or hrs or 2 completions. This course is graded S/U.

**Medicine, College of**

**2000.21 Introduction to Medicine**

Designed for students interested in a career in medicine, this course will provide an overview of the field (knowledge and skill requirements), information about prerequisites and applying to medical school. Recommended prereq: Soph or Jr standing.

This course is graded S/U.

**2022 A Day in the Life: Undergraduate Physician Shadowing**

Deciding on whether medicine is the right career choice for someone interested in the health professions is challenging. This course is designed to provide a meaningful preceptorship experience with physicians in various disciplines in order to provide the student with a better understanding of the field. A better understanding of medicine is a crucial part of the application process to med school.

Prereq: Soph, Jr, or Sr standing. Preference given to those who completed MedColl 2000.21. This course is graded S/U.

**2220 Introduction to Biomedical and Healthcare Research**

The course will introduce undergraduates to the scope of research conducted by faculty, post-doctoral associates, medical and graduate students at The Ohio State University College of Medicine (OSUCOM).

**2225 Biomedical and Healthcare Research Journal Club**

The course is intended for undergraduates who wish to become familiar with current peer-reviewed biomedical and healthcare scientific literature. Students will learn to read, analyze, and summarize original scientific research articles.

**3998 Design, Analysis & Dissemination of Biomedical and Healthcare Research**

MedColl 3998 is a collaborative, experiential and data-driven course-based undergraduate research experience (CURE). Students will learn to understand the importance of collaboration and the iterative nature of biomedical and healthcare research.

**4126 Sexual Orientation, Gender Identity, and Health**

This course is an introduction to LGBT health, including a study of demographics, the background of key healthcare disparities/inequities, and concepts of the interaction between society and health of specific populations within the LGBT community.

Prereq: Soph, Jr, or Sr standing.

**4660E Primary Care Across Countries**

This participatory interdisciplinary seminar course will provide a broad perspective to those interested in various aspects of the delivery of primary care services. Specifically, the course will explore why access to high quality, consistent, and comprehensive primary care is central to achieving Health for All.

**4790 Exploring Medical Care Delivery and Education from a Global View**

The course provides an introduction to medical care delivery and health science education from a global perspective through intensive instruction and participation in a short-term education abroad program to the destination country.

**4998 Undergraduate Thesis**

The student will plan, complete, and defend an undergraduate honors thesis focused on psychiatry and behavioral health.

Prereq: Permission of instructor. This course is graded S/U.

**5000 Responsible Conduct of Research & Research Ethics**

Within research, ethics is considered to be the safeguard of both the researcher and the participant. This course will examine cases which hold to demonstrate this statement. It will analyze a complex system of policies and regulations that govern human subject research and scientific integrity. This class also satisfies the basic components of Responsible Conduct of Research (RCR) education.

This course is graded S/U.

**5881 Sustainable Health Care in the Current Climate Crisis**

This course will educate students about links between the climate crisis (CC) and health; foster engagement with local leaders addressing the CC; and encourage students to communicate effectively, becoming engaged citizens for sustainable health care. Introductory biology, chemistry, physics, and epidemiology may be helpful prior to enrollment.

**6100 Global Healthcare Innovation**

The course introduces graduate and professional students to the breadth and diversity of global healthcare innovations through guided discussion and case study application.

**6200 Global Health Literacy Practice, Policy and Research**

The course introduces graduate and professional students to health literacy practice, policy, and research across the globe. The course will provide an overview of population-based health literacy definitions and estimates from a global perspective.

**6300 Primary Care Delivery across the Globe**

The course provides a comprehensive overview of the multifaceted aspects of primary care delivery and financing throughout the world. The combined global impact of access to high quality and comprehensive primary care will be explored.

**7100 Teaching and Assessing Professionalism in the Biomedical Sciences**

This course is grounded in three paradigms of modern biomedical professionalism and focuses on designing teaching and assessments necessary for a developmental process that encourages the transformation from lay person to health care professional.

Prereq: Acceptance into the Master of Arts in Educational Studies, Biomedical Education specialization, or permission of instructor.

**7193 Individual Studies in Emergency Medicine**

Research on a basic science or clinical issue in Emergency Medicine (under faculty supervision).

Prereq: Permission of instructor, and good standing in the M.S. program in Medical Sciences. Repeatable to a maximum of 9 or hrs or 9 completions. This course is graded S/U.

**7200 Seminar: Employing Simulation in Medical Education**

This course is an exploration of simulation in competency based medical education. The knowledge, skills and attitudes developed in the course will enable clinical educators to facilitate the use of simulation in competency-based curricula.

Prereq: Enrollment in the Master of Arts in Educational Studies program, Biomedical Education specialization, or permission of instructor.

**7300 Seminar: Competency-Based Medical Education**

This course is an exploration of the seminal and more recent CBNE literature, the process of developing a CBNE curriculum and emerging issues related to CBNE. The knowledge, skills and attitudes developed in this course should enable clinician educators to participate in and facilitate the development of competency-based curricula.

**7400 Assessment For Competency Based Medical Education**

The knowledge, skills, and attitudes developed in this course will enable clinical educators to effectively design and implement assessments. Learners will make connections between established standards and assessment strategies to measure competency.

Prereq: Acceptance into the Master of Arts in Educational Studies, Biomedical Education specialization; or permission of instructor.

**7600 Introduction to Medicine**

An introductory course describing curriculum choices and requirements, support services and security procedures for new medical students in the College of Medicine.

Prereq: Enrollment in the College of Medicine, and first-semester medical student. This course is progress graded (S/U).

**7680 Independent Study in Geriatrics and Aging**

Opportunity for individualized study in the fields of aging, gerontology, and/or geriatrics. Allows for examination of a social, community, or organizational problem; or medical, public health, social welfare issue; etc. in the context of aging.

Prereq: Permission of instructor. Repeatable to a maximum of 3 or hrs. This course is graded S/U.

**7690 Graduate Career Independent Study**

Graduate Level independent study working closely with Dr. Kliatt on Mindfulness/Resilience/Yoga scholarly projects.

Prereq: Permission of instructor. This course is graded S/U.

**7693 Individual Studies**

Special studies in medicine; nature of life processes; foundational science; clinical science; pathophysiology and manifestation of disease. This is a supervised individualized program. Offered all semesters.

Prereq: Enrollment in MD program, and permission of instructor. Repeatable to a maximum of 32 or 2 completions. This course is progress graded (S/U).
Interprofessional Care for the Underserved Patient

A longitudinal course involving masters of social work, medicine, and pharmacy students in which teams of students will assume longitudinal care of under served patients at the Columbus Free Clinic. This course will help students develop practical competency in the interprofessional delivery of patient-centered longitudinal care, with emphasis on collaborative communication and problem solving.
Pre-req: Enrollment in College of medicine, pharmacy, or masters of social work. This course is graded S/U. Cross-listed in Phr.

Interprofessional Practicum in Clinical Care: Aging
Students experience the breadth, scope, and importance of clinical gerontology in an interdisciplinary team setting through leadership and perspectives of academic and community health and social service providers. This course is graded S/U.

Health Literacy
Examine and analyze issues of low health literacy, including populations at risk, research, measurement tools, writing in plain language; health communication techniques; and organizational approaches.
Pre-req: Grad standing in Health Sciences Professions, Literary Studies Specialization (ASC), Geriatrics Specialization (College of Medicine), or Teaching (College of Education & Human Ecology), or permission of faculty coordinator. This course is graded progress (S/U). Cross-listed in Pharmacy, Arts/Sci, Nursing, Medicine, and AllMed.

From the Page to the Bedside: Literature for Physicians
Study of literary works that engage with issues of illness, treatment, and medical ethics. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

Clinical Foundations I
Study of human development, biology, pathophysiology and behavior in a patient-oriented organ-system interdisciplinary manner. Developmental acquisition of the knowledge, skills and attitudes for an effective patient centered clinical encounter.
Pre-req: Enrollment in College of Medicine. Repeatable to a maximum of 6 completions. This course is progress graded (S/U).

Clinical Foundations II
Study of human development, biology, pathophysiology and behavior in a patient-oriented organ-system interdisciplinary manner. Developmental acquisition of the knowledge, skills and attitudes for an effective patient centered clinical encounter.
Pre-req: Enrollment in College of Medicine. Repeatable to a maximum of 6 completions. This course is progress graded (S/U).

Introduction to Applied Gerontology
Provides a foundation for the further study of aging and development of improved aging services. Physiological, cognitive, and social dimensions of aging are considered.
Pre-req: Not open to students with credit for 795. This course is graded S/U.

Issues and Trends in Aging
Study of national, state and local policy issues related to the older population. Problem-based approach is used to assess impact on current and future practices.
Pre-req: Not open to students with credit for 795. This course is graded S/U.

Clinical Applications
Foundational and clinical instruction in family medicine, internal medicine, neurology, obstetrics and gynecology, pediatrics, psychiatry, and surgery. Experiential learning in the inpatient, outpatient and community setting.
Pre-req: Enrollment in College of Medicine. Repeatable to a maximum of 6 completions. This course is progress graded (S/U).

Advanced Clinical Management
Development of the knowledge, skills, attitudes and behaviors that are required in rapid management and chronic care scenarios. Focus on team communications in life threatening situations and in coordination of care.
Pre-req: Enrollment in College of Medicine. Repeatable to a maximum of 6 completions. This course is progress graded (S/U).

Medieval and Renaissance Studies

Medieval Kyoto: Portraits and Landscapes
Exploration of cultural, political and economic life in Kyoto, Japan from ca. 900-1467 with emphasis on role of imperial court and rising warrior class. Taught in English. Not open to students with credit for Medieval 211. GE culture and ideas and diversity global studies course.

Gothic Paris: 1100-1300
The arts, architecture, poetry, history, music, theology, food, and fashion of Paris in 1100-1300, the age of Gothic cathedrals and the birth of the university.
Pre-req: Not open to students with credit for Medieval 215. GE culture and ideas and diversity global studies course.

Shakespeare’s London
The history, politics, and culture of London in the age of Shakespeare and the Tudors from the Protestant Reformation to the Great Fire (1666).
Pre-req: Not open to students with credit for Medieval 217. GE culture and ideas and diversity global studies course.

Medieval Russia
The diversity of medieval Russian culture focused on Moscow, Novgorod, and Kiev: religion, society, politics, art, and architecture.
Pre-req: Not open to students with credit for Medieval 213. GE culture and ideas and diversity global studies course.

The Medieval Jewish Experience
A survey of ten centuries of medieval Jewish culture from the rise of Islam to the death of Shabbetai Tzvi, the false Messiah (1676).
Pre-req: Not open to students with credit for Medieval 216, Hebrew 2216 (216), or JewishSt 2516. GE cultures and ideas and diversity global studies course. Cross-listed in Hebrew 2216 and JewishSt 2516.

Science and Technology in Medieval and Renaissance Culture
The history of science in the medieval and early modern world, including medicine, alchemy, optics, map-making, city-planning, and technology through images, texts, and material culture. GE cultures and ideas course.

Travel and Exploration
Intercultural contact between Europe (Spain, Portugal, and other nations) and the ‘New Worlds’ is explored through early modern narratives of travel, conquest, shipwrecks, and captivity.
Pre-req: Not open to students with credit for Medieval 218. GE culture and ideas and diversity global studies course.

Magic and Witchcraft in the Middle Ages and Renaissance
A study of the history of witchcraft and magic from 400 to 1700 C.E. within sociological, religious and intellectual contexts.
Pre-req: Not open to students with credit for Medieval 240. GE culture and ideas and diversity global studies course.

Holy Heroes: Saints’ Lives
Study of popular medieval narrative genre in its cultural context; development of ideals of sanctity in the lives of martyrs, confessors, holy fools, and ascetics. GE lit course.

Group Studies
Topic varies; special subjects not covered by regular courses. Repeatable to a maximum of 9 cr hrs.

Individual Studies
Students may register for individual directed study under this number for work not normally offered in courses.
Pre-req: Permission of instructor. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

Early Modern London: Urban Spaces and Popular Culture
Students explore the literature, urban space, and popular culture of London from the start of the Protestant Reformation in the 1520s up to the Great Fire of London in 1666 through varied primary sources and recent scholarship.

The Arthurian Legends
The medieval tales of King Arthur’s court and the Knights of the Round Table in history, myth, literature, art, and music.
Pre-req: 6 cr hrs in literature. Not open to students with credit for Medieval 504.

Undergraduate Research
Independent study in Medieval and Renaissance culture and civilization. Pre-req: 6 cr hrs in Medieval and Renaissance Studies at the 2000 level, and permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

Honors Research
Independent study in Medieval and Renaissance culture and civilization. Pre-req: Honors standing, and 6 or 9 cr hrs in Medieval and Renaissance Studies at the 2000 level, and permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

Research for Thesis
Independent study in Medieval and Renaissance culture and civilization. Pre-req: 6 cr hrs in Medieval and Renaissance Studies taken at the 2000 level, and permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

Honors Thesis Research
Independent study in Medieval and Renaissance culture and civilization leading to the completion of an undergraduate thesis.
Pre-req: Honors standing, 6 cr hrs in Medieval and Renaissance Studies at the 2000 level, and permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

Group Studies
Interdisciplinary group studies of selected topics in Medieval and Renaissance culture and civilization.
Pre-req: 6 cr hrs in MedRen at 2000 level or above. Repeatable to a maximum of 9 cr hrs.
320 Medieval and Renaissance Studies

5610 Manuscript Studies U G 3
An examination of the development of Latin book production from late antiquity to the Renaissance in the cultural context of the Middle Ages.
PreReq: Jr, Sr, or Grad standing; or permission of instructor. Not open to students with credit for Medieval 610.

5611 History of the Book Studies U G 3
A study of the construction and transmission of books during the era of the hand press (c. 1450-1800).
PreReq: Jr, Sr, or Grad standing, or permission of instructor. Not open to students with credit for Medieval 611.

5631 Survey of Latin Literature: Medieval and Renaissance U G 3
Survey of selected authors representative of the Medieval and Renaissance periods of Latin literature with discussion of historical background and critical approaches.
PreReq: Latin 1103, or equiv. Not open to students with credit for Medieval 631.

5695 Advanced Seminar in Medieval and Renaissance Studies U G 3
Interdisciplinary group studies of selected topics in Medieval and Renaissance culture and civilization, with a focus on research and writing skills. Capstone for MedRen majors.
PreReq: 6 credit hours in MedRen at the 2000 level or above. Repeatable to a maximum of 9 cr hrs.

7899 Medieval and Renaissance Colloquia G 1
Graduate students completing the CMRS Graduate Certificate and GIS participate in Medieval and Renaissance lecture series events, film series, and discussions with visiting faculty.
PreReq: Grad standing. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

8193 Individual Studies G 1 - 3
Students may register for individual directed study under this number for work not normally offered in courses.
PreReq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4998</td>
<td>Undergraduate Research in Microbial Infection and Immunity</td>
<td>U 1 - 5</td>
<td>This course provides an opportunity for individualized study in the fields of microbial infection and immunity. This research-focused course will allow students the opportunity to participate in a research environment under the supervision of one of the department's faculty members. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 3 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>4999</td>
<td>Undergraduate Research in Microbial Infection and Immunity - Thesis</td>
<td>U 1 - 5</td>
<td>This course provides an opportunity for individualized study in the fields of microbial infection and immunity. This research-focused course will allow students the opportunity to participate in a research environment under the supervision of one of the department's faculty members. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 3 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>4998H</td>
<td>Undergraduate Research in Microbial Infection and Immunity</td>
<td>U 1 - 5</td>
<td>This course provides an opportunity for individualized study in the fields of microbial infection and immunity. This research-focused course will allow students the opportunity to participate in a research environment under the supervision of one of the department's faculty members. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 3 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>4999H</td>
<td>Honors Undergraduate Research in Microbial Infection and Immunity - Thesis</td>
<td>U 1 - 5</td>
<td>This course provides an opportunity for individualized study in the fields of microbial infection and immunity. This research-focused course will allow students the opportunity to participate in a research environment under the supervision of one of the department's faculty members. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 3 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>5100</td>
<td>Current Topics in Virus-Host Interactions</td>
<td>U G 1</td>
<td>Weekly members of the Viruses and Emerging Pathogens thematic area of the OSU Infectious Disease Institute will present a seminar on their cutting-edge virology research followed by a discussion. Topics will include basic virology, antiviral immunity, vaccines, viral pathogenesis, and virus discovery. Prereq: Microbio 3704 or 5419, or permission of instructor. Repeatable to a maximum of 3 cr hrs.</td>
</tr>
<tr>
<td>5500</td>
<td>Departmental Seminar - Recent Discoveries in Immunology and Microbial Pathogenesis</td>
<td>U G 1</td>
<td>Students attend the Department of Microbial Infection and Immunity Seminar Series (MIISS) and Journal Club. The MIISS will host speakers on a biweekly basis throughout the semester. The course will educate students on searching and reading research articles and becoming familiar with the research of the MIISS seminar speaker. Students are expected to attend all seminars and journal club sessions. Repeatable to a maximum of 4 cr hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>5600</td>
<td>Pathobiology of Cystic Fibrosis</td>
<td>U G 3</td>
<td>The course will involve a combination of lecture presentations from the Instructors followed by student presentations and critical discussion of research papers that represent classic and recent advances in CF pathophysiology/pathobiology aligned with the lecture topic. Course open to graduate and advanced undergraduate students. Prereq: Jr standing or above.</td>
</tr>
<tr>
<td>7898</td>
<td>Graduate Research in Microbial Infection and Immunity</td>
<td>G 1 - 8</td>
<td>This course provides an opportunity for individualized study in the fields of microbial infection and immunity. This research-focused course will allow students the opportunity to participate in a research environment under the supervision of one of the department's faculty members. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs or 3 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>8010</td>
<td>Selected Topics in Advanced Immunology</td>
<td>G 2</td>
<td>Students will gain significant insight into immunological concepts of infectious diseases, transplant, cancer, mucosal immunity, allergy and autoimmunity. Two or three topics discussed in depth, topics alternate yearly. Prereq: 7010. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>2000</td>
<td>Introduction to Microbiology and Ecology Research</td>
<td>U 1½</td>
<td>This course introduces undergraduate students to the process of microbiology research and familiarizes students with ongoing Microbiology Research at The Ohio State University. Prereq: Biology 1113, 1113H, or equiv.</td>
</tr>
<tr>
<td>2100</td>
<td>Wild Yeast: Isolation to Fermentation</td>
<td>U 3</td>
<td>An introduction to yeast biology and microbiological techniques used in fermentation. Students will isolate an unknown yeast from the environment and characterize the growth behavior of the wild strains; use molecular biology and bioinformatics to determine the yeast species they have isolated; use the wild yeast to prepare a fermentation and characterize the finished ‘wild’ ferment. Prereq: Biology 1110 or 1113, and Chem 1110, 1210, or 1610; or permission of instructor.</td>
</tr>
<tr>
<td>2200</td>
<td>Genome Biology</td>
<td>U 1</td>
<td>DNA sequencing and analysis of bacterial genome. Special emphasis on mycobacteriology as part of the Howard Hughes Medical Institute National Genomics Research Initiative. Prereq: Biology 1113 with participation in the Howard Hughes Medical Institute National Genomics Research Initiative, or permission of instructor. Cross-listed in Biology 2200.</td>
</tr>
<tr>
<td>3194</td>
<td>Group Studies</td>
<td>U 1 - 3</td>
<td>Study of selected topics in microbial and cellular biology. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>3704</td>
<td>HIV: From Microbiology to Macrobiohistory</td>
<td>U 3</td>
<td>This course is an interdisciplinary exploration of HIV/AIDS, tracing the evolution of the virus at both the molecular level and within its global historical context. This course is team-taught by a virologist and a historian. Prereq or concur: English 1110.xx, or permission of instructor. Not open to students with credit for History 3704. Cross-listed in History.</td>
</tr>
<tr>
<td>3798.05</td>
<td>HIV in Context: East Africa</td>
<td>U 4</td>
<td>This course is an interdisciplinary exploration of the real world impact of- and response to HIV/AIDS. Prereq: English 1110.xx, or permission of instructor. Not open to students with credit for History 3798.05. GE historical study and education abroad course. Cross-listed in History.</td>
</tr>
</tbody>
</table>
4000.01 Basic and Practical Microbiology  U  4
Provides an understanding of microorganisms and their interaction with the human experience. Prereq: 3 cr hrs in Biology. Not open to students with credit for 4000 or 4000.02. GE nat sci bio course.

4000.02 Basic and Practical Microbiology  U  4
Provides an understanding of microorganisms and their interaction with the human experience. Online/in-person hybrid version of Microbiol 4000.01. Prereq: 3 cr hrs in Biology. Not open to students with credit for 4000 or 4000.01. GE nat sci bio course.

4100 General Microbiology  U  5
Fundamental principles of microbiology and the characteristics of microorganisms with emphasis on their structure, molecular biology, growth, classification, physiology, ecology, biotechnology, ecology, and applied microbiology. Prereq: Biology 1113 or 1113H. Prereq or concur: Chem 2510.

4110 Microbial Pathogenesis and Immunobiology  U  3
Provides an overview of microbe-host interactions with an emphasis on virulence mechanisms of bacterial pathogens, host infection routes, immune recognition of microbes, and the cellular and molecular effectors of the host immune system. Prereq: 4000 (509) or 4100 (520). Not open to students with credit for MicrBiol 524.01.

4120 Microbiological Physiology and Diversity  U  3
Principles of microbial growth, metabolism, microbial structure and function, and regulation of microbial metabolism. Prereq: 4100. Prereq or concur: Biochem 4511.

4130 Microbial Genetics  U  3
Structure, maintenance, expression, and exchange of genetic materials in microbial cells. Prereq: 4100, MolGen 4550, or 4560.

4140 Molecular Microbiology Laboratory  U  3
Advanced laboratory covering structure, maintenance, expression and exchange of genetic materials in microbial cells and methods in immunobiology. Prereq or concur: Micro 4130 (MicrBiol 581.01). Not open to students with credit for MicrBiol 581.02.

4150 Immunobiology Laboratory  U  3
This course will provide an introduction to the experimental approaches and laboratory methods commonly used in Immunobiology research. Topic areas include the purification, characterization and applications of antibodies, the characterization and responses of cells and organs of the immune system, and cell culture techniques for the use of eukaryotic cells in immunobiology research. Prereq: 4110, or 5122, or permission of the Instructor.

4193 Individual Studies  U  1 - 3
Study of selected topics in microbial and cellular biology. Outlined by instructor to meet individual student's needs. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

4194 Group Studies  U  1 - 3
Study of selected topics in microbial and cellular biology. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

4591S DNA Finger Printing Workshops  U  1
A service learning course whereby undergraduates mentor high school students in molecular biology workshops. Undergraduates present workshops in Columbus Public Schools. Sp Sem. Prereq: MolGen 4500 (500) or 4506 (606). Repeatable to a maximum of 3 cr hrs. This course is graded S/U. Cross-listed in MolGen and Biochem.

4797 Study at a Foreign Institution  U  1 - 18
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Prereq: Permission of department. Repeatable to a maximum of 36 cr hrs or 2 completions. This course is progress graded (S/U).

4798.01 Study Tour at a Domestic Institution  U  1 - 18
Specific content, location, semester(s) of offering, and prerequisites vary; contact department office for details. Prereq: Permission of department. Repeatable to a maximum of 36 cr hrs or 2 completions. This course is progress graded (S/U).

4798.02 Study Tour at a Foreign Institution  U  1 - 18
Specific content, location, semester(s) of offering, and prerequisites vary; contact department office for details. Prereq: Permission of department. Repeatable to a maximum of 36 cr hrs or 2 completions. This course is progress graded (S/U).

4998 Undergraduate Research in Microbiology  U  1 - 5
Laboratory and bioinformatics based research in all areas of microbiology. Prereq: Permission of Instructor. Repeatable to a maximum of 20 cr hrs or 8 completions. This course is graded S/U.

4998H Honors Research in Microbiology  U  1 - 5
Laboratory and bioinformatics based research in all areas of microbiology. Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 20 cr hrs or 8 completions. This course is graded S/U.

4999 Undergraduate Research in Microbiology-Thesis  U  1 - 5
Laboratory and bioinformatics based research culminating in an Honors thesis. Prereq: Honors standing, and Jr or Sr standing, and permission of instructor. Repeatable to a maximum of 10 cr hrs or 2 completions. This course is graded S/U.

5122 Immunology  U  G  3
Cellular and molecular properties of the immune system. Prereq: 4000 or 4110.

5129 Cellular and Molecular Biology of Pathogenic Eukaryotes  U  G  3
Cellular biology and molecular aspects of parasitism. Prereq: 4100, or permission of instructor. Not open to students with credit for MicrBiol 629.

5147 Eukaryotic Pathogens  U  G  3
Presentations will cover the medically important fungal and parasite pathogens and the virulence mechanisms employed at the host-pathogen interaction to overcome host defenses. Current and potential therapeutic strategies will also be discussed. Prereq: 4100 (520), or permission of instructor. Not open to students with credit for MicrBiol 647.

5149 Introductory Virology  U  G  3
Basic principles of virology with discussion of structures; virus-host cell interactions, detection, production, and control; animal bacterial, insect, and plant viruses used as examples. Prereq: 4100 (520). Not open to students with credit for MicrBiol 649.

5155 Environmental Microbiology  U  G  3
The role of microorganisms and underlying biological principles in elemental cycles and degradation of natural and man-made compounds. Prereq: Microbio 4000 (MicrBiol 509) or 4100 (520). Not open to students with credit for 665.

5160 Geomicrobiology  U  G  3
The role of microorganisms in shaping our environment through mineralogical and geochemical processes at both local and global scales, in the present day and over geologic time periods. Prereq: Jr or Grad standing in School of Earth Sciences, Department of Microbiology, Department of Civil, Environmental, and Geodetic Engineering, or School of Environment and Natural Resources. Not open to students with credit for EarthSc 5160. Cross-listed in EarthSc.

5161 Introduction to Computational Genomics  U  G  3
Application of computational tools to the analysis of microbial genomes and their gene products. Recommended background in basic molecular biology, genetics or biochemistry.

5270 Antibiotics and Microbial Natural Products  U  G  3
Microorganisms are responsible for producing a vast array of chemically diverse natural product small molecules. The unique biological and chemical properties of many of these small molecules have afforded many valuable applications throughout medicine, agriculture, and biotechnology. Here, we cover the biology behind the chemistry of these molecules and their role in human medicine. Prereq: A grade of C- or above in 4120, Biochem 5614, or Pfr 4000; or Grad standing; or permission of instructor. Not open to students with credit for Pfr 5270. Cross-listed in Pfr.

5536 Food Microbiology Lecture  U  G  3
Microorganisms in relation to the production, processing, and handling of food with emphasis on food transmitted pathogens and minimizing public health risks. Prereq: 4000 (509), 4100 (520), or permission of instructor. Not open to students with credit for MicrBiol 636.01 or FDSCTE 636.01. Cross-listed in FDSCTE 5536.

5546 Food Microbiology Laboratory  U  G  3
Laboratory training for determining the microbiological safety and quality of food with emphasis on handling pathogens and observing analyst's safety. Prereq: 5536 (636.01) or FDSCTE 5536 (636.01). Not open to students with credit for 636.02 or FDSCTE 636.02. Cross-listed in FDSCTE 5546.

5800 Organelle Biology  U  G  2
Structure and function of plastids and mitochondria, apicoplasts and hydrogenosomes. Prereq: MolGen 4500 (500), 4500E, or 4608 (606), or permission of instructor. Cross-listed in MolGen.

6010 Principles of Microbiology  G  2
Principles of Microbiology: research practices, conduct and expectations for graduate students, and an introduction to microbiology through landmark papers in the field. Prereq: Grad standing, or permission of instructor.
Microbiology

6020 Microbial Physiology and Biochemistry

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>G 3</td>
<td>Principles of microbial growth, metabolism, microbial structure and function, regulation of microbial metabolism and an introduction to the diversity of microorganisms. Prereq: Grad standing, or permission of instructor. Not open to students with credit for MicroBiol 661 or 720.</td>
</tr>
</tbody>
</table>

6080 Advanced Microbial Genetics

<table>
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<tr>
<th>Credit Hours</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>G 3</td>
<td>Molecular mechanisms of gene regulation and gene transfer in prokaryotes. Prereq: 4130, or permission of instructor. Not open to students with credit for MicroBiol 680.</td>
</tr>
</tbody>
</table>

6155 Topics in Microbiome Sciences

<table>
<thead>
<tr>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>G 3</td>
<td>This 'Topics in Microbiome Sciences' course seeks to provide foundational knowledge on select topics relevant for studying microbes in an ecosystem context for environments ranging from the oceans and soils to the human and biocontrollers. Prereq: Grad standing, or permission of instructor. Not open to students with credit for MicroBiol 680.</td>
</tr>
</tbody>
</table>

6789 Research Principles and Techniques in Microbiology

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>G 1 - 8</td>
<td>Research principles and techniques in microbiology for MS and PhD students in microbiology: laboratory rotations. Prereq: Permission of instructor. Repeatable to a maximum of 25 cr hrs or 5 completions. This course is graded S/U.</td>
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</tbody>
</table>

6790 Scientific Writing

<table>
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<tr>
<th>Credit Hours</th>
<th>Description</th>
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<tbody>
<tr>
<td>G 2</td>
<td>A successful researcher is someone who knows both how to do their science, and also how to effectively communicate their findings through the written and spoken word. The purpose of this course is to introduce students to the processes involved in professional or scholarly publication. Prereq: Permission of instructor. Not open to students with credit for Chem 6790. Cross-listed in Chem.</td>
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</table>

7010 Cellular and Molecular Immunology

<table>
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<tr>
<th>Credit Hours</th>
<th>Description</th>
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<tbody>
<tr>
<td>G 3</td>
<td>Cellular and molecular mechanisms of immune response, cell recognition and communication, molecular biology of cell recognition structures, cytokines, and effector mechanisms. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 701 or MVIMG 7010 (701). Cross-listed in MVIMG.</td>
</tr>
</tbody>
</table>

7020 Physiology Meets Pathogenesis

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>Description</th>
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<tbody>
<tr>
<td>G 2</td>
<td>The physiological basis for growth and virulence of microbes in the host. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 702.</td>
</tr>
</tbody>
</table>

7060 Advanced Topics in Molecular Microbiology

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>G 2</td>
<td>Specialized metabolic pathways, regulation and control mechanisms, and bacterial biochemistry. Prereq: 6020, or permission of instructor. Not open to students with credit for 760.</td>
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</table>

7193 Individual Studies

<table>
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<tr>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>G 1 - 5</td>
<td>Enrollment in non-thesis master's program and written permission of instructor. Not open to thesis MS candidates or PhD candidates. Outlined by instructor to meet individual student's needs. Prereq: Permission of instructor. Not open to Plan A thesis MS or PhD candidates. Repeatable to a maximum of 30 cr hrs or 6 completions. This course is graded S/U.</td>
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</table>

7536 Advanced Food Microbiology I

<table>
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<tr>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>G 2</td>
<td>Food borne microbes of significance to health and industrial applications, metabolic pathways, enabling these organisms survival in the environment and hosts, approaches for studying food-borne microorganisms. Prereq: 5536 (Microb 636.01) or FiDScTe 5536 (636.01), and Microbio 4100 (Microb 520); or permission of instructor. Not open to students with credit for Microb 726 or FiDScTe 736 (736). Cross-listed in FiDScTe.</td>
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</table>

7600 First Year Student Orientation

<table>
<thead>
<tr>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>G 1</td>
<td>Orientation for first-year students in Microbiology and partner graduate programs; lectures on topics important for successful graduate experience; training in presenting scientific work; training in research ethics. Prereq: Not open to students with credit for OSBP 7600 (760), MCDBio 7600, MoGen 7600, or Biophys 7600. This course is graded S/U. Cross-listed in Biophys, MCDBio, MoGen, and OSBP.</td>
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7724 Molecular Pathogenesis

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<tr>
<th>Credit Hours</th>
<th>Description</th>
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<tbody>
<tr>
<td>G 3</td>
<td>In-depth presentation and discussion of the molecular and cellular mechanisms of pathogenesis, emphasizing current research in the field. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 724 or IBQP 7240 (724). Cross-listed in IBQP 7240.</td>
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</table>

7899 Microbiology Colloquium

<table>
<thead>
<tr>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>G 1</td>
<td>Microbiology Colloquium. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.</td>
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</table>

7998 Research in Microbiology

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>Description</th>
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<tbody>
<tr>
<td>G 1 - 8</td>
<td>Research in microbiology for graduate students prior to completing the Candidacy Examination. Prereq: Permission of instructor. Not open to students who have passed the Candidacy Examination. Repeatable to a maximum of 60 cr hrs or 12 completions. This course is graded S/U.</td>
</tr>
</tbody>
</table>

7999 Research in Microbiology MS Thesis

<table>
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<tr>
<th>Credit Hours</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>G 1 - 8</td>
<td>Research in Microbiology toward completion of a MS thesis. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs or 3 completions. This course is graded S/U.</td>
</tr>
</tbody>
</table>

8050 The RNA World

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>Description</th>
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<tbody>
<tr>
<td>G 2</td>
<td>Evolution, structure and function of RNA with topics including RNA catalysis, RNA editing and modification, ribosomes, ribozymes, tRNA, telomerase, tmRNA, and alternative translation strategies. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 650.</td>
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8161 Microbiome Informatics

<table>
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<tr>
<th>Credit Hours</th>
<th>Description</th>
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<tbody>
<tr>
<td>G 3</td>
<td>Microbes are major players across diverse ecosystems including humans, soils, and the oceans. Through concept-introducing lectures, hands-on practical exercises and a semester-long group research project, this course will introduce the student to modern approaches for interpreting sequence datasets to improve understanding of microbes and their viruses in complex communities. Prereq: 5161, 6155, or permission of instructor.</td>
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</table>

8193 Individual Studies

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<tr>
<th>Credit Hours</th>
<th>Description</th>
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<tbody>
<tr>
<td>G 1 - 5</td>
<td>Selected topics in microbiology outlined by instructor to meet individual student's needs. Prereq: Permission of instructor. Not open to MS candidates. Repeatable to a maximum of 30 cr hrs or 6 completions. This course is graded S/U.</td>
</tr>
</tbody>
</table>

8194 Group Studies

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>Description</th>
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<tbody>
<tr>
<td>G 1 - 5</td>
<td>Group work on special topics in microbial or cellular biology. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 3 completions.</td>
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</table>

8999 Seminar in Microbiology

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<tr>
<th>Credit Hours</th>
<th>Description</th>
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<tbody>
<tr>
<td>G 1</td>
<td>Seminar in Microbiology. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.</td>
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</table>

8999 Research in Microbiology

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>Description</th>
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<tbody>
<tr>
<td>G 1 - 8</td>
<td>Research for doctoral dissertation only. Prereq: Permission of instructor. Repeatable. This course is graded S/U.</td>
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</table>

Military Science

1100.01 Boot Camp Style Physical Fitness Training

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>Description</th>
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<tbody>
<tr>
<td>U 1</td>
<td>Introduction to U.S. Army &quot;Boot Camp&quot; style physical fitness training. Teamwork and motivation combine with U.S. Army instructors to generate tough, non-nonsense, non-stop mental and physical training. Au, Sp Sems. Prereq: Students must have a physician complete a Department of the Army DA Form 345-R, Medical Fitness Statement for Enrollment in Basic Course, Senior ROTC, in order to participate in any Army ROTC physical activity. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.</td>
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1100.02 Basic Mountaineering Course

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<tr>
<th>Credit Hours</th>
<th>Description</th>
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<tbody>
<tr>
<td>U 1</td>
<td>Training in the fundamental knowledge and skills required to successfully conduct basic U.S. Army mountaineering and rappelling. Students must sign waivers provided by the OSU Area Recreation Center (ARC) and the U.S. Army Cadet Command. Au, Sp Sems. Prereq: Students must have a physician complete a Department of the Army DA Form 345-R, Medical Fitness Statement for Enrollment in Basic Course, Senior ROTC, students must sign waivers provided by the OSU Area Recreation Center (ARC) and the U.S. Army Cadet Command. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.</td>
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1101 Introduction to the Army and Critical Thinking

<table>
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<tr>
<th>Credit Hours</th>
<th>Description</th>
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<tbody>
<tr>
<td>U 1</td>
<td>Introduction to the personal challenges and competencies that are critical for effective leadership. Students learn how developing time and stress management skills, and physical fitness relate to leadership and the Army Profession. No military obligation is required. This course is open to all OSU students. Prereq: All Cadets enrolled in a Military Science course must have a physician complete a Department of the Army DA Form 345-R, Medical Fitness Statement for Enrollment in Basic Course, Senior ROTC, in order to participate in any Army ROTC physical activity including: marching, laboratory, and field training exercises.</td>
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1102 Introduction to the Profession of Arms

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<tr>
<th>Credit Hours</th>
<th>Description</th>
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<tbody>
<tr>
<td>U 1</td>
<td>The organization and branches of the Army, basic military skills, and fundamentals of leadership. Students explore dimensions of leadership values, attributes, skills, and actions in the context of Squad level tactics. No military obligation is required. This course is open to all OSU students. Prereq: All Cadets enrolled in a Military Science course must have a physician complete a Department of the Army DA Form 345-R, Medical Fitness Statement for Enrollment in Basic Course, Senior ROTC, in order to participate in any Army ROTC physical activity including: marching, laboratory, and field training.</td>
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2001 Leadership and Decision Making

<table>
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<tr>
<th>Credit Hours</th>
<th>Description</th>
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<tbody>
<tr>
<td>U 2</td>
<td>This course is designed to develop individual leadership skills and inspire self-confidence through experiential learning activities, using critical reasoning and problem solving skills, while applying communication and conflict resolution skills. Prereq: All Cadets enrolled in Military Science courses must have a physician complete a Department of the Army DA Form 345-R, Medical Fitness Statement for Enrollment in Basic Course, Senior ROTC, in order to participate in any Army ROTC physical activity including: physical fitness training, laboratory, and field exercise training.</td>
</tr>
</tbody>
</table>
2002 Army Doctrine and Team Development  U  2
The course places emphasis on teamwork in developing effective leadership skills, self confidence, critical reasoning, problem solving skills, and applying communication and conflict resolution skills during training exercises. Sp Sem. Prereq: All students are eligible for the lecture portion of Military Science courses, however, students who wish to participate in any Army ROTC physical activity including: physical fitness training, laboratory, and field training exercise, must have a physician complete a Department of the Army DA Form 345-R, Medical Fitness Statement prior to participating in the physically demanding portions.

301 Training Management and the Warfighting Functions  U  3
This is an academically challenging course where students will study, practice, and apply the fundamentals of Army leadership, Officer corps, Army values and ethics, personal development, and small unit tactics at the team and squad level. Prereq or concur: 2002, or permission of instructor.

302 Applied Leadership in Small Unit Operations  U  3
Emphasis on leadership, planning, coordinating, navigating, motivating and leading a team or squad in execution of a tactical mission during a classroom Practical Exercise, a Leadership Lab, or a Situational Training Exercise in a field environment. Prereq: 3001, or permission of instructor. All Cadets enrolled in Military Science course must have a physician complete a Department of the Army DA Form 345-R, Medical Fitness Statement for Enrollment in Basic Course, Senior ROTC, in order to participate in any Army ROTC physical activity including: marching, laboratory, and field training exercises.

4001 The Army Officer  U  3
Practical application of adaptive leadership that transitions the focus of student learning from being trained, mentored and evaluated as an MS III Cadet to learning how to train, mentor and evaluate underclass Cadets. Prereq: 3002, or permission of chairman. All Cadets enrolled in a Military Science course must have a physician complete a Department of the Army DA Form 345-R, Medical Fitness Statement for Enrollment in Basic Course, Senior ROTC. In order to participate in any Army ROTC physical activity including: marching, laboratory, and field training exercises.

4002 Company Grade Leadership  U  3
Exploration of the dynamics of leading in the complex situations of current military operations. Students will examine the differences in customs, military law, principles of war, and rules of engagement in the face of international terrorism. Prereq: 4001, or permission of chairman. All Cadets enrolled in a Military Science course must have a physician complete a Department of the Army DA Form 345-R, Medical Fitness Statement for Enrollment in Basic Course, Senior ROTC. In order to participate in any Army ROTC physical activity including: marching, laboratory, and field training exercises.

4193.01 Military Science Individual Studies  U  1
This course is for Army ROTC Scholarship Cadets who have completed all Military Science courses required for commissioning but who still need to enroll in other university courses for graduation. Cadets must confer with the department and Admissions Officer to discuss the courses in which they are interested. Prereq: 4002, or permission of instructor. Not open to students with credit for 4193. This course is graded S/U.

4193.02 Cadet Advance Camp  U  1
This is a one credit-hour course to prepare Cadets for Cadet Advance Camp. Course is not repeatable. Prereq or concur: 3001.

4193.03 Review of Army Literature  U  1
Cadets will study a topic based on the recommended reading list from U.S. Army Cadet Command. Cadets also have the option of choosing an article from a recent journal of The US Army War College Quarterly-Parameters. The journal can be downloaded from the web. Selected readings from Cadet Command or Parameters must be reviewed with the instructor. Prereq: 4002, and permission of instructor. This course is graded S/U.

Modern Greek

1101 Elementary Modern Greek  U  5
Introduces students to the language, covering the basic skills of reading, understanding and writing (Autumn semester). Not open to native speakers, or to students with 3 or more years of study in high school, except by permission of instructor. Prereq: Not open to students with credit for 102. This course is available for EM credit. GE for lang course.

1102 Intermediate Modern Greek I  U  5
Offers intensive study of grammar and syntax, with extensive oral and written practice (Spring semester). Not open to native speakers of this language through regular course enrollment or EM credit. Prereq: 1101. Not open to students with credit for 103. This course is available for EM credit. GE for lang course.

1103 Intermediate Modern Greek II  U  3
Continues the 1101-1102 sequence. The course helps students expand their vocabulary and improve their fluency in speaking the language (Autumn only). Not open to native speakers of this language through regular course enrollment or EM credit. Prereq: 1102. Not open to students with credit for 104. This course is available for EM credit. GE for lang course.

2000 Athens: The Modern City  U  3
The history and culture of modern Athens. The way events such as wars and migration transformed the urban fabric of the city. Prereq: Not open to students with credit for 200. GE cultures and ideas and diversity global studies course.

2100 Greece and Beyond: The Crossing of Borders Through Film  U  3
Examines cross-cultural encounters between the Greeks and other peoples as depicted in film. GE culture and ideas and diversity global studies course.

2193 Individual Studies  U  1 - 3
Individual studies. Prereq: 1003 or equiv. or permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions. This course is graded S/U.

2194 Group Studies  U  1 - 3
Topics in Modern Greek studies. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 9 completions.

2240 Travels to Greece: The Search for a Cultural Ideal  U  3
Starting in antiquity and ending in today's mass tourism and global migration, the course will introduce students to the phenomenon of travels to Greece. It will examine the reasons people have gone to Greece over the ages and why they have turned Greece into travel ideal. GE cultures and ideas course.

2367 Reading and Writing About Issues in Greek-American Society and Culture  U  3
Exploration of representative features of Greek-American culture and reflection on the social diversity in the United States. Prereq: English 110, 111 or equiv. Soph standing. Not open to students with credit for 367. GE writing and comm course: level 2 and diversity soc div in the US course.

2410 Culture of Contemporary Greece  U  3
A general survey of socio-cultural trends and issues in modern Greece through close analysis of literature and the other arts. Prereq: Not open to students with credit for 241. GE cultures and ideas and diversity global studies course.

2680 Folklore of Contemporary Greece  U  3
A general survey of socio-cultural trends and issues in modern Greece through close examination of ethnographies and other folk expressions. Prereq: Not open to students with credit for 268. GE VPA and diversity global studies course.

3570 CLLCC Radio  U  1 - 3
Student partners prepare 3 target language broadcasts, each 1 hour in length. Broadcasts stream live over the Internet, then become podcast for public use. Student "DJ's" conduct target language research on radio broadcast history and at least 15 thematic topics and related music that interests them. Students choose their music and content with approval and guidelines, then produce scripts. Prereq: Permission of instructor.

3710 Modern Greek Literature in Translation  U  3
Review of the Modern Greek literary tradition of the last two centuries through representative works and from a theoretical perspective. Prereq: Jr or Sr standing. Not open to students with credit for 371. GE lit and diversity global studies course.

4001 Advanced Modern Greek I  U  3
Introduces journalism, literary prose, and media. Students practice discussion and composition. Prereq: Not open to students with credit for 402. GE VPA and diversity global studies course.

4002 Advanced Modern Greek II  U  3
Completes the language sequence. Students develop translation skills and continue practicing conversation and composition. Prereq: 4001. Not open to students with credit for 402.

4998 Research  U  1 - 3
A program of study arranged for each student. Prereq: Sr standing, and permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

4998H Honors Research  U  1 - 3
A program of study arranged for each student. Prereq: Honors standing, and Sr standing, and permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

4999 Thesis Research  U  1 - 6
A program of study leading to the writing of a thesis and an oral defense that will integrate the experience of earlier courses in Modern Greek. Prereq: Jr standing or above, and enrollment in Modern Greek Major; or permission of instructor or department. Repeatable to a maximum of 18 cr hrs or 3 completions. This course is graded S/U.
### Molecular Genetics

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit</th>
<th>Grading</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>4500E</td>
<td>General Genetics</td>
<td>U</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>4999H</td>
<td>Honors Thesis Research</td>
<td>U</td>
<td>1-6</td>
<td></td>
</tr>
<tr>
<td>5000</td>
<td>Modern Greek Language and Literature</td>
<td>U</td>
<td>G</td>
<td>3</td>
</tr>
<tr>
<td>5193</td>
<td>Individual Studies</td>
<td>U</td>
<td>G</td>
<td>1-3</td>
</tr>
<tr>
<td>5194</td>
<td>Group Studies</td>
<td>U</td>
<td>1-3</td>
<td></td>
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<tr>
<td>5797</td>
<td>Study at a Foreign Institution</td>
<td>U</td>
<td>1-9</td>
<td></td>
</tr>
<tr>
<td>8999</td>
<td>Dissertation Research in Modern Greek</td>
<td>U</td>
<td>G</td>
<td>1-3</td>
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</table>

**Molecular Genetics**

#### 1101 Introduction to Plant Biology: Plants, People, and the Environment

Plants and their relationships to humans and the biosphere; plant structure and function, growth and development; plant genetics and biotechnology; plant diversity and evolution; practical and economic uses of plants.

Prereq: Not open to students with credit for Biology 1101 (101), 1113 (113), 1113H (115H), 1114 (114), 1114H (116H), PntBio 101, or 102. This course is available for EM credit. GE nat sci bio course. NS Admis Cond course.

#### 2220H Introduction to Molecular Life Sciences: Research Opportunities and Career Options

Faculty presentations and facility tours to introduce first- and second-year students to research opportunities in molecular life sciences.

Prereq: Honors standing, Biology 1101 (101), 1113 (113), or 1113H (115H), and 3 additional cr hrs in Biological Sciences; permission of instructor. Not open to students with credit for 220H.

#### 2690 Genes and Society

This team taught, interdisciplinary course (crosslisted as PHILDS 2690) provide science-based exposure to topics in classical and modern genetics but with an emphasis on social and ethical issues. Together we will discuss what genes are, and how they work, and how your genome influences traits and behaviors in the context of social beliefs and philosophy.

Prereq: Not open to students with credit for PntBio 2690. Cross-listed in Phios.

#### 3300 General Plant Biology

Plant structure and function; growth and development; diversity, reproduction, and evolution of lower and flowering plants; people; the biosphere, and plant diversity.

Prereq: Biology 1101 (101), 1113 (113), or 1113H (115H). Not open to students with credit for PntBio 300 or HCS 300. GE nat sci bio course.

#### 3436 Introductory Plant Physiology

Topics in plant physiology at the introductory level: diffusion, transpiration, water stress, translocation, photosynthesis, plant growth hormones, tropisms, flowering, and fruit development.

Prereq: Biology 1113 (133), 1113H (115H), 1114 (114), 1114H (116H), and 6 cr hrs in Chem. Not open to students with credit for PntBio 436, 630 or 631.

#### 4500.01 General Genetics

The principles of genetics, including molecular genetics, transmission genetics of prokaryotes and eukaryotes, developmental and non-chromosomal genetics, recombinant DNA and genomics, and the genetics and evolution of populations. Taught in person.

Prereq: Biology 1101, 1113, or 1113H, and 3 additional sem cr hrs in Biological Sciences. Not open to students with credit for 4500, 4500.02, or 4606.

#### 4500.02 General Genetics

The principles of genetics, including molecular genetics, transmission genetics of prokaryotes and eukaryotes, developmental and non-chromosomal genetics, recombinant DNA and genomics, and the genetics and evolution of populations. Taught online.

Prereq: Biology 1101, 1113, or 1113H, and 3 additional sem cr hrs in Biological Sciences. Not open to students with credit for 4500, 4500.01, or 4606.
5300  Cancer Genetics                        U  G  3
Students will learn about the genetic evolution of human cancer. Specifically, the hallmarks of cellular transformation and tumor progression will be discussed. Students will be introduced to modern approaches aimed at targeting genetic aberrations in cancer cells. Includes hands-on training in the use of online databases of cancer genetics.
Prereq: A grade of C- or above in 4606 or 4500; or Grad standing.

5601  Eukaryotic Molecular Genetics Lab     U  G  3 - 4
Current laboratory techniques used in the genetic, cellular, and molecular analyses of yeast, Drosophila, and other model systems.
Prereq: 4500 or 4606; or permission of instructor.

5602  Eukaryotic Cell and Developmental Biology Laboratory U  G  3 - 4
Laboratory course emphasizing techniques and methods central to cell and developmental biology of eukaryotes.
Prereq: 4500 or 4606; or permission of instructor.

5607  Cell Biology                           U  G  3
Analysis of the structure and function of animal and plant cells and their components, stressing molecular genetic and biochemical approaches.
Prereq: 4500 (500), 4500E, or 4606 (606). Not open to students with credit for 607, 607H, 5607E.

5607E  Cell Biology                           U  G  4
Analysis of the structure and function of animal and plant cells and their components, stressing molecular genetic and biochemical approaches. Embedded Honors includes a recitation that explores cell biology topics from the primary literature.
Prereq: 4500 (500) or 4606 (606). Not open to students with credit for 5607 (607) or 5607H (607H).

5608  Genes and Development                 U  G  3
Analysis of animal and plant development using modern genetic approaches.
Prereq: 4500 (500), 4500E, or 4606 (606). Not open to students with credit for 5608E or 608.

5608E  Genes and Development                 U  G  4
Analysis of animal and plant development using modern genetic approaches. Honors Embedded includes a faculty led recitation that explores developmental biology topics from the primary literature.
Prereq: Honors standing, and 4500 (500) or 4606 (606); or permission of instructor. Not open to students with credit for 4608 (608).

5623  Genetics and Genomics                 U  G  2
A survey and discussion of genomic studies applied to fungal, animal, or plants systems.
Prereq: 4500 (500), 4606 (606), 5607 (607), or 5608 (608), or Grad standing. Not open to students with credit for PlntBio 623.

5630  Plant Physiology                       U  G  3
Advanced study of plant physiology; regulation of plant growth and development, hormones, and stress physiology.
Prereq: 3300, 4500 (500), 4506 (606), PlntBio 300, HCS 300, Biology 1114 (114), 1114H (114H), or permission of instructor. Not open to students with credit for PlntBio 630 or 631.

5632  Insect Molecular Genetics              U  G  2
Structure, genetics, and methodology of insect genes and genomes.
Prereq: 4500 (500) or 4606 (606). Not open to students with credit for 632 or Entomol 632.

5643  Plant Anatomy                          U  G  3
The structure, function, and development of cells, tissues, and organs of vascular plants.
Prereq: 3300, Biology 1114 (114), 1114H (114H), or permission of instructor. Not open to students with credit for 5643.

5645  Quantitative, Population, and Evolutionary Genetics U  G  2
The genetics of populations, including quantitative, population, and evolutionary genetics.
Prereq: 4500 (500) or 4606 (606). Not open to students with credit for 640 or EED2E 640.

5650  Analysis and Interpretation of Biological Data U  G  3
Methods of analyzing biological data including: sampling, descriptive statistics, distributions, analysis of variance, inference, regression, and correlation. Emphasizes practical applications of statistics in the biological sciences.
Prereq: Math 1149 or 1150 (150) or equiv, and 10 semester cr hrs at the 3000-level (or level in the quarter system) or above in Agricultural or Biological Sciences. Not open to students with credit for 650.

5700  Systems of Genetic Analysis            U  G  3
Analysis of select fungal, invertebrate, vertebrate, and plant model systems used in modern experimental genetics.
Prereq: 4500, 4606, 5607 (607), or 5608 (608), or Grad standing, or permission of instructor. Not open to students with credit for 700.

5701  DNA Transactions and Gene Regulation  U  G  3
Understanding mechanisms of DNA replication, DNA repair and recombination, transcription, translation, regulation of gene expression, and the experimental approaches to these topics.
Prereq: 4500, 4606, Biochem 4511, or equiv., or Sr standing; or Grad standing; or permission of instructor. Not open to students with credit for Biochem 5701. Cross-listed in Biochem.

5705  Advances in Cell Biology               U  G  2
An advanced study of selected key areas of research in eukaryotic cell biology.
Prereq: A grade of B- or above in 5607, or Grad standing, or permission of instructor.

5715  Developmental Genetics                 U  G  2
An advanced study of the regulation of developmentally significant genes and cellular interactions involved in differentiation and pattern formation in invertebrate, vertebrate, and plant model organisms.
Prereq: A grade of B- or above in 5608, or Grad standing, or permission of instructor.

5735  Plant Biochemistry                     U  G  3
Focus on biochemical processes unique to plants, including photosynthesis, respiration, carbon fixation and carbohydrate metabolic networks, cell wall and lipid synthesis, and nitrogen and sulfur assimilation for macromolecular synthesis.
Prereq: Biochem 4511 (511), or equiv. Not open to students with credit for PlntBio 735 or 736. Cross-listed in Biochem.

5795  Special Topics in Molecular Genetics   U  G  1 - 3
Lecture/discussion in a seminar format of publications, current research, or research techniques in the areas of cell biology, development, genetics, genomics, molecular biology, or plant biology.
Prereq: Permission of instructor. Repeatable to a maximum of 10 or cr hrs or 10 completions.

5796  Current Topics in Signal Transduction  U  G  1 - 2
A discussion of signal transduction mechanisms in animal, fungal, and plant systems.
Prereq: Biochem 5101 (501), 5607 (607), 5608 (608), 5607E, 5608E, 607H, BioChem 4511 (511) or equiv., or Grad standing, or permission of instructor. Not open to students with credit for PlntBio 796.

5797  Study at a Foreign Institution        U  G  1 - 15
Specific content, location, semester(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable to a maximum of 15 or cr hrs or 3 completions.

5798  Study Tour: Domestic                   U  G  1 - 15
Specific content, location, semester(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable to a maximum of 15 or cr hrs or 3 completions. This course is graded S/U.

5800  Organelle Biology                     U  G  2
Structure and function of plastids and mitochondria, apicoplasts and hydrogenosomes.
Prereq: 4500 (500), 4500E, or 4606 (606), or permission of instructor. Cross-listed in MicrBio.

7600  First-Year Student Orientation        G  1
Orientation for first-year students in Molecular Genetics and partner graduate programs; lectures on topics important for successful graduate experience; training in presenting scientific work; training in research ethics.
Prereq: Not open to students with credit for OSBP 7600 (760), MCDBio 7600, Biophys 7600, or MicrBio 7600. This course is graded S/U. Cross-listed in OSBP, MCDBio, Biophys, and MicrBio.

7741  Molecular Virology and Pathogenesis of Viruses G  5
An integrated study of the molecular mechanisms of virus replication and host-virus relationships that control virus pathogenesis or use as a therapeutic agent.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 770, VetBio 7741 (754), 841, MVIMG 7741 (754), or 841. Cross-listed in VetBio and MVIMG.

7780  Molecular Genetics Laboratory Rotations G  3 - 6
Laboratory research procedures, literature readings, and discussions to familiarize the students with specific research areas.
Prereq: Grad standing in MolGen. Repeatable to a maximum of 16 or cr hrs or 6 completions. This course is graded S/U.

7807  Gene Expression: Post-Transcriptional Control G  3
Intensive study of problems in the general area of post-transcriptional control of gene expression. Consists of student presentations and class evaluations of recently published results in these fields.
Prereq: Biochem 701 (701) or Biochem 702, and 6 graduate level cr hrs; or permission of instructor. Not open to students with credit for 880.07. Cross-listed in MolBio and VetBio.

7890  Molecular Genetics Seminar             G  1
Faculty, graduate students, and outside speakers will participate.
Prereq: Grad standing in MolGen. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

7999  Thesis Research                        G  1 - 12
Research for Master's Thesis only.
Repeatable to a maximum of 60 or cr hrs or 12 completions. This course is graded S/U.

8999  Dissertation Research                 G  1 - 12
Research for dissertation purposes only.
Repeatable. This course is graded S/U.
Molecular, Cellular, and Developmental Biology

6193 Individual Studies G 1 - 3

Individual studies of publications, current research, or research techniques in areas of molecular, cellular, or developmental biology. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

7600 First-Year Student Orientation G 1

Orientation for first-year students in MCD Biological graduate programs, lectures on topics important for successful graduate experience, training in presenting scientific work, and training in research ethics. Prereq: Not open to students with credit for Biophys, MolGen, or Micrbio 7600, or OSBP 7600 (760). This course is graded S/U. Cross-listed in Biophys, MolGen, OSBP, and Micrbio.

7780 MCD Laboratory Rotations G 3 - 6

Laboratory research procedures, literature readings, and discussions to familiarize students with specific research areas. Prereq: Grad standing in MCDBio. Repeatable to a maximum of 16 cr hrs. This course is graded S/U.

7890 Seminar in Molecular, Cellular, and Developmental Biology G 1

Seminar including students, faculty, and outside invited speakers. Prereq: Grad standing in MCDBio. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

7891 Presentation in Molecular, Cellular, and Developmental Biology Seminar G 1

Seminar including students, faculty, and outside invited speakers. Taken terms the student is presenting. Prereq: Grad standing in MCDBio. Repeatable to a maximum of 6 cr hrs.

7900 Molecular Life Sciences Seminar Series G 1

A research seminar course designed to expose doctoral students in the Molecular, Cellular, and Developmental Biology graduate program to cutting-edge research in the molecular and cellular life sciences. Prereq: Grad standing in the MCDBio program. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

Moving Image Production

2201 Filmmaking Foundation I U 3

This entry-level course presents moving image production as an artistic, cultural, and multi-modal practice. It focuses on the building blocks of film grammar and offers an introduction to fundamental concepts and tools needed to work in the moving image, grounded in critical and historical context. Students use project-based learning to work independently and collaboratively.

2202 Filmmaking Foundation II U 3

This course is second in a sequence to introduce moving image production as an artistic, cultural, and multi-modal practice. It focuses on the building blocks of film grammar and offers an introduction to fundamental concepts and tools needed to work in the moving image, grounded in critical and historical context. Students use project-based learning to work independently and collaboratively. Prereq: 2201.

4191 Moving-Image Production Internship U ½ - 3

On- and off-campus internships give students the opportunity to gain hands-on experience in an area of academic and professional interest. Permission to enroll is required from a faculty advisor, and the number of credit hours associated with the internship will be determined with the advisor's input. Prereq: Permission of MIP faculty advisor. Repeatable to a maximum of 3 cr hrs or 2 completions. This course is graded S/U.

4200 Cinema Today U ½

Students attend a specific set of new films, documentaries, and classics at world-class venues such as the Wexner Center of the Arts and when available, any associated visiting filmmakers' discussions of their work. To synthesize these viewings, students will submit response writings that apply specific elements of film language to answer questions about the films. Repeatable to a maximum of 3 cr hrs.

4501 Senior Project I U 3

The first of a two-semester experience in which students develop an iterative pre-production plan and rough cut/draft stage for their individual or collaborative senior project. Students produce a creative work in the areas of animation, documentary, experimental or narrative or combinations of these modes. Group-oriented critiques advance projects to an intermediate stage of development. Prereq: Sr standing, and permission of instructor or department.

4502 Senior Project II U 3

The second of a two-semester experience in which students develop their individual or collaborative capstone project to completion. Students produce a creative work in the areas of animation, documentary, experimental or narrative or combinations of these modes. Group-oriented critiques advance projects to an finalized stage of development. A portfolio of creative work is completed. Prereq: 4501.

Music

1101.01 Beginning Piano I: Group Instruction U 2

Group instruction for students who have had no previous piano study. Prereq: Not open to students with credit for 101.01, or Music majors. VSP Admis Cond course.

1101.02 Beginning Voice I - Group Instruction U 2

Group instruction for students who have had no previous voice study. Prereq: Not open to Music majors. Repeatable to a maximum of 4 cr hrs or 2 completions. VSP Admis Cond course.

1101.35 Beginning Guitar I - Group Instruction U 2

Introduction course in guitar for the non-music major. Includes chording, strumming and melodic playing. Prereq: Not open to Music majors. Repeatable to a maximum of 4 cr hrs. VSP Admis Cond course.

1102.01 Beginning Piano II: Group Instruction U 2

Intermediate course in piano for the non-music major. Prereq: 1101.01 (101.01). Not open to Music majors. Repeatable to a maximum of 4 cr hrs. VSP Admis Cond course.

1110.33 Applied Music (Prospective Majors): Cello U 2

Elementary applied cello course restricted to prospective music majors whose audition scores indicate the need for systematic instruction to prepare for 2201. Prereq: By audition only. Repeatable to a maximum of 4 cr hrs.

1120 Elementary Music Theory and Aural Training for Non-Majors U 3

An introduction to the fundamentals of music, music reading, and aural musicianship. Prereq: Enrollment in non-Music major. Not open to students with credit for 1121.

1121 Elementary Music Theory and Aural Training U 3

An introduction to the fundamentals of music, music reading, and aural musicianship. Prereq: Not open to students with credit for 121. VSP Admis Cond course.

201 Music Theory I for Non-Majors U 2

Elements of music and musical notation; analytical concepts and terminology; fundamentals of counterpoint and melody; extensive practice through written drill and creative projects. Prereq: Passing of Theory Placement Exam, and permission of instructor. Not open to music majors.

2022 Music Theory II for Non-Majors U 2

Principles of diatonic harmony, nonchordal melodic elements, and homophonic phrase structures; extensive practice in part-writing, analysis, and creative application. Prereq: 2021, 2221, and 222, and enrollment in non-Music major. Not open to students with credit for 223.

2031 The Informed Beginning Pianist U 3

This course is designed for people with little or no musical background who want to learn how to play piano and gain valuable insights into how piano music has shaped cultural values and norms. GE VPA course.

2200.11 Applied Music (Secondary): Piano U 1 - 2

Fundamental applied music instruction in areas other than a student's major or principal area. Prereq: 2264.01 or 266.01, and Music major. Repeatable to a maximum of 12 or hrs or 12 completions.

2200.12 Applied Music (Secondary): Jazz Piano U 1 - 2

Fundamental applied music instruction in areas other than a student's major or principal area. Prereq: Music major. Repeatable to a maximum of 12 cr hrs or 12 completions.

2200.21 Applied Music (Secondary): Voice U 1 - 2

Fundamental applied music instruction in areas other than a student's major or principal area. Prereq: Music major. Repeatable to a maximum of 12 cr hrs or 12 completions.

2200.31 Applied Music (Secondary): Violin U 1 - 2

Fundamental applied music instruction in areas other than a student's major or principal area. Prereq: Music major. Repeatable to a maximum of 12 cr hrs or 12 completions.

2200.32 Applied Music (Secondary): Viola U 1 - 2

Fundamental applied music instruction in areas other than a student's major or principal area. Prereq: Music major. Repeatable to a maximum of 12 cr hrs or 12 completions.

2200.33 Applied Music (Secondary): Cello U 1 - 2

Fundamental applied music instruction in areas other than a student's major or principal area. Prereq: Music major. Repeatable to a maximum of 12 cr hrs or 12 completions.

2200.34 Applied Music (Secondary): Double Bass U 1 - 2

Fundamental applied music instruction in areas other than a student's major or principal area. Prereq: Music major. Repeatable to a maximum of 12 cr hrs or 12 completions.

2200.36 Applied Music (Secondary): Jazz Bass U 1 - 2

Fundamental applied music instruction in areas other than a student's major or principal area. Prereq: Music major. Repeatable to a maximum of 12 cr hrs or 12 completions.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2200.37</td>
<td>Applied Music - Secondary - Jazz Guitar</td>
<td>U</td>
<td>Fundamental applied music instruction in areas other than a student's major or principal area. Prereq: Enrollment in Music major. Repeatable to a maximum of 12 cr hrs or 12 completions.</td>
</tr>
<tr>
<td>2200.41</td>
<td>Applied Music - Secondary - Flute</td>
<td>U</td>
<td>Fundamental applied music instruction in areas other than a student's major or principal area. Prereq: Enrollment in Music major. Repeatable to a maximum of 12 cr hrs or 12 completions.</td>
</tr>
<tr>
<td>2200.42</td>
<td>Applied Music - Secondary - Oboe</td>
<td>U</td>
<td>Fundamental applied music instruction in areas other than a student's major or principal area. Prereq: Enrollment in Music major. Repeatable to a maximum of 12 cr hrs or 12 completions.</td>
</tr>
<tr>
<td>2200.43</td>
<td>Applied Music - Secondary - Clarinet</td>
<td>U</td>
<td>Fundamental applied music instruction in areas other than a student's major or principal area. Prereq: Enrollment in Music major. Repeatable to a maximum of 12 cr hrs or 12 completions.</td>
</tr>
<tr>
<td>2200.45</td>
<td>Applied Music - Secondary - Saxophone</td>
<td>U</td>
<td>Fundamental applied music instruction in areas other than a student's major or principal area. Prereq: Enrollment in Music major. Repeatable to a maximum of 12 cr hrs or 12 completions.</td>
</tr>
<tr>
<td>2200.47</td>
<td>Applied Music - Secondary - Jazz Saxophone</td>
<td>U</td>
<td>Fundamental applied music instruction in areas other than a student's major or principal area. Prereq: Enrollment in Music major. Repeatable to a maximum of 12 cr hrs or 12 completions.</td>
</tr>
<tr>
<td>2200.53</td>
<td>Applied Music - Secondary - Trombone</td>
<td>U</td>
<td>Fundamental applied music instruction in areas other than a student's major or principal area. Prereq: Enrollment in Music major. Repeatable to a maximum of 12 cr hrs or 12 completions.</td>
</tr>
<tr>
<td>2200.54</td>
<td>Applied Music - Secondary - Euphonium</td>
<td>U</td>
<td>Fundamental applied music instruction in areas other than a student's major or principal area. Prereq: Enrollment in Music major. Repeatable to a maximum of 12 cr hrs or 12 completions.</td>
</tr>
<tr>
<td>2200.56</td>
<td>Applied Music (Secondary): Jazz Trumpet</td>
<td>U</td>
<td>Fundamental applied music instruction in areas other than a student's major or principal area. Prereq: Music major. Repeatable to a maximum of 12 cr hrs or 12 completions.</td>
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<tr>
<td>2200.57</td>
<td>Applied Music - Secondary - Jazz Trombone</td>
<td>U</td>
<td>Fundamental applied music instruction in areas other than a student's major or principal area. Prereq: Enrollment in Music major. Repeatable to a maximum of 12 cr hrs or 12 completions.</td>
</tr>
<tr>
<td>2200.71</td>
<td>Applied Music - Secondary - Percussion</td>
<td>U</td>
<td>Fundamental applied music instruction in areas other than a student's major or principal area. Prereq: Enrollment in Music major. Repeatable to a maximum of 12 cr hrs or 12 completions.</td>
</tr>
<tr>
<td>2200.72</td>
<td>Applied Music - Secondary - Jazz Percussion</td>
<td>U</td>
<td>Fundamental applied music instruction in areas other than a student's major or principal area. Prereq: Enrollment in Music major. Repeatable to a maximum of 12 cr hrs or 12 completions.</td>
</tr>
<tr>
<td>2201.11</td>
<td>Applied Music - Principal - Piano</td>
<td>U</td>
<td>Instruction in applied piano to develop musicianship, performance, and knowledge of music literature. Prereq: Enrollment in Music major. Repeatable to a maximum of 6 cr hrs. This course is available for EM credit.</td>
</tr>
<tr>
<td>2201.12</td>
<td>Applied Music - Principal - Jazz Piano</td>
<td>U</td>
<td>Instruction in applied jazz piano to develop musicianship, performance, and knowledge of music literature. Prereq: Enrollment in Music major. Repeatable to a maximum of 6 cr hrs. This course is available for EM credit.</td>
</tr>
<tr>
<td>2201.21</td>
<td>Applied Music - Principal - Voice</td>
<td>U</td>
<td>Instruction in applied voice to develop musicianship, performance, and knowledge of music literature. Prereq: Enrollment in Music major. Repeatable to a maximum of 6 cr hrs. This course is available for EM credit.</td>
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<tr>
<td>2201.31</td>
<td>Applied Music - Principal - Violin</td>
<td>U</td>
<td>Instruction in applied violin to develop musicianship, performance, and knowledge of music literature. Prereq: Enrollment in Music major. Repeatable to a maximum of 6 cr hrs. This course is available for EM credit.</td>
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<tr>
<td>2201.32</td>
<td>Applied Music - Principal - Viola</td>
<td>U</td>
<td>Instruction in applied viola to develop musicianship, performance, and knowledge of music literature. Prereq: Enrollment in Music major. Repeatable to a maximum of 6 cr hrs. This course is available for EM credit.</td>
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<tr>
<td>2201.33</td>
<td>Applied Music - Principal - Cello</td>
<td>U</td>
<td>Instruction in applied cello to develop musicianship, performance, and knowledge of music literature. Prereq: Enrollment in Music major. Repeatable to a maximum of 6 cr hrs. This course is available for EM credit.</td>
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<tr>
<td>2201.34</td>
<td>Applied Music - Principal - Double Bass</td>
<td>U</td>
<td>Instruction in applied double bass to develop musicianship, performance, and knowledge of music literature. Prereq: Enrollment in Music major. Repeatable to a maximum of 6 cr hrs. This course is available for EM credit.</td>
</tr>
<tr>
<td>2201.37</td>
<td>Applied Music - Principal - Jazz Guitar</td>
<td>U</td>
<td>Instruction in applied jazz guitar to develop musicianship, performance, and knowledge of music literature. Prereq: Admission to the School of Music by audition. Repeatable to a maximum of 6 cr hrs. This course is available for EM credit.</td>
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<tr>
<td>2201.41</td>
<td>Applied Music - Principal - Flute</td>
<td>U</td>
<td>Instruction in applied flute to develop musicianship, performance, and knowledge of music literature. Prereq: Admission to the School of Music by audition. Repeatable to a maximum of 6 cr hrs. This course is available for EM credit.</td>
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<tr>
<td>2201.42</td>
<td>Applied Music - Principal - Oboe</td>
<td>U</td>
<td>Instruction in applied oboe to develop musicianship, performance, and knowledge of music literature. Prereq: Admission to the School of Music by audition. Repeatable to a maximum of 6 cr hrs. This course is available for EM credit.</td>
</tr>
<tr>
<td>2201.43</td>
<td>Applied Music - Principal - Clarinet</td>
<td>U</td>
<td>Instruction in applied clarinet to develop musicianship, performance, and knowledge of music literature. Prereq: Admission to the School of Music by audition. Repeatable to a maximum of 6 cr hrs. This course is available for EM credit.</td>
</tr>
<tr>
<td>2201.44</td>
<td>Applied Music - Principal - Bass Clarinet</td>
<td>U</td>
<td>Instruction in applied bass clarinet to develop musicianship, performance, and knowledge of music literature. Prereq: Admission to the School of Music by audition. Repeatable to a maximum of 6 cr hrs. This course is available for EM credit.</td>
</tr>
<tr>
<td>2201.45</td>
<td>Applied Music - Principal - Saxophone</td>
<td>U</td>
<td>Instruction in applied saxophone to develop musicianship, performance, and knowledge of music literature. Prereq: Admission to the School of Music by audition. Repeatable to a maximum of 6 cr hrs. This course is available for EM credit.</td>
</tr>
<tr>
<td>2201.46</td>
<td>Applied Music - Principal - Bassoon</td>
<td>U</td>
<td>Instruction in applied bassoon to develop musicianship, performance, and knowledge of music literature. Prereq: Admission to the School of Music by audition. Repeatable to a maximum of 6 cr hrs. This course is available for EM credit.</td>
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<td>2201.47</td>
<td>Applied Music - Principal - Bass Clarinet</td>
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<td>Instruction in applied bass clarinet to develop musicianship, performance, and knowledge of music literature. Prereq: Admission to the School of Music by audition. Repeatable to a maximum of 6 cr hrs. This course is available for EM credit.</td>
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<tr>
<td>2201.51</td>
<td>Applied Music - Principal - Horn</td>
<td>U</td>
<td>Instruction in applied horn to develop musicianship, performance, and knowledge of music literature. Prereq: Admission to the School of Music by audition. Repeatable to a maximum of 6 cr hrs. This course is available for EM credit.</td>
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<tr>
<td>2201.52</td>
<td>Applied Music - Principal - Trumpet</td>
<td>U</td>
<td>Instruction in applied trumpet to develop musicianship, performance, and knowledge of music literature. Prereq: Admission to the School of Music by audition. Repeatable to a maximum of 6 cr hrs. This course is available for EM credit.</td>
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<td>2201.53</td>
<td>Applied Music - Principal - Trombone</td>
<td>U</td>
<td>Instruction in applied trombone to develop musicianship, performance, and knowledge of music literature. Prereq: Admission to the School of Music by audition. Repeatable to a maximum of 6 cr hrs. This course is available for EM credit.</td>
</tr>
<tr>
<td>2201.54</td>
<td>Applied Music - Principal - Euphonium</td>
<td>U</td>
<td>Instruction in applied euphonium to develop musicianship, performance, and knowledge of music literature. Prereq: Admission to the School of Music by audition. Repeatable to a maximum of 6 cr hrs. This course is available for EM credit.</td>
</tr>
<tr>
<td>2201.55</td>
<td>Applied Music - Principal - Tuba</td>
<td>U</td>
<td>Instruction in applied tuba to develop musicianship, performance, and knowledge of music literature. Prereq: Admission to the School of Music by audition. Repeatable to a maximum of 6 cr hrs. This course is available for EM credit.</td>
</tr>
</tbody>
</table>
2201.56 Applied Music - Principal - Jazz Trumpet  
U  2  
Instruction in applied jazz trumpet to develop musicianship, performance, and knowledge of music literature. 
Prereq: Admission to the School of Music by audition. Repeatable to a maximum of 6 cr hrs. This course is available for EM credit.

2201.57 Applied Music - Principal - Jazz Trombone  
U  2  
Instruction in applied jazz trombone to develop musicianship, performance, and knowledge of music literature. 
Prereq: Admission to the School of Music by audition. Repeatable to a maximum of 6 cr hrs. This course is available for EM credit.

2201.71 Applied Music - Principal - Percussion  
U  2  
Instruction in applied percussion to develop musicianship, performance, and knowledge of music literature. 
Prereq: Admission to the School of Music by audition. Repeatable to a maximum of 6 cr hrs. This course is available for EM credit.

2201.72 Applied Music - Principal - Jazz Percussion  
U  2  
Instruction in applied jazz percussion to develop musicianship, performance, and knowledge of music literature. 
Prereq: Admission to the School of Music by audition. Repeatable to a maximum of 6 cr hrs. This course is available for EM credit.

2201.91 Applied Music - Principal - Harp  
U  2  
Instruction in applied harp to develop musicianship, performance, and knowledge of music literature. 
Prereq: Admission to the School of Music by audition. Repeatable to a maximum of 6 cr hrs. This course is available for EM credit.

2202 Sight-reading for Pianists  
U  1  
Developing tactile and visual skills at the keyboard, ensemble sight-reading duets, two-piano scores, vocal and instrumental accompanying, transposition, and figured bass realization. 
Prereq: Enrollment in Performance major with specialization in piano. Repeatable to a maximum of 2 cr hrs.

2203.01 Chorale  
U  ½ - 2  
A selected group of mixed voices which performs an extensive repertoire in concerts both on and off campus. 
Prereq: Admission to the School of Music by audition, and permission of instructor. Repeatable to a maximum of 16 cr hrs or 8 completions. VSP Admis Cond course.

2203.02 Symphonic Choir  
U  ½ - 2  
Symphonic Choir is a concert organization whose members perform a variety of literature. 
Prereq: Admission by audition only. Repeatable to a maximum of 16 cr hrs or 8 completions. VSP Admis Cond course.

2203.03 University Chorus  
U  ½ - 2  
Selected choral works are studied and performed. 
Prereq: Admission by audition only. Repeatable to a maximum of 16 cr hrs or 8 completions. VSP Admis Cond course.

2203.04 Men's Glee Club  
U  ½ - 2  
Study and performance of choral literature for men's voices. 
Prereq: Admission by audition, and permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions. VSP Admis Cond course.

2203.05 Women's Glee Club  
U  ½ - 2  
Study and performance of choral literature for women's voices. 
Prereq: Admission by audition, and permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions. VSP Admis Cond course.

2203.08 Statesmen  
U  ½ - 1  
Study and performance of small ensemble choral literature for men's voices. 
Prereq: Admission by audition only. Repeatable to a maximum of 8 cr hrs or 8 completions. VSP Admis Cond course.

2204.01 University Wind Symphony  
U  ½ - 2  
Preparation and performance of traditional and contemporary literature for symphonic band. 
Prereq: Admission by audition, and permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions. VSP Admis Cond course.

2204.02 University Symphonic Band  
U  ½ - 2  
Preparation and performance of traditional and contemporary literature for symphonic band. 
Prereq: Admission by audition, and permission of instructor. Repeatable to a maximum of 16 cr hrs or 8 completions. VSP Admis Cond course.

2204.03 Collegiate Winds  
U  ½ - 2  
Preparation and performance of traditional, contemporary, and educational literature for concert band. 
Prereq: Admission by audition only. Repeatable to a maximum of 16 cr hrs or 8 completions. VSP Admis Cond course.

2204.04 University Band  
U  ½ - 2  
Offers students an opportunity to perform symphonic band literature. 
Prereq: Prior high school instrumental experience; no formal audition required. Repeatable to a maximum of 16 cr hrs or 8 completions. VSP Admis Cond course.

2205.01 University Marching Band  
U  ½ - 2  
The University Marching Band is a selected group of brass and percussion players that performs at football games, rallies, and concerts during Autumn semester. 
Prereq: Admission by audition, and permission of instructor. Repeatable to a maximum of 10 cr hrs or 5 completions. VSP Admis Cond course.

2205.02 Athletic Band  
U  ½ - 2  
Athletic band provides spirited music for various sporting events (men's and women's basketball, spring football game), as well as several concerts. 
Prereq: Admission by audition, and permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions. VSP Admis Cond course.

2206.01 University Jazz Ensemble  
U  ½ - 2  
A select group devoted to arranging, rehearsing, and performing jazz literature with an emphasis on contemporary works. 
Prereq: Open to all students by audition and/or permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions. VSP Admis Cond course.

2206.02 Jazz Lab Ensemble  
U  ½ - 2  
An ensemble devoted to the study and performance of music in various styles of jazz. 
Prereq: Open to students by audition and/or permission of instructor. Repeatable to a maximum of 20 or hrs or 10 completions. VPA Admis Cond course.

2206.03 Jazz Workshop Ensemble  
U  ½ - 2  
An ensemble devoted to the study and performance of music in various jazz, jazz rock, blues, and pop styles. 
Prereq: Open to students by audition and/or permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions. VPA Admis Cond course.

2207.01 University Percussion Ensemble  
U  ½ - 2  
A laboratory and performance musical ensemble whose literature consists of original and transcribed works for percussion instruments alone or with percussion as a dominant feature. 
Prereq: Enrollment in Music major. Repeatable to a maximum of 20 cr hrs or 10 completions. VSP Admis Cond course.

2207.02 Steel Pan Ensemble  
U  ½ - 1  
A laboratory and performance experience on authentic steel pans, concentrating on traditional music of Trinidad, as well as contemporary arrangement. 
Repeatable to a maximum of 10 cr hrs or 10 completions. VSP Admis Cond course.

2208.01 Small Ensemble: Piano  
U  ½ - 1  
Intensive study of ensemble works for piano. 
Prereq: Admission by audition, or permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions. VSP Admis Cond course.

2208.02 Small Ensemble: Voice  
U  ½ - 1  
Intensive study of ensemble works for voice. 
Prereq: Admission by audition, or permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions. VSP Admis Cond course.

2208.03 Small Ensemble: Strings  
U  ½ - 1  
Intensive study of ensemble works for strings. 
Prereq: Admission by audition, or permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions. VSP Admis Cond course.

2208.04 Small Ensembles: Woodwinds  
U  ½ - 1  
Intensive study of ensemble works for woodwinds. 
Prereq: Admission by audition, or permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions. VSP Admis Cond course.

2208.05 Small Ensembles: Brass  
U  ½ - 1  
Intensive study of ensemble works for brass. 
Prereq: Admission by audition, or permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions. VSP Admis Cond course.

2208.06 Small Ensembles: Jazz combos  
U  ½ - 1  
Small groups devoted to the study and performance of music in the various jazz combo styles. 
Prereq: Admission by audition, and permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

2208.16 Small Ensemble: Gospel Choir  
U  1  
Study and performance of gospel and spiritual choir literature for mixed chorus. 
Repeatable to a maximum of 10 cr hrs.

2208.20 African Performing Ensemble  
U  ½ - 1  
Ensemble dedicated to performing African-derived music. 
Prereq: Admission by audition, or permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions. VSP Admis Cond course.

2208.22 Andean Music Ensemble  
U  ½ - 1  
Learning to play and perform music from Bolivia, Peru, Ecuador, Chile, Colombia and Argentina. The course explores various musical genres within the Andean region. Students study techniques and methods for playing Andean instruments and learn to sing in Spanish, Quechua and Aymara. 
Repeatable to a maximum of 10 cr hrs or 10 completions. Cross-listed in Spanish.
2208.80  Sonic Arts Ensemble U ½ - 1
An ensemble-based course focused on the use of the computer and/or electronic technologies in music performance and music composition, along with the development of new technologies (software and hardware) for sonic arts performance. Prereq: Audition required. Repeatable to a maximum of 10 cr hrs or 10 completions.

2208.99  Small Ensemble: Miscellaneous U ½ - 1
Intensive study of ensemble works for varied ensembles. Prereq: Admission by audition, or permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions. VSP Admis Cond course.

2209  Jazz Improvisation I U 2
Fundamentals of jazz improvisation; seventh chord structures major, minor, pentatonic and blues scales; jazz patterns and phrasing; analysis and improvisation of blues and II-V progressions. Prereq: 2221. Not open to students with credit for 209. This course is available for EM credit.

2215.01  University Symphony Orchestra U ½ - 2
The University Orchestra is an 85-piece orchestra of full instrumentation devoted to the preparation of standard and modern literature. Prereq: Admission by audition. Repeatable to a maximum of 24 cr hrs or 12 completions. VSP Admis Cond course.

2215.02  First Year Orchestra U ½ - 2
Rehearsal and performance experience for non-music majors who played an orchestral instrument in high school. Prereq: Must have played an orchestral instrument in high school. Not open to Music majors. Repeatable to a maximum of 4 cr hrs or 2 completions. VSP Admis Cond course.

2216.11  Applied Music (Non Major): Piano U 2
Course provides fundamental applied piano instruction in piano for non-majors and minors. Prereq: Permission of instructor. Not open to Music majors. Repeatable to a maximum of 16 cr hrs.

2216.12  Applied Music (Non Major): Jazz Piano U 2
Course provides fundamental studio instruction in jazz piano for non-majors and minors. Prereq: Permission of instructor. Not open to Music majors. Repeatable to a maximum of 16 cr hrs.

2216.21  Applied Music (Non Major): Voice U 2
Course provides fundamental studio instruction in voice for non-majors and minors. Prereq: Permission of instructor. Not open to Music majors. Repeatable to a maximum of 16 cr hrs.

2216.31  Applied Music (Non Major): Violin U 2
Course provides fundamental studio instruction in violin for non-majors and minors. Prereq: Permission of instructor. Not open to Music majors. Repeatable to a maximum of 16 cr hrs.

2216.32  Applied Music (Non Major): Viola U 2
Course provides fundamental studio instruction in viola for non-majors and minors. Prereq: Permission of instructor. Not open to Music majors. Repeatable to a maximum of 16 cr hrs.

2216.33  Applied Music (Non Major): Cello U 2
Course provides fundamental studio instruction in cello for non-majors and minors. Prereq: Permission of instructor. Not open to Music majors. Repeatable to a maximum of 16 cr hrs.

2216.34  Applied Music (Non Major): Double Bass U 2
Course provides fundamental studio instruction in double bass for non-majors and minors. Prereq: Permission of instructor. Not open to Music majors. Repeatable to a maximum of 16 cr hrs.

2216.36  Applied Music (Non Major): Jazz Bass U 2
Course provides fundamental studio instruction in jazz bass for non-majors and minors. Prereq: Permission of instructor. Not open to Music majors. Repeatable to a maximum of 16 cr hrs.

2216.37  Applied Music (Non Major): Jazz Guitar U 2
Course provides fundamental studio instruction in jazz guitar for non-majors and minors. Prereq: Permission of instructor. Not open to Music majors. Repeatable to a maximum of 16 cr hrs.

2216.41  Applied Music (Non Major): Flute U 2
Course provides fundamental studio instruction in flute for non-majors and minors. Prereq: Permission of instructor. Not open to Music majors. Repeatable to a maximum of 16 cr hrs.

2216.42  Applied Music (Non Major): Oboe U 2
Course provides fundamental studio instruction in oboe for non-majors and minors. Prereq: Permission of instructor. Not open to Music majors. Repeatable to a maximum of 16 cr hrs.

2216.43  Applied Music (Non Major): Clarinet U 2
Course provides fundamental studio instruction in clarinet for non-majors and minors. Prereq: Permission of instructor. Not open to Music majors. Repeatable to a maximum of 16 cr hrs.

2216.45  Applied Music (Non Major): Saxophone U 2
Course provides fundamental studio instruction in saxophone for non-majors and minors. Prereq: Permission of instructor. Not open to Music majors. Repeatable to a maximum of 16 cr hrs.

2216.46  Applied Music (Non Major): Bassoon U 2
Course provides fundamental studio instruction in bassoon for non-majors and minors. Prereq: Permission of instructor. Not open to Music majors. Repeatable to a maximum of 16 cr hrs.

2216.51  Applied Music (Non Major): Horn U 2
Course provides fundamental studio instruction in horn for non-majors and minors. Prereq: Permission of instructor. Not open to Music majors. Repeatable to a maximum of 16 cr hrs.

2216.53  Applied Music (Non Major): Trombone U 2
Course provides fundamental studio instruction in trombone for non-majors and minors. Prereq: Permission of instructor. Not open to Music majors. Repeatable to a maximum of 16 cr hrs.

2216.54  Applied Music - Non Major - Euphonium U 2
Course provides fundamental studio instruction in euphonium for non-majors and minors. Prereq: Permission of instructor. Not open to Music majors. Repeatable to a maximum of 16 cr hrs.

2216.55  Applied Music - Non Major - Tuba U 2
Course provides fundamental studio instruction in tuba for non-majors and minors. Prereq: Permission of instructor. Not open to Music majors. Repeatable to a maximum of 16 cr hrs.

2216.56  Applied Music - Non Major - Jazz Trumpet U 2
Course provides fundamental studio instruction in jazz trumpet for non-majors and minors. Prereq: Permission of instructor. Not open to Music majors. Repeatable to a maximum of 16 cr hrs.

2216.57  Applied Music - Non Major - Jazz Trombone U 2
Course provides fundamental studio instruction in jazz trombone for non-majors and minors. Prereq: Permission of instructor. Not open to Music majors. Repeatable to a maximum of 16 cr hrs.

2216.72  Applied Music - Non Major - Jazz Percussion U 2
Course provides fundamental studio instruction in jazz percussion for non-majors and minors. Prereq: Permission of instructor. Not open to Music majors. Repeatable to a maximum of 16 cr hrs.

2220  Introduction to Music Technology U 1
Introduction to the use of technology in the practice and study of music. Prereq: Open to music majors only, or permission of instructor. Not open to students with credit for 220. This course is available for EM credit.

2221  Music Theory I U 2
Elements of music and musical notation; analytical concepts and terminology; fundamentals of counterpoint and melody; extensive practice through written drill and creative projects. Prereq: Open to Music majors only. Not open to students with credit for 221. This course is available for EM credit.

2222  Music Theory II U 2
Principles of diatonic harmony, nonchordal melodic elements, and homophonic phrase structures; extensive practice in part-writing, analysis, and creative application. Prereq: 2221, 2221, 2221, or 222, and enrollment in Music major. Not open to students with credit for 223. This course is available for EM credit.

2224  Aural Training I U 2
Training in aural musicianship and music reading; practical application through solfege, dictation and keyboard drill. Prereq: Passing theory placement test. Not open to students with credit for 224. This course is available for EM credit.

2225  Aural Training II U 2
A continuation of 2224 introducing more challenging diatonic materials. Prereq: 225 or 2224, and 2221, 2221.01 or 222. Not open to students with credit for 225 and 226. This course is available for EM credit.
Music

2231 Jazz Theory U 2
The forms and compositional techniques of jazz, including chord progression formulas, chord alteration, lead-sheet paraphrasing, counterpoint, and bass-line construction, and creative application.
Prereq: 2222 and 2225. Not open to students with credit for 231.

2232 Jazz Keyboard Harmony U 2
Designed to provide students with piano skills that directly relate to other jazz areas such as composition, arranging, and improvisation.
Prereq: 2231 and 2261.01. Not open to students with credit for 223.

2240 Music History I U 3
The development of western art music from ancient times to 1700.
Prereq: Music major, or permission of instructor. Not open to students with credit for 240.

2241 Music History II U 3
The development of European and American art music from 1700 to 1900.
Prereq: 2240, and Music major, or permission of instructor. Not open to students with credit for 241.

2242 Music History III U 3
The development of European and American art music in the 20th and 21st centuries.
Prereq: 2241, and Music major, or permission of instructor. Not open to students with credit for 242.

2244 African-American Musical Traditions U 2
A study of selective genres and styles of music originating primarily in the African-American experience.
Prereq: Not open to students with credit for 244 or AfAmASt 244. VSP Admis Cond course.

2250 Music Cultures of the World U 3
A survey of musical cultures outside the Western European tradition of the fine arts.
Prereq: Not open to students with credit for 250. GE VPA and diversity global studies course.

2251 The World of Classical Music U 3
An introduction to the world of classical music and to its genres, composers, styles, societies, and historical periods. No music background is required.
Prereq: Not open to students with credit for 251 or Music majors. GE VPA and diversity global studies course. VSP Admis Cond course.

2251E The World of Classical Music U 3
An introduction to the world of classical music and to its genres, composers, styles, societies, and historical periods. No music background is required. Music 2251E is an honors embedded course.
Prereq: Honors standing or permission of instructor. Not open to students with credit for 251 or Music majors. GE VPA and diversity global studies course. VSP Admis Cond course.

2252 History of Rock 'n' Roll U 3
The history and culture of rock 'n' roll.
Prereq: Not open to students with credit for 252. GE VPA course.

2253 Introduction to Jazz U 3
A study of the characteristics, styles, structures of jazz, and jazz performers.
Prereq: Not open to students with credit for 253 or to Music majors. GE VPA course.

2254 Video Game Music U 3
An introduction to the history and function of musical sound in video games.
GE VPA course.

2261.01 Keyboard Skills I U 1
Beginning group piano instruction for music majors.
Prereq: Music major. Concur: 2221. Not open to keyboard majors or students with credit for 261.01. This course is available for EM credit.

2261.03 String Techniques I U 1
Applied music methods and materials for strings.
Prereq: Music major. Not open to students with credit for 261.03. This course is available for EM credit.

2261.04 Oboe/Bassoon Techniques U 1
Pedagogical and performance techniques for oboe and bassoon.
Prereq: Music major. Not open to students with credit for 261.04 or 261.42. This course is available for EM credit.

2261.07 Percussion Techniques U 1
Percussion instruction for BME majors.
Prereq: Music major. Not open to students with credit for 261.07. This course is available for EM credit.

2261.11 Basic Conducting Lab-Instrumental U 1
Basic conducting skill development emphasizing pulse, rhythm and physical coordination.
Prereq: Enrollment in Music major. Not open to students with credit for 261.11. This course is available for EM credit.

2261.12 Basic Conducting Lab-Choral U 1
Basic choral conducting skill development emphasizing pulse, rhythm and physical coordination.
Prereq: Enrollment in Music major. This course is available for EM credit.

2261.99 Winds, Strings, and Percussion Techniques U 1
Functional knowledge of wind, strings, and percussion instruments.
Prereq: Music major. Not open to instrumental majors or students with credit for 261.99. This course is available for EM credit.

2262.01 Keyboard Skills II U 1
Intermediate group piano instruction for music majors.
Prereq: 2261.01 (261.01), and Music major. Not open to piano majors or students with credit for 262.01. This course is available for EM credit.

2262.03 String Techniques II U 1
Pedagogical and performance techniques for string instruments.
Pre req: 2261.03, and Music major. Not open to students with credit for 262.03. This course is available for EM credit.

2262.04 Flute/Clarinet/Saxophone Techniques U 1
Pedagogical and performance techniques for flute, clarinet, and saxophone.
Pre req: Music major. Not open to students with credit for 262.04. This course is available for EM credit.

2262.05 Brass Techniques U 1
Pedagogical and performance techniques for brass instruments.
Pre req: Music major. Not open to students with credit for 262.05. This course is available for EM credit.

2262.11 Conducting (Instrumental) U 1
Conducting instruction applied to band, orchestra, and ensemble literature and performance.
Pre req: 2261.11 (261.11), and Music major. Not open to students with credit for 660. This course is available for EM credit.

2262.12 Conducting (Choral) U 1
Conducting instruction applied to choral literature and performance problems.
Pre req: 2261.12, and Music major. Not open to students with credit for 661. This course is available for EM credit.

2262.13 Conducting (Strings) U 1
Conducting instruction applied to orchestral literature and performance.
Pre req: 2261.11 (261.11), and Music major. This course is available for EM credit.

2263.01 Keyboard Skills III U 1
Intermediate group piano instruction for music majors.
Pre req: 2262.01, and Music major. Not open to students with credit for 263.01. This course is available for EM credit.

2263.02 Voice Pedagogy U 1
Vocal pedagogy, anatomy, and physiology of the vocal mechanism.
Pre req: Music major. Not open to students with credit for 263.02. This course is available for EM credit.

2264.01 Keyboard Skills IV U 1
Intermediate group piano instruction for music majors.
Pre req: 2263.01, and Music major. Not open to students with credit for 264.01. This course is available for EM credit.

2267 String Pedagogy for the Applied Studio U 1
The organization, development, and pedagogy for the applied string instrument studio.
Pre req: 2261, or permission of instructor. Not open to students with credit for 267.

2271 Introduction to Music Enterprise U 3
An introductory survey of the patterns and practices associated with the intersection of music, commerce, and society from the early 19th century to the present.
Pre req: Not open to students with credit for 271.

2288 Bebop to Doowop to Hiphop: The Rhythm and Blues Tradition U 3
Examines the aesthetic and historical evolution of Rhythm and Blues: Black music tradition including Bebop, Rock and Roll and Hip hop redefining American popular culture post WWII.
Pre req: Not open to students with credit for 288 or AfAmASt 2288 (288). GE VPA and diversity soc div in the US course. Cross-listed in AfAmASt.

2297 Music Education Laboratory Ensemble U 1
Laboratory ensembles which provide performance experience on secondary instruments.
Repeatable to a maximum of 3 cr hrs.

2413 Diction for Singers I U 2
Introduction to phonetic alphabet and advanced study of phonetics and sound production as applied to singing in Italian.
Pre req: Music major.
Music 331

3348 Music on the Move in a Globalized World  U  3
Survey of globalization's effects on musical cultures around the world; explores both the role of diasporic migration and the use of recording and broadcasting technology. Prereq: English 1110 (110) or equiv. Not open to students with credit for 348. GE VPA and diversity global studies course.

3349 The Beatles in 20th Century Music  U  3
Twentieth-century art music and popular traditions seen through the prism of the Beatles songs.
Prereq: English 1110 (110) or 1111 (111), or equiv. Not open to students with credit for 349. GE VPA course.

3350 The British Invasion: Exploring the impact of British popular music in the 1960s Offers an introduction and orientation to the popular music of the United Kingdom, most specifically, music from the country of England. It will explore the meaning and impact of the 1960s as reflected in the music of that era. Specific attention will be given to the international exchange of musical influences between the United States and the U.K.
Prereq: GPA 3.0 in respective major, and Soph standing or above. GE VPA and education abroad course.

3351 The World of Music  U  3
Introduction to music in non-Western cultures and societies and to the concepts, vocabulary, and methodology for dealing with this music.
Prereq: Soph standing or above in Music. Not open to students with credit for 2250 or 351.

3358 The Brazilian Experience: Surveying Brazilian Culture through Music and Education This course offers an overview of the complex musical culture of Brazil. Beginning with an introduction to Brazilian history, this course shall focus specifically on the musical evolution the country has experienced in its 500-year history, as well as how the European, Native American, and African influences have blended to create a distinctive musical identity.
Prereq: Permission of instructor. GE VPA course.

3364 Musical Citizenship: Advocacy, Engagement in Sound This course examines the sonic expressions of people's status, identity, rights, and duties as political subjects across multiple scales of place. We will consider the value of cultural advocacy in the public sector and social activism in the public sphere and the importance of partnering with (non)governmental institutions, community organizations, and grassroots affiliates to advance musical art.
GE VPA and diversity global studies course.

3364E Musical Citizenship: Advocacy, Engagement in Sound This course examines the sonic expressions of people's status, identity, rights, and duties as political subjects across multiple scales of place. We will consider the value of cultural advocacy in the public sector and social activism in the public sphere and the importance of partnering with (non)governmental institutions, community organizations, and grassroots affiliates to advance musical art.
GE VPA and diversity global studies course.

3370 Music for Elementary Teachers  U  2
Music literature and teaching aids for children, including singing, rhythmic, creative, and listening experiences, and their presentation.
Prereq: Not open to students with credit for 370.

3373 Music for Special Education Teachers  U  2
Music literature and teaching strategies for exceptional children, including singing, rhythmic, creative, and listening experiences.
Prereq: Jr or Sr standing, and enrollment in Special Education major. Not open to students with credit for 373.

3401.11 Applied Music - Principal - Piano  U  2
Applied piano instruction to develop musicianship, performance, and knowledge of music literature.
Prereq: 2201 (201), and enrollment in Music major. Not open to students with credit for 401.11.
Repeatable to a maximum of 6 cr hrs.

3401.12 Applied Music - Principal - Jazz Piano  U  2
Applied jazz piano instruction to develop musicianship, performance, and knowledge of music literature.
Prereq: 2201 (201), and enrollment in Music major. Repeatable to a maximum of 6 cr hrs.

3401.21 Applied Music - Principal - Voice  U  2
Applied voice instruction to develop musicianship, performance, and knowledge of music literature.
Prereq: 2201 (201), and enrollment in Music major. Repeatable to a maximum of 6 cr hrs.

3401.31 Applied Music - Principal - Violin  U  2
Applied violin instruction to develop musicianship, performance, and knowledge of music literature.
Prereq: Music 2001 (201), and enrollment in Music major. Repeatable to a maximum of 6 cr hrs.

2414 Diction for Singers II  U  2
Advanced study of phonetics and sound production as applied to singing in German and French.
Prereq: 2413, and Music major.

2470 Introduction to Music Education  U  3
Professional orientation for prospective school music teachers; study of musical development, human relations, discipline, evaluation, philosophy of teaching, and the music curriculum; comprehensive field experience.
Prereq: Psych 1100, and Soph standing, and Enrollment in Music Education major. Not open to students with credit for 470.

2470E Introduction to Music Education  U  3
Professional orientation for prospective school music teachers; study of musical development, human relations, discipline, evaluation, philosophy of teaching, and the music curriculum; comprehensive field experience.
Prereq: Honors standing, Psych 1100, and Soph standing in Music Education; or permission of instructor.

3021 Music Theory III for Non-Majors  U  2
Principles of 18th- and 19th-century chromatic harmony and modulation; extensive practice in part-writing, analysis, and creative application.
Prereq: 2022 or 2222, and enrollment in non-Music major. Not open to students with credit for 421.

3022 Music Theory IV for Non-Majors  U  2
Introduction to the study of the structural principles and forms of homophonic music; Extensive practice through written drill, analysis and creative projects; composition techniques in 20th century music.
Prereq: 3021 or 3421, and enrollment in non-Music major. Not open to students with credit for 422.

3210 Jazz Improvisation II  U  2
Improvisation techniques utilizing blues and pentatonic scales, elaboration of seventh chord structures; analysis of transcribed solos; improvisation of vertical, horizontal, and combination tunes; exploration of Bebop and post-bop literature.
Prereq: 2209. Not open to students with credit for 210. This course is available for EM credit.

3310 Introduction to Operatic Stage Techniques  U  2
An introductory course to stage movement techniques, character analysis, role preparation, as applied to the operatic stage.
Prereq: 3401.21 or 3402.21, or permission of instructor. Not open to students with credit for 310.

3312 Opera Performance  U  ½ - 2
Instruction and experience in preparation for opera performance, including study of operatic literature and coaching of operatic roles.
Prereq: 3310, and audition; or permission of instructor. Repeatable to a maximum of 10 cr hrs.

3315 Voice Science and Pedagogy for the Undergraduate  U  3
Vocal pedagogy, anatomy, and physiology of the vocal mechanism.
Prereq: Open only to Voice majors.

3330 Music Production and Reception: Institutions, Patterns, and Practices Intermediate survey of the interrelationships of music, media, and commerce in society, emphasizing technology, economics, law, and the public purposes of the musical arts.
Prereq: 2271. Not open to students with credit for 330.

3342 Introduction to Opera  U  3
An introduction to the dramatic and musical conventions of opera.
Prereq: English 1110 (110) or 1111 (111). Not open to students with credit for 342. GE VPA course.

3343 Music, Body and Brain  U  3
An introduction to the relationship between culturally conditioned musical experience and physiological and cognitive processes.
Prereq: English 1110 or equiv. GE VPA course.

3344 Film Music  U  3
A study of how music has functioned in film across its century-long history, as produced in Hollywood and in other countries, and by filmmakers independent of the studio system.
Prereq: English 1110 or 1111. GE VPA course.

3345 Topics in Music History  U  3
Topics vary; study of selected topics in music history and world music. Repeatable to a maximum of 15 cr hrs. GE VPA course.

3347 From Bach to Beethoven  U  3
The styles and genres of five eminent composers of the 18th century: Bach, Handel, Mozart, Haydn, and Beethoven.
Prereq: English 1110 (110) or 1111 (111). Not open to students with credit for 347. GE VPA and diversity global studies course.

3350 Musical Citizenship: Advocacy, Advocacy and Engagement in Sound This course examines the sonic expressions of people's status, identity, rights, and duties as political subjects across multiple scales of place. We will consider the value of cultural advocacy in the public sector and social activism in the public sphere and the importance of partnering with (non)governmental institutions, community organizations, and grassroots affiliates to advance musical art.
GE VPA and diversity global studies course.

3364 Musical Citizenship: Advocacy, Advocacy and Engagement in Sound This course examines the sonic expressions of people's status, identity, rights, and duties as political subjects across multiple scales of place. We will consider the value of cultural advocacy in the public sector and social activism in the public sphere and the importance of partnering with (non)governmental institutions, community organizations, and grassroots affiliates to advance musical art.
GE VPA and diversity global studies course.

3370 Music for Elementary Teachers  U  2
Music literature and teaching aids for children, including singing, rhythmic, creative, and listening experiences, and their presentation.
Prereq: Not open to students with credit for 370.

3373 Music for Special Education Teachers  U  2
Music literature and teaching strategies for exceptional children, including singing, rhythmic, creative, and listening experiences.
Prereq: Jr or Sr standing, and enrollment in Special Education major. Not open to students with credit for 373.

3401.11 Applied Music - Principal - Piano  U  2
Applied piano instruction to develop musicianship, performance, and knowledge of music literature.
Prereq: 2201 (201), and enrollment in Music major. Not open to students with credit for 401.11.
Repeatable to a maximum of 6 cr hrs.

3401.12 Applied Music - Principal - Jazz Piano  U  2
Applied jazz piano instruction to develop musicianship, performance, and knowledge of music literature.
Prereq: 2201 (201), and enrollment in Music major. Repeatable to a maximum of 6 cr hrs.

3401.21 Applied Music - Principal - Voice  U  2
Applied voice instruction to develop musicianship, performance, and knowledge of music literature.
Prereq: 2201 (201), and enrollment in Music major. Repeatable to a maximum of 6 cr hrs.

3401.31 Applied Music - Principal - Violin  U  2
Applied violin instruction to develop musicianship, performance, and knowledge of music literature.
Prereq: Music 2001 (201), and enrollment in Music major. Repeatable to a maximum of 6 cr hrs.
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<th>CRN</th>
<th>Course Code</th>
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<td>Applied Music - Principal - Cello</td>
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<td>3401.55</td>
<td>Applied Music - Principal - Tuba</td>
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Applied viola instruction to develop musicianship, performance, and knowledge of music literature.
Prereq: Music 2201 (201), and enrollment in Music major. Repeatable to a maximum of 6 cr hrs.

Applied cello instruction to develop musicianship, performance, and knowledge of music literature.
Prereq: Music 2201 (201), and enrollment in Music major. Repeatable to a maximum of 6 cr hrs.

Applied double bass instruction to develop musicianship, performance, and knowledge of music literature.
Prereq: Music 2201 (201), and enrollment in Music major. Repeatable to a maximum of 6 cr hrs.

Applied bassoon instruction to develop musicianship, performance, and knowledge of music literature.
Prereq: Music 2201 (201), and enrollment in Music major. Repeatable to a maximum of 6 cr hrs.

Applied piano instruction to develop professional qualities of musicianship, technique, and knowledge of music literature.
Prereq: 2201 (201). Open only to BM in Performance majors. Repeatable to a maximum of 12 cr hrs.

Applied oboe instruction to develop musicianship, performance, and knowledge of music literature.
Prereq: Music 2201 (201), and enrollment in Music major. Repeatable to a maximum of 6 cr hrs.

Applied saxophone instruction to develop musicianship, performance, and knowledge of music literature.
Prereq: Music 2201 (201), and enrollment in Music major. Repeatable to a maximum of 6 cr hrs.

Applied clarinet instruction to develop musicianship, performance, and knowledge of music literature.
Prereq: Music 2201 (201), and enrollment in Music major. Repeatable to a maximum of 6 cr hrs.

Applied saxophone instruction to develop musicianship, performance, and knowledge of music literature.
Prereq: Music 2201 (201), and enrollment in Music major. Repeatable to a maximum of 6 cr hrs.

Applied horn instruction to develop musicianship, performance, and knowledge of music literature.
Prereq: Music 2201 (201), and enrollment in Music major. Repeatable to a maximum of 6 cr hrs.

Applied trumpet instruction to develop musicianship, performance, and knowledge of music literature.
Prereq: 2201 (201). Open only to music majors. Repeatable to a maximum of 6 cr hrs.

Applied trombone instruction to develop musicianship, performance, and knowledge of music literature.
Prereq: 2201 (201). Open only to music majors. Repeatable to a maximum of 6 cr hrs.

Applied jazz saxophone instruction to develop musicianship, performance, and knowledge of music literature.
Prereq: 2201 (201). Open only to music majors. Repeatable to a maximum of 6 cr hrs.

Applied double bass instruction to develop professional qualities of musicianship, technique, and knowledge of music literature.
Prereq: 2201 (201). Open only to BM in Performance majors. Repeatable to a maximum of 12 cr hrs.

Applied clarinet instruction to develop professional qualities of musicianship, technique, and knowledge of music literature.
Prereq: 2201 (201). Open only to BM in Performance majors. Repeatable to a maximum of 12 cr hrs.

Applied jazz saxophone instruction to develop professional qualities of musicianship, technique, and knowledge of music literature.
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Applied oboe instruction to develop professional qualities of musicianship, technique, and knowledge of music literature.
Prereq: 2201 (201). Open only to BM in Performance majors. Repeatable to a maximum of 12 cr hrs.

Applied harp instruction to develop musicianship, performance, and knowledge of music literature.
Prereq: 2201 (201). Open only to Music majors. Repeatable to a maximum of 6 cr hrs.

Applied jazz trumpet instruction to develop musicianship, performance, and knowledge of music literature.
Prereq: 2201 (201). Open only to Music majors. Repeatable to a maximum of 6 cr hrs.

Applied jazz trombone instruction to develop musicianship, performance, and knowledge of music literature.
Prereq: 2201 (201). Open only to Music majors. Repeatable to a maximum of 6 cr hrs.

Applied percussion instruction to develop musicianship, performance, and knowledge of music literature.
Prereq: 2201 (201). Open only to Music majors. Repeatable to a maximum of 6 cr hrs.

Applied jazz percussion instruction to develop musicianship, performance, and knowledge of music literature.
Prereq: 2201 (201). Open only to Music majors. Repeatable to a maximum of 6 cr hrs.

Applied harp instruction to develop musicianship, performance, and knowledge of music literature.
Prereq: 2201 (201). Open only to Music majors. Repeatable to a maximum of 6 cr hrs.

Applied piano instruction to develop professional qualities of musicianship, technique, and knowledge of music literature.
Prereq: 2201 (201). Open only to BM in Performance majors. Repeatable to a maximum of 12 cr hrs.

Applied oboe instruction to develop professional qualities of musicianship, technique, and knowledge of music literature.
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Applied saxophone instruction to develop professional qualities of musicianship, technique, and knowledge of music literature.
Prereq: 2201 (201). Open only to BM in Performance majors. Repeatable to a maximum of 12 cr hrs.

Applied oboe instruction to develop professional qualities of musicianship, technique, and knowledge of music literature.
Prereq: 2201 (201). Open only to BM in Performance majors. Repeatable to a maximum of 12 cr hrs.
3402.51  Applied Music (Principal): Horn  U  4
Horn instruction to develop professional qualities of musicianship, technique, and knowledge of music literature.
Prereq: 2201 (201). Open only to BM in Performance majors. Repeatable to a maximum of 12 cr hrs.

3402.52  Applied Music (Principal): Trumpet  U  4
Trumpet instruction to develop professional qualities of musicianship, technique, and knowledge of music literature.
Prereq: 2201 (201). Open only to BM in Performance majors. Repeatable to a maximum of 12 cr hrs.

3402.53  Applied Music (Principal): Trombone  U  4
Trombone instruction to develop professional qualities of musicianship, technique, and knowledge of music literature.
Prereq: 2201 (201). Open only to BM in Performance majors. Repeatable to a maximum of 12 cr hrs.

3402.54  Applied Music (Principal): Euphonium  U  4
Euphonium instruction to develop professional qualities of musicianship, technique, and knowledge of music literature.
Prereq: 2201 (201). Open only to BM in Performance majors. Repeatable to a maximum of 12 cr hrs.

3402.71  Applied Music (Principal): Percussion  U  4
Percussion instruction to develop professional qualities of musicianship, technique, and knowledge of music literature.
Prereq: 2201 (201). Open only to BM in Performance majors. Repeatable to a maximum of 12 cr hrs.

3402.91  Applied Music (Principal): Harp  U  4
Harp instruction to develop professional qualities of musicianship, technique, and knowledge of music literature.
Prereq: 2201 (201). Open only to BM in Performance majors. Repeatable to a maximum of 12 cr hrs.

3403.11  Applied Music (Principal): Piano  U  2
Applied piano instruction required in the BA curriculum to develop musicianship, performance, and knowledge of music literature.
Prereq: 2201 (201). Open to BA in Music majors only. Repeatable to a maximum of 12 cr hrs.

3403.12  Applied Music (Principal): Jazz Piano  U  2
Applied jazz piano instruction in the BA curriculum to develop musicianship, performance and knowledge of music literature.
Prereq: 2201 (201). Open to BA in Music students only. Repeatable to a maximum of 12 cr hrs.

3403.21  Applied Music (Principal): Voice  U  2
Applied voice instruction in the BA curriculum to develop musicianship, performance and knowledge of music literature.
Prereq: 2201 (201). Open to BA in Music students only. Repeatable to a maximum of 12 cr hrs.

3403.31  Applied Music (Principal): Violin  U  2
Applied violin instruction in the BA curriculum to develop musicianship, performance and knowledge of music literature.
Prereq: 2201 (201). Open to BA in Music students only. Repeatable to a maximum of 12 cr hrs.

3403.33  Applied Music (Principal): Cello  U  2
Applied cello instruction required in the BA curriculum to develop musicianship, performance, and knowledge of music literature.
Prereq: 2201 (201). Open to BA in Music students only. Repeatable to a maximum of 12 cr hrs.

3403.34  Applied Music (Principal): Double Bass  U  2
Applied double bass instruction required in the BA curriculum to develop musicianship, performance, and knowledge of music literature.
Prereq: 2201 (201). Open to BA in Music students only. Repeatable to a maximum of 12 cr hrs.

3403.37  Applied Music (Principal): Jazz Guitar  U  2
Applied jazz guitar instruction required in the BA curriculum to develop musicianship, performance, and knowledge of music literature.
Prereq: 2201 (201). Open to BA in Music students only. Repeatable to a maximum of 12 cr hrs.

3403.41  Applied Music (Principal): Flute  U  2
Applied flute instruction required in the BA curriculum to develop musicianship, performance, and knowledge of music literature.
Prereq: 2201 (201). Open to BA in Music students only. Repeatable to a maximum of 12 cr hrs.

3403.42  Applied Music (Principal): Oboe  U  2
Applied oboe instruction required in the BA curriculum to develop musicianship, performance, and knowledge of music literature.
Prereq: 2201 (201). Open to BA Music students only. Repeatable to a maximum of 12 cr hrs.

3403.43  Applied Music (Principal): Clarinet  U  2
Applied clarinet instruction required in the BA curriculum to develop musicianship, performance, and knowledge of music literature.
Prereq: 2201 (201). Open to BA Music students only. Repeatable to a maximum of 12 cr hrs.

3403.46  Applied Music (Principal): Bassoon  U  2
Applied bassoon instruction required in the BA curriculum to develop musicianship, performance, and knowledge of music literature.
Prereq: 2201 (201). Open to BA in Music students only. Repeatable to a maximum of 12 cr hrs.

3403.47  Applied Music (Principal): Jazz Saxophone  U  2
Applied jazz saxophone instruction required in the BA curriculum to develop musicianship, performance, and knowledge of music literature.
Prereq: 2201 (201). Open to BA in Music students only. Repeatable to a maximum of 12 cr hrs.

3403.51  Applied Music (Principal): Horn  U  2
Applied horn instruction required in the BA curriculum to develop musicianship, performance, and knowledge of music literature.
Prereq: 2201 (201). Open to BA in Music students only. Repeatable to a maximum of 12 cr hrs.

3403.52  Applied Music (Principal - Trumpet  U  2
Applied trumpet instruction required in the BA curriculum to develop musicianship, performance, and knowledge of music literature.
Prereq: 2201 (201), and enrollment in BA in Music. Repeatable to a maximum of 12 cr hrs.

3403.53  Applied Music (Principal - Trombone  U  2
Applied trombone instruction required in the BA curriculum to develop musicianship, performance, and knowledge of music literature.
Prereq: 2201 (201), and enrollment in BA in Music. Repeatable to a maximum of 12 cr hrs.

3403.54  Applied Music (Principal - Euphonium  U  2
Applied euphonium instruction required in the BA curriculum to develop musicianship, performance, and knowledge of music literature.
Prereq: 2201 (201), and enrollment in BA in Music. Repeatable to a maximum of 12 cr hrs.

3403.55  Applied Music (Principal - Tuba  U  2
Applied tuba instruction in the BA curriculum to develop musicianship, performance and knowledge of music literature.
Prereq: 2201 (201), and enrollment in BA in Music. Repeatable to a maximum of 12 cr hrs.

3403.71  Applied Music (Principal - Percussion  U  2
Applied percussion instruction in the BA curriculum to develop musicianship, performance and knowledge of music literature.
Prereq: 2201 (201), and enrollment in BA in Music. Repeatable to a maximum of 12 cr hrs.

3403.72  Applied Music (Principal - Jazz Percussion  U  2
Applied jazz percussion instruction in the BA curriculum to develop musicianship, performance and knowledge of music literature.
Prereq: 2201 (201), and enrollment in BA in Music. Repeatable to a maximum of 12 cr hrs.

3403.91  Applied Music (Principal - Harp  U  2
Applied harp instruction in the BA curriculum to develop musicianship, performance and knowledge of music literature.
Prereq: 2201 (201), and enrollment in BA in Music. Repeatable to a maximum of 12 cr hrs.

3421  Music Theory III  U  2
Principles of 18th- and 19th-century chromatic harmony and modulation; extensive practice in part-writing, analysis, and creative application.
Prereq: 2222, and enrollment in Music major. Not open to students with credit for 421.

3422  Music Theory IV  U  2
Introduction to the study of the structural principles and forms of homophonic music; Extensive practice through written drill, analysis and creative projects; composition techniques in 20th century music.
Prereq: 3421, and enrollment in Music major. Not open to students with credit for 422.

3424  Aural Training III  U  2
Intensive training in aural musicianship and music reading; practical application through solfeggio, dictation, and keyboard drill.
Prereq: 2225. Not open to students with credit for 425.

3425  Aural Training IV  U  2
Advanced training in aural musicianship and music reading; practical application through solfeggio, dictation, and keyboard drill.
Prereq: 3424. Not open to students with credit for 425.

3427  Keyboard Harmony I  U  2
Systematic review and utilization of basic harmonic materials at the keyboard.
Prereq: 3422. Not open to students with credit for 427.

3428  Keyboard Harmony II  U  2
Introduction and practical experience at score reading at the keyboard.
Prereq: 3427. Not open to students with credit for 428.
Protest in American Music

Scoring projects for jazz combos of various sizes and instrumentation.

Scoring projects for the stage band, with concentration on voicing, ranges, doublings, balance, and notational procedures.

Stylistic variants of jazz involving technical and structural aspects so that the student may recognize, play, and score them authentically.

Functional music making and introduction to K-8 methods.

Group study of various topics in music.

Review of selected music topics; intended for beginning graduate students in music.

Review of selected music topics; intended for beginning graduate students in music.

Applied piano instruction to develop musicianship, performance, and knowledge of music literature.

Applied piano instruction to develop musicianship, performance, and knowledge of music literature.

Applied voice instruction to develop musicianship, performance, and knowledge of music literature.

Applied voice instruction to develop musicianship, performance, and knowledge of music literature.

Applied double bass instruction to develop musicianship, performance, and knowledge of music literature.

Applied cello instruction to develop musicianship, performance, and a wide reading knowledge of music literature.

Prereq: 3401 (401), and enrollment in BA in Music. Repeatable to a maximum of 6 cr hrs.

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<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
<th>Prerequisites and Restrictions</th>
</tr>
</thead>
<tbody>
<tr>
<td>4502.33</td>
<td>Applied Music - Principal - Cello</td>
<td>4</td>
<td>U Applied cello instruction to develop musicianship, performance, and knowledge of music literature. Prereq: 3402 (402), and enrollment in BA in Music. Repeatable to a maximum of 12 cr hrs.</td>
</tr>
<tr>
<td>4502.34</td>
<td>Applied Music - Principal - Double Bass</td>
<td>4</td>
<td>U Applied double bass instruction to develop musicianship, performance, and knowledge of music literature. Prereq: 3402 (402), and enrollment in BA in Music. Repeatable to a maximum of 12 cr hrs.</td>
</tr>
<tr>
<td>4502.37</td>
<td>Applied Music - Principal - Jazz Guitar</td>
<td>4</td>
<td>U Applied jazz guitar instruction to develop musicianship, performance, and knowledge of music literature. Prereq: 3402 (402), and enrollment in BA in Music. Repeatable to a maximum of 12 cr hrs.</td>
</tr>
<tr>
<td>4502.41</td>
<td>Applied Music - Principal - Flute</td>
<td>4</td>
<td>U Applied flute instruction to develop musicianship, performance, and knowledge of music literature. Prereq: 3402 (402), and enrollment in BA in Music. Repeatable to a maximum of 12 cr hrs.</td>
</tr>
<tr>
<td>4502.43</td>
<td>Applied Music (Principal): Clarinet</td>
<td>4</td>
<td>U Applied clarinet instruction to develop musicianship, performance, and knowledge of music literature. Prereq: 3402 (402). Open only to Music majors. Repeatable to a maximum of 12 cr hrs.</td>
</tr>
<tr>
<td>4502.51</td>
<td>Applied Music (Principal): Horn</td>
<td>4</td>
<td>U Applied horn instruction to develop musicianship, performance, and knowledge of music literature. Prereq: 3402 (402). Open only to Music majors. Repeatable to a maximum of 12 cr hrs.</td>
</tr>
<tr>
<td>4502.52</td>
<td>Applied Music (Principal): Trumpet</td>
<td>4</td>
<td>U Applied trumpet instruction to develop musicianship, performance, and knowledge of music literature. Prereq: 3402 (402). Open only to Music majors. Repeatable to a maximum of 12 cr hrs.</td>
</tr>
<tr>
<td>4502.53</td>
<td>Applied Music (Principal): Trombone</td>
<td>4</td>
<td>U Applied trombone instruction to develop musicianship, performance, and knowledge of music literature. Prereq: 3402 (402). Open only to Music majors. Repeatable to a maximum of 12 cr hrs.</td>
</tr>
<tr>
<td>4502.54</td>
<td>Applied Music (Principal): Euphonium</td>
<td>4</td>
<td>U Applied euphonium instruction to develop musicianship, performance, and knowledge of music literature. Prereq: 3402 (402). Open only to Music majors. Repeatable to a maximum of 12 cr hrs.</td>
</tr>
<tr>
<td>4502.55</td>
<td>Applied Music (Principal): Tuba</td>
<td>4</td>
<td>U Applied tuba instruction to develop musicianship, performance, and knowledge of music literature. Prereq: 3402 (402). Open only to Music majors. Repeatable to a maximum of 12 cr hrs.</td>
</tr>
<tr>
<td>4502.56</td>
<td>Applied Music (Principal): Jazz Trumpet</td>
<td>4</td>
<td>U Applied jazz trumpet instruction to develop musicianship, performance, and knowledge of music literature. Prereq: 3402 (402). Open only to Music majors. Repeatable to a maximum of 12 cr hrs.</td>
</tr>
<tr>
<td>4502.57</td>
<td>Applied Music (Principal): Jazz Trombone</td>
<td>4</td>
<td>U Applied jazz trombone instruction to develop musicianship, performance, and knowledge of music literature. Prereq: 3402 (402). Open only to Music majors. Repeatable to a maximum of 12 cr hrs.</td>
</tr>
<tr>
<td>4502.72</td>
<td>Applied Music (Principal): Jazz Percussion</td>
<td>4</td>
<td>U Applied jazz percussion instruction to develop musicianship, performance, and knowledge of music literature. Prereq: 3402 (402). Open only to Music majors. Repeatable to a maximum of 12 cr hrs.</td>
</tr>
<tr>
<td>4502.91</td>
<td>Applied Music (Principal): Harp</td>
<td>4</td>
<td>U Applied harp instruction to develop musicianship, performance, and knowledge of music literature. Prereq: 3402 (402). Open only to Music majors. Repeatable to a maximum of 12 cr hrs.</td>
</tr>
</tbody>
</table>

**Jazz Pedagogy**

4506
Organization and operation of the public school jazz ensemble.
Prereq: Not open to students with credit for 566.
### Teaching General Music in Secondary Schools

**Prereq:** Professional standing in Music Education. Not open to students with credit for 572.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>4574</td>
<td>Teaching Choral Music in Elementary and Middle Schools</td>
<td>2</td>
</tr>
</tbody>
</table>

A comprehensive review of choral music methods and rehearsal techniques for young learners. **Prereq:** Professional standing in Music Education.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>4575</td>
<td>Teaching Choral Music in Secondary Schools</td>
<td>2</td>
</tr>
</tbody>
</table>

Choral music rehearsal methods, techniques and strategies for developing choral ensembles in secondary schools. **Prereq:** Professional standing in Music Education.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>4576</td>
<td>Teaching Instrumental Music in Elementary and Middle Schools</td>
<td>2</td>
</tr>
</tbody>
</table>

The role of instrumental music instruction in education, techniques of teaching instrumental music, study of music appropriate to musical organizations in elementary and middle schools. **Prereq:** 2261.03 (261.03), 2261.04 (261.42 and 261.46), 2261.07 (261.07), 2262.03 (262.03), 2262.04 (262.04), and 2262.05 (262.05), and professional standing in Music Education. Not open to students with credit for 576.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>4577</td>
<td>Teaching Instrumental Music in Secondary Schools</td>
<td>2</td>
</tr>
</tbody>
</table>

The role of instrumental music instruction in public education, techniques of teaching instrumental music, study of music appropriate to musical organizations in secondary schools. **Prereq:** 2261.03 (261.03), 2261.04 (261.42 and 261.46), 2261.07 (261.07), 2262.03 (262.03), 2262.04 (262.04), and 2262.05 (262.05), and professional standing in Music Education. Not open to students with credit for 576.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>4586</td>
<td>Student Teaching in Music in Elementary Schools</td>
<td>6</td>
</tr>
</tbody>
</table>

Assignment to area elementary schools for teaching observations. **Prereq:** Professional standing in Music Education. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

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<tr>
<th>Course Code</th>
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<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>4587</td>
<td>Student Teaching in Music in Secondary Schools</td>
<td>6</td>
</tr>
</tbody>
</table>

Assignment to area secondary schools for observation. **Prereq:** Professional standing in Music Education. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

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<tr>
<th>Course Code</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>4588</td>
<td>Improvisation Methods</td>
<td>2</td>
</tr>
</tbody>
</table>

Introduction to musical improvisation in performance and pedagogy. Improvisation in individual and group contexts. **Prereq:** 3422, or permission of instructor.

### Teaching Instrumental Music in Secondary Schools

**Prereq:** Professional standing in Music Education. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

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<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>4601.11</td>
<td>Applied Music (Principal): Piano</td>
<td>2</td>
</tr>
</tbody>
</table>

Advanced piano instruction to develop musicianship, performance, and knowledge of music literature. **Prereq:** 4501 (501). Open to BME majors only. Repeatable to a maximum of 8 cr hrs.

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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>4601.21</td>
<td>Applied Music (Principal): Voice</td>
<td>2</td>
</tr>
</tbody>
</table>

Advanced voice instruction to develop musicianship, performance, and knowledge of music literature. **Prereq:** 4501 (501). Open only to BME majors only. Repeatable to a maximum of 8 cr hrs.

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<tr>
<th>Course Code</th>
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<th>Credit</th>
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<tbody>
<tr>
<td>4601.31</td>
<td>Applied Music (Principal): Violin</td>
<td>2</td>
</tr>
</tbody>
</table>

Advanced violin instruction to develop musicianship, performance, and knowledge of music literature. **Prereq:** 4501 (501). Open only to BME majors. Repeatable to a maximum of 8 cr hrs.

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<tr>
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<tbody>
<tr>
<td>4601.41</td>
<td>Applied Music (Principal): Flute</td>
<td>2</td>
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</table>

Advanced flute instruction to develop musicianship, performance, and knowledge of music literature. **Prereq:** 4501 (501). Open only to BME majors. Repeatable to a maximum of 8 cr hrs.

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<tr>
<th>Course Code</th>
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<th>Credit</th>
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<tbody>
<tr>
<td>4601.43</td>
<td>Applied Music (Principal): Clarinet</td>
<td>2</td>
</tr>
</tbody>
</table>

Advanced clarinet instruction to develop musicianship, performance, and knowledge of music literature. **Prereq:** 4501 (501). Open only to BME majors. Repeatable to a maximum of 8 cr hrs.

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<th>Course Code</th>
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<th>Credit</th>
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<tbody>
<tr>
<td>4601.46</td>
<td>Applied Music (Principal): Bassoon</td>
<td>2</td>
</tr>
</tbody>
</table>

Advanced bassoon instruction to develop musicianship, performance, and knowledge of music literature. **Prereq:** 4501 (501). Open only to BME majors. Repeatable to a maximum of 8 cr hrs.

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<tr>
<th>Course Code</th>
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<th>Credit</th>
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<tbody>
<tr>
<td>4601.47</td>
<td>Applied Music (Principal): Jazz Saxophone</td>
<td>2</td>
</tr>
</tbody>
</table>

Advanced jazz saxophone instruction to develop musicianship, performance, and knowledge of music literature. **Prereq:** 4501 (501). Open only to BME majors. Repeatable to a maximum of 8 cr hrs.

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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>4601.52</td>
<td>Applied Music (Principal): Trumpet</td>
<td>2</td>
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</tbody>
</table>

Advanced trumpet instruction to develop musicianship, performance, and knowledge of music literature. **Prereq:** 4501 (501). Open only to BME majors. Repeatable to a maximum of 8 cr hrs.

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<tbody>
<tr>
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<td>Applied Music (Principal): Trombone</td>
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Advanced trombone instruction to develop musicianship, performance, and knowledge of music literature. **Prereq:** 4501 (501). Open only to BME majors. Repeatable to a maximum of 8 cr hrs.

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<tbody>
<tr>
<td>4601.55</td>
<td>Applied Music (Principal): Tuba</td>
<td>2</td>
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</tbody>
</table>

Advanced tuba instruction to develop musicianship, performance, and knowledge of music literature. **Prereq:** 4501 (501). Open only to BME majors. Repeatable to a maximum of 8 cr hrs.

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<tr>
<th>Course Code</th>
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<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>4601.56</td>
<td>Applied Music (Principal): Jazz Trumpet</td>
<td>2</td>
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</tbody>
</table>

Advanced jazz trumpet instruction to develop musicianship, performance, and knowledge of music literature. **Prereq:** 4501 (501). Open only to BME majors. Repeatable to a maximum of 8 cr hrs.

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<tr>
<th>Course Code</th>
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<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>4601.91</td>
<td>Applied Music (Principal): Harp</td>
<td>2</td>
</tr>
</tbody>
</table>

Advanced harp instruction to develop musicianship, performance, and knowledge of music literature. **Prereq:** 4501 (501). Open only to BME majors. Repeatable to a maximum of 8 cr hrs.

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<tr>
<th>Course Code</th>
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<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>4602.11</td>
<td>Applied Music (Principal): Piano</td>
<td>4</td>
</tr>
</tbody>
</table>

Advanced piano instruction to develop professional qualities of musicianship, technique, and literature. **Prereq:** 4502 (502), and enrollment in BM major. Repeatable to a maximum of 12 cr hrs.

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<thead>
<tr>
<th>Course Code</th>
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<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>4602.21</td>
<td>Applied Music (Principal): Voice</td>
<td>4</td>
</tr>
</tbody>
</table>

Advanced voice instruction to develop professional qualities of musicianship, technique, and literature. **Prereq:** 4502 (502), and enrollment in BM major. Repeatable to a maximum of 12 cr hrs.

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<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>4602.31</td>
<td>Applied Music (Principal): Violin</td>
<td>4</td>
</tr>
</tbody>
</table>

Advanced violin instruction to develop professional qualities of musicianship, technique, and literature. **Prereq:** 4502 (502), and enrollment in BM major. Repeatable to a maximum of 12 cr hrs.

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<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>4602.33</td>
<td>Applied Music (Principal): Cello</td>
<td>4</td>
</tr>
</tbody>
</table>

Advanced cello instruction to develop professional qualities of musicianship, technique and literature. **Prereq:** 4502 (502), and enrollment in BM major. Repeatable to a maximum of 12 cr hrs.

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<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>4602.41</td>
<td>Applied Music (Principal): Double Bass</td>
<td>4</td>
</tr>
</tbody>
</table>

Advanced double bass instruction to develop professional qualities of musicianship, technique and literature. **Prereq:** 4502 (502), and enrollment in BM major. Repeatable to a maximum of 12 cr hrs.

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<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>4602.42</td>
<td>Applied Music (Principal): Oboe</td>
<td>4</td>
</tr>
</tbody>
</table>

Advanced oboe instruction to develop professional qualities of musicianship, technique and literature. **Prereq:** 4502 (502), and enrollment in BM major. Repeatable to a maximum of 12 cr hrs.

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<tr>
<th>Course Code</th>
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<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>4602.43</td>
<td>Applied Music (Principal): Clarinet</td>
<td>4</td>
</tr>
</tbody>
</table>

Advanced clarinet instruction to develop professional qualities of musicianship, technique and literature. **Prereq:** 4502 (502), and enrollment in BM major. Repeatable to a maximum of 12 cr hrs.

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<tr>
<th>Course Code</th>
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<th>Credit</th>
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<tbody>
<tr>
<td>4602.45</td>
<td>Applied Music (Principal): Saxophone</td>
<td>4</td>
</tr>
</tbody>
</table>

Advanced saxophone instruction to develop professional qualities of musicianship, technique and literature. **Prereq:** 4502 (502), and enrollment in BM major. Repeatable to a maximum of 12 cr hrs.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
<th>Credits</th>
<th>Repeatable</th>
<th>Grading</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>462.46</td>
<td>Applied Music - Principal - Bassoon</td>
<td>Advanced bassoon instruction to develop professional qualities of musicianship, technique, and literature. Prereq: 4502 (502), and enrollment in BM major. Repeatable to a maximum of 12 cr hrs.</td>
<td>U 4</td>
<td></td>
<td>S/U</td>
<td></td>
</tr>
<tr>
<td>462.47</td>
<td>Applied Music - Principal - Jazz Saxophone</td>
<td>Advanced jazz saxophone instruction to develop professional qualities of musicianship, technique, and literature. Prereq: 4502 (502), and enrollment in BM major. Repeatable to a maximum of 12 cr hrs.</td>
<td>U 4</td>
<td></td>
<td>S/U</td>
<td></td>
</tr>
<tr>
<td>462.51</td>
<td>Applied Music - Principal - Horn</td>
<td>Advanced horn instruction to develop professional qualities of musicianship, technique, and literature. Prereq: 4502 (502), and enrollment in BM major. Repeatable to a maximum of 12 cr hrs.</td>
<td>U 4</td>
<td></td>
<td>S/U</td>
<td></td>
</tr>
<tr>
<td>462.52</td>
<td>Applied Music - Principal - Trumpet</td>
<td>Advanced trumpet instruction to develop professional qualities of musicianship, technique, and literature. Prereq: 4502 (502), and enrollment in BM major. Repeatable to a maximum of 12 cr hrs.</td>
<td>U 4</td>
<td></td>
<td>S/U</td>
<td></td>
</tr>
<tr>
<td>462.53</td>
<td>Applied Music - Principal - Trombone</td>
<td>Advanced trombone instruction to develop professional qualities of musicianship, technique, and literature. Prereq: 4502 (502), and enrollment in BM major. Repeatable to a maximum of 12 cr hrs.</td>
<td>U 4</td>
<td></td>
<td>S/U</td>
<td></td>
</tr>
<tr>
<td>462.54</td>
<td>Applied Music - Principal - Euphonium</td>
<td>Advanced euphonium instruction to develop professional qualities of musicianship, technique, and literature. Prereq: 4502 (502), and enrollment in BM major. Repeatable to a maximum of 12 cr hrs.</td>
<td>U 4</td>
<td></td>
<td>S/U</td>
<td></td>
</tr>
<tr>
<td>462.55</td>
<td>Applied Music - Principal - Tuba</td>
<td>Advanced tuba instruction to develop professional qualities of musicianship, technique, and literature. Prereq: 4502 (502), and enrollment in BM major. Repeatable to a maximum of 12 cr hrs.</td>
<td>U 4</td>
<td></td>
<td>S/U</td>
<td></td>
</tr>
<tr>
<td>462.56</td>
<td>Applied Music - Principal - Jazz Trumpet</td>
<td>Advanced jazz trumpet instruction to develop professional qualities of musicianship, technique, and literature. Prereq: 4502 (502), and enrollment in BM major. Repeatable to a maximum of 12 cr hrs.</td>
<td>U 4</td>
<td></td>
<td>S/U</td>
<td></td>
</tr>
<tr>
<td>462.57</td>
<td>Applied Music - Principal - Jazz Trombone</td>
<td>Advanced jazz trombone instruction to develop professional qualities of musicianship, technique, and literature. Prereq: 4502 (502), and enrollment in BM major. Repeatable to a maximum of 12 cr hrs.</td>
<td>U 4</td>
<td></td>
<td>S/U</td>
<td></td>
</tr>
<tr>
<td>462.71</td>
<td>Applied Music - Principal - Percussion</td>
<td>Advanced percussion instruction to develop professional qualities of musicianship, technique, and literature. Prereq: 4502 (502), and enrollment in BM major. Repeatable to a maximum of 12 cr hrs.</td>
<td>U 4</td>
<td></td>
<td>S/U</td>
<td></td>
</tr>
<tr>
<td>462.72</td>
<td>Applied Music - Principal - Jazz Percussion</td>
<td>Advanced jazz percussion instruction to develop professional qualities of musicianship, technique, and literature. Prereq: 4502 (502), and enrollment in BM major. Repeatable to a maximum of 12 cr hrs.</td>
<td>U 4</td>
<td></td>
<td>S/U</td>
<td></td>
</tr>
<tr>
<td>462.91</td>
<td>Applied Music - Principal - Harp</td>
<td>Advanced harp instruction to develop professional qualities of musicianship, technique, and literature. Prereq: 4502 (502), and enrollment in BM major. Repeatable to a maximum of 12 cr hrs.</td>
<td>U 4</td>
<td></td>
<td>S/U</td>
<td></td>
</tr>
<tr>
<td>4605</td>
<td>Senior Recital</td>
<td>Required senior recital for the Bachelor of Music in Performance degree. Prereq: 4602. Repeatable to a maximum of 4 completions. This course is graded S/U.</td>
<td>U 0</td>
<td></td>
<td>S/U</td>
<td></td>
</tr>
<tr>
<td>4611</td>
<td>Piano Pedagogy</td>
<td>An analysis of teaching techniques and materials for individual and group instruction in piano with an emphasis on the elementary and intermediate levels. Prereq: 4501.11 (501.11), or permission of instructor. Not open to students with credit for 611.</td>
<td>U 3</td>
<td></td>
<td>S/U</td>
<td></td>
</tr>
<tr>
<td>4665</td>
<td>Arranging for the Music Educator</td>
<td>This class is designed for all music education majors who would like to be able to create custom music arrangements and custom edited parts for their future students. Prereq: 2220, 2263.01, 3421, and 3424.</td>
<td>U 2</td>
<td></td>
<td>S/U</td>
<td></td>
</tr>
<tr>
<td>4679.01</td>
<td>Music Theory Senior Project</td>
<td>Preparation of senior paper and presentation of paper. Prereq: Music Theory major, and permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.</td>
<td>U 2</td>
<td></td>
<td>S/U</td>
<td></td>
</tr>
<tr>
<td>4679.02</td>
<td>Composition Senior Project</td>
<td>Preparation of senior composition and half recital of student's composition. Prereq: Music Composition major, and permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.</td>
<td>U 2</td>
<td></td>
<td>S/U</td>
<td></td>
</tr>
<tr>
<td>4679.03</td>
<td>Senior Composition Project: Jazz Studies</td>
<td>Preparation of senior composition and half recital of student's composition. Prereq: Jazz Composition major, and permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.</td>
<td>U 2</td>
<td></td>
<td>S/U</td>
<td></td>
</tr>
<tr>
<td>4679.04</td>
<td>Senior Thesis: Musicology</td>
<td>Preparation of senior thesis paper; presentation of senior thesis. Prereq: Musicology major, and permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.</td>
<td>U 2</td>
<td></td>
<td>S/U</td>
<td></td>
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<tr>
<td>4679.05</td>
<td>Senior Pedagogy Project</td>
<td>Senior project in Music Pedagogy. Prereq: Enrollment in a performance major, and permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.</td>
<td>U 2</td>
<td></td>
<td>S/U</td>
<td></td>
</tr>
<tr>
<td>4679.06</td>
<td>Senior Project - B.S.</td>
<td>In this course, students will demonstrate competency in applying creativity, problem solving and critical analysis. Students earn credit by proposing, developing, and completing an independent project. Prereq: Music (BS) major and permission of instructor. This course is graded S/U.</td>
<td>U 2</td>
<td></td>
<td>S/U</td>
<td></td>
</tr>
<tr>
<td>4998</td>
<td>Undergraduate Research Non-Thesis</td>
<td>Research projects determined by instructor. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs or 4 completions. This course is graded S/U.</td>
<td>U 1 - 5</td>
<td></td>
<td>S/U</td>
<td></td>
</tr>
<tr>
<td>4999</td>
<td>Undergraduate Research Thesis</td>
<td>Research projects determined by thesis subject. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 2 completions. This course is graded S/U.</td>
<td>U 1 - 5</td>
<td></td>
<td>S/U</td>
<td></td>
</tr>
<tr>
<td>4999H</td>
<td>Honors Undergraduate Research Thesis</td>
<td>Research projects determined by thesis subject. Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 10 cr hrs or 2 completions.</td>
<td>U 1 - 5</td>
<td></td>
<td>S/U</td>
<td></td>
</tr>
<tr>
<td>5177</td>
<td>Alexander Technique</td>
<td>The relationship of kinesthetic perception and the postural reflexes to physical coordination in performance. Prereq: Permission of instructor. Repeatable to a maximum of 8 cr hrs or 4 completions. Cross-listed in Dance and Theatre.</td>
<td>U G 1 - 2</td>
<td></td>
<td>S/U</td>
<td></td>
</tr>
<tr>
<td>5187</td>
<td>Advanced Alexander Technique</td>
<td>Advanced study in Alexander Technique. Prereq: Permission of instructor. Repeatable to a maximum of 8 cr hrs or 4 completions.</td>
<td>U G 1 - 2</td>
<td></td>
<td>S/U</td>
<td></td>
</tr>
<tr>
<td>5194</td>
<td>Group Studies</td>
<td>Group study of various topics in music. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions.</td>
<td>U G 1 - 3</td>
<td></td>
<td>S/U</td>
<td></td>
</tr>
<tr>
<td>5313</td>
<td>Opera Chorus</td>
<td>A selected group of mixed voices which rehearses and performs selected operatic repertoire in conjunction with the OSU Opera. Instruction and experience in preparation for opera performance, including study of operatic choral literature. Prereq: Audition and permission of the Director of Opera or the Director of Choral Activities. Repeatable to a maximum of 15 cr hrs.</td>
<td>U G 3</td>
<td></td>
<td>S/U</td>
<td></td>
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<tr>
<td>5415</td>
<td>Diction for Choral Music Educators</td>
<td>Offers a survey of lyric diction to acquaint future singers, teachers, and choral conductors with basic concepts and skills for the English, German, French, Latin, and Italian languages. Students will review the rules and symbols of the International Phonetic Alphabet (IPA). Prereq: Open to Music Education majors and graduate choral conducting students.</td>
<td>U G 2</td>
<td></td>
<td>S/U</td>
<td></td>
</tr>
<tr>
<td>5591</td>
<td>Career Development in Music</td>
<td>Survey of music marketplace, opportunities, and career strategies. Prereq: Open to Music majors only. Not open to students with credit for 591.</td>
<td>U G 3</td>
<td></td>
<td>S/U</td>
<td></td>
</tr>
<tr>
<td>5603.01</td>
<td>Topics in Percussion: Instrument Repair and Logistics</td>
<td>Study of the numerous ways to repair various percussion instruments. Types of instruments and their manufacturers. Prereq: Enrollment in Music major with a specialization in percussion.</td>
<td>U G 2</td>
<td></td>
<td>S/U</td>
<td></td>
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<tr>
<td>5603.02</td>
<td>Drum Set: Technique, Styles and History</td>
<td>Explore and obtain performance skills, concepts and historical knowledge pertaining to the drum set. Prereq: Enrollment in Music major with a specialization in classical percussion.</td>
<td>U G 2</td>
<td></td>
<td>S/U</td>
<td></td>
</tr>
<tr>
<td>5603.03</td>
<td>Hand Drumming: Global Percussion</td>
<td>Explore and obtain basic performance skills and concepts with various hand drumming techniques from around the world. Prereq: Enrollment in Music major with a specialization in classical percussion.</td>
<td>U G 2</td>
<td></td>
<td>S/U</td>
<td></td>
</tr>
<tr>
<td>5604</td>
<td>Introduction to Piano Technology</td>
<td>To provide the pianist and piano enthusiast a cursory understanding of the construction and maintenance of their instrument.</td>
<td>U G 1</td>
<td></td>
<td>S/U</td>
<td></td>
</tr>
</tbody>
</table>
338  Music

5607  Performance Enhancement I  U  G  1
Skills and techniques designed to enhance the quality of public performances. Repeatable to a maximum of 5 or hrs. This course is graded S/U.

5608  Performance Enhancement II  U  G  1
Advanced skills and techniques designed to enhance the quality of public performances. Prereq: 5607 (607), or permission of instructor. Repeatable to a maximum of 5 or hrs. This course is graded S/U.

5620  Extended Tonality from Wagner to Hindemith: Theory and Analysis  U  G  2
Systematic analytic observation of tonal art music from the last decades of the nineteenth century to World War II. Prereq: 3422. Not open to students with credit for 620.

5621  Theory and Analysis: 17th-18th Centuries  U  G  2
Analysis of representative works from the 17th-18th century, introducing relevant theoretical concepts. Prereq: 3422; or a score in the upper third on the graduate placement exam. Not open to students with credit for 621.

5622  Theory and Analysis: 19th Century  U  G  2
Analysis of representative works from the 19th century, introducing relevant theoretical concepts. Prereq: 3422, or a score in the upper third on the graduate placement exam. Not open to students with credit for 622.

5623  Theory and Analysis: 20th Century  U  G  2
Analysis of representative works from the 20th century, introducing relevant theoretical concepts. Prereq: 3422; or a score in the upper third on the graduate placement exam. Not open to students with credit for 623.

5625  Orchestration II  U  G  2
Study of 20th-century orchestral techniques, including readings in recent literature on timbre and timbre perception; scoring of transcriptions and students' compositions for various ensembles. Prereq: 4524. Not open to students with credit for 625.

5630  Composers Seminar  U  G  2
Contemporary topics in composition and theory; presentation, performance, and criticism of student compositions and papers. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

5631  Intermediate Studies in Counterpoint  U  G  2
Counterpoint based on the polyphonic style of the 18th century. Prereq: 4531, or permission of instructor. Not open to students with credit for 631.

5635  Composition II  U  G  2 - 3
Practice in creative writing; analysis, and evaluation; employment of contemporary methods of composition. Prereq: 4535, or permission of instructor. Repeatable to a maximum of 18 cr hrs or 6 completions.

5636.01  Introduction to Electronic Music Synthesis  U  G  3
Techniques of composition with electronic media, history, literature, and criticism; score preparation. Prereq: 4532; or permission of instructor. Not open to students with credit for 636.

5636.02  Electronic Music Synthesis  U  G  3
Principles of audio engineering, relationships to other communications media. Prereq: 5636.01, or permission of instructor. Not open to students with credit for 636.

5637.01  Composition with Electronic Media I  U  G  3
Individual composition projects with electronic media. Prereq: 4535 and 5636.02. Repeatable to a maximum of 18 cr hrs.

5637.02  Composition with Electronic Media II  U  G  3
Individual advanced composition projects with electronic media. Prereq: 5637.01. Repeatable to a maximum of 18 cr hrs.

5638  Audio Recording  U  G  3
Audio recording: microphones and microphone placement; multiple-track recording; mixing; equalization and special effects. Prereq: Course work in Circuit Analysis from Electric Engineering or equiv., or permission of instructor. Not open to students with credit for 638.

5639  Audio Recording Laboratory  U  G  3
Creating an audio recording: familiarity with the recording studio and console, use and placement of microphones; multiple-track recording equalization and special effects; mixing. Prereq: 5638, or permission of instructor. Repeatable to a maximum of 6 cr hrs.

5646  History of Music in the United States  U  G  2
A survey of music in the United States from colonial times until the present. Prereq: Jr, Sr, or Grad standing. Not open to students with credit for 646.

5648  Western Art Music I  U  G  2
A survey focused on repertory and historical issues, with principal emphasis on instrumental genres. Music from 1700 to early 20th century. Prereq: 2241, and Grad standing, and enrollment in Music major. Not open to students with credit for 648.

5650  History of Choral Music  U  G  2
Survey of the history and stylistic development of choral music. Prereq: 2242; or Grad standing, and enrollment in Music major. Not open to students with credit for 650.

5651  History of Opera  U  G  2
Survey of the history and stylistic development of opera. Prereq: 2242, or Grad standing in Music. Not open to students with credit for 651.

5652  18th- and 19th-Century Song Literature  U  G  2
Study of selected 18th and 19th century song literature. Prereq: 3422 and 2242, or 2243.02; or Grad standing. Not open to students with credit for 652.

5653.01  Piano Literature I  U  G  3
A study of the formal structures of piano literature from the pre-piano period through the works of Beethoven. Prereq: 3422. Not open to students with credit for 653.

5653.02  Piano Literature II  U  G  3
A study of the piano sonata and other characteristic forms from post-Beethoven to the present. Prereq: 3422. Not open to students with credit for 653.

5655  20th- and 21st-Century Song Literature  U  G  2
The study of selected 20th and 21st century song literature. Prereq: 5652, or Grad standing. Not open to students with credit for 655.

5663  School Orchestra Literature  U  G  2
Examines orchestral repertoire for study in elementary, middle, and high school orchestra programs, and develops strategies for teaching these pieces. Prereq: Enrollment in Music major. Not open to students with credit for 663.

5664  School Wind Band Repertoire  U  G  2
Examines wind band repertoire appropriate for study in elementary, middle and high school band programs and develops strategies for teaching these pieces. Prereq: Enrollment in Music major. Not open to students with credit for 664.

5666  Marching Band Techniques  U  G  2
A study of the marching band including laboratory work in marching techniques, computerized charting, and show design. Prereq: Soph. Jr, or Sr standing, and enrollment in Music major, or permission of instructor. Not open to students with credit for 666.

5677.01  Multimedia for Musicians I  U  G  3
Designed to provide musicians with the tools to create multimedia works for use in music education, research, or as a creative medium. Prereq: 2220 (220) or 5676 (576), or permission of instructor. Not open to students with credit for 677.

5765  Literature for Vocal Music Education  U  G  2
A study of vocal literature of various cultures and historic periods for use with choral groups in the secondary music program. Prereq: 4575 (575); or Grad standing, and enrollment in Music major. Not open to students with credit for 765.

5772  Music in Early Childhood  U  G  3
Analysis of research, principles, and practices in early childhood music and application to programs of learning for young children. Prereq: Permission of instructor. Not open to students with credit for 772.

5797  Study at a Foreign Institution  U  G  1 - 12
An opportunity to study at a foreign institution and receive Ohio State credit for that work. Prereq: Permission of dept chair. Repeatable to a maximum of 72 cr hrs or 6 completions. This course is progress graded.

5798  Study Tour  U  G  1 - 3
Specialized academic or performance study tour. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs or 6 completions. This course is graded S/U.

6193  Individual Studies  G  1 - 3
Independent study on a special problem or topic in music. Prereq: Grad standing, and permission of instructor. Repeatable to a maximum of 12 or cr hrs or 4 completions. This course is graded S/U.

6201.11  Applied Music (Secondary): Piano  G  2
Secondary applied music instruction on piano with an emphasis on pedagogy. Prereq: Grad standing, and permission of instructor. Repeatable to a maximum of 12 or hrs.
6200.12 **Applied Lesson (Secondary): Jazz Piano**  
G 2  
Applied jazz piano study with special emphasis on literature and pedagogy.  
Prereq: Grad standing, and permission of instructor. Repeatable to a maximum of 12 cr hrs.

6200.21 **Applied Music (Secondary): Voice**  
G 2  
Secondary applied music instruction on voice with an emphasis on pedagogy.  
Prereq: Grad standing, and permission of instructor. Repeatable to a maximum of 12 cr hrs.

6200.31 **Applied Music (Secondary): Violin**  
G 2  
Secondary applied music instruction on violin with an emphasis on pedagogy.  
Prereq: Grad standing, and permission of instructor. Repeatable to a maximum of 12 cr hrs.

6200.32 **Applied Music (Secondary): Viola**  
G 2  
Secondary applied music instruction on viola with an emphasis on pedagogy.  
Prereq: Grad standing, and permission of instructor. Repeatable to a maximum of 12 cr hrs.

6200.33 **Applied Music (Secondary): Cello**  
G 2  
Secondary applied music instruction on cello with an emphasis on pedagogy.  
Prereq: Grad standing, and permission of instructor. Repeatable to a maximum of 12 cr hrs.  
This course is available for EM credit.

6200.34 **Applied Music (Secondary): Double Bass**  
G 2  
Secondary applied music instruction on double bass with an emphasis on pedagogy.  
Prereq: Grad standing, and permission of instructor. Repeatable to a maximum of 12 cr hrs.

6200.41 **Applied Music (Secondary): Flute**  
G 2  
Secondary applied music instruction on flute with an emphasis on pedagogy.  
Prereq: Grad standing, and permission of instructor. Repeatable to a maximum of 12 cr hrs.

6200.43 **Applied Music (Secondary): Clarinet**  
G 2  
Secondary applied music instruction on clarinet with an emphasis on pedagogy.  
Prereq: Grad standing, and permission of instructor. Repeatable to a maximum of 12 cr hrs.

6200.45 **Applied Music - Secondary - Saxophone**  
G 2  
Secondary applied music instruction on saxophone with an emphasis on pedagogy.  
Prereq: Grad standing in Music, and permission of instructor. Repeatable to a maximum of 12 cr hrs.

6200.47 **Applied Music (Secondary): Jazz Saxophone**  
G 2  
Secondary applied music instruction on saxophone with an emphasis on pedagogy.  
Prereq: Grad standing, and permission of instructor. Repeatable to a maximum of 12 cr hrs.

6200.53 **Applied Music (Secondary): Trombone**  
G 2  
Secondary applied music instruction on trombone with emphasis on pedagogy.  
Prereq: Grad standing, and permission of instructor. Repeatable to a maximum of 12 cr hrs.

6200.54 **Applied Music (Secondary): Euphonium**  
G 2  
Secondary applied music instruction on euphonium with emphasis on pedagogy.  
Prereq: Grad standing, and permission of instructor. Repeatable to a maximum of 12 cr hrs.

6200.55 **Applied Music (Secondary): Tuba**  
G 2  
Secondary applied music instruction on tuba with emphasis on pedagogy.  
Prereq: Grad standing, and permission of instructor. Repeatable to a maximum of 12 cr hrs.

6200.56 **Applied Music (Secondary): Jazz Trumpet**  
G 2  
Secondary applied music instruction on jazz trumpet with an emphasis on pedagogy.  
Prereq: Grad standing, and permission of instructor. Repeatable to a maximum of 12 cr hrs.

6200.57 **Applied Music (Secondary): Jazz Trombone**  
G 2  
Secondary applied music instruction on jazz trombone with an emphasis on pedagogy.  
Prereq: Grad standing, and permission of instructor. Repeatable to a maximum of 12 cr hrs.

6216.12 **Applied Music (Non Major): Jazz Piano**  
G 2  
Applied jazz piano study with special emphasis on literature and pedagogy.  
Prereq: Grad standing, and permission of instructor. Repeatable to a maximum of 12 cr hrs.

6216.21 **Applied Music (Non Major): Voice**  
G 2  
Applied voice study with special emphasis on literature and pedagogy.  
Prereq: Grad standing, and permission of instructor. Repeatable to a maximum of 12 cr hrs.

6216.34 **Applied Music (Non Major): Double Bass**  
G 2  
Applied double bass study with special emphasis on literature and pedagogy.  
Prereq: Grad standing, and permission of instructor. Repeatable to a maximum of 12 cr hrs.

6216.41 **Applied Music (Non Major): Flute**  
G 2  
Applied flute study with special emphasis on literature and pedagogy.  
Prereq: Grad standing, and permission of instructor. Repeatable to a maximum of 12 cr hrs.

6216.42 **Applied Music (Non Major): Oboe**  
G 2  
Applied oboe study with special emphasis on literature and pedagogy.  
Prereq: Grad standing, and permission of instructor. Repeatable to a maximum of 12 cr hrs.

6645 **Music's Meanings**  
G 2 - 3  
An exploration of approaches to ways that music conveys meaning.  
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 645.
340 Music

7204.01 Wind Symphony  G  1 - 2
Study and performance of repertoire appropriate for wind ensemble.
Prereq: Audition and permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions.

7204.02 Symphonic Band  G  1 - 2
Study and performance of repertoire for symphonic band.
Prereq: Audition and permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions.

7204.03 Collegiate Winds  G  1 - 2
Study and performance of repertoire determined by specific ensemble.
Prereq: Audition and permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions.

7204.04 University Band  G  1 - 2
Study and performance of repertoire determined by specific ensemble.
Prereq: Audition and permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions.

7205.01 Univ. Marching Band  G  1 - 2
Study and performance of repertoire for marching band.
Prereq: Audition and permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions.

7205.02 Athletic Band  G  1 - 2
Study and performance of repertoire for athletic band.
Prereq: Audition and permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions.

7206.01 Jazz Ensemble  G  1 - 2
Study and performance of repertoire determined by specific ensemble.
Prereq: Audition and permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions.

7206.02 Jazz Lab Ensemble  G  1 - 2
Study and performance of repertoire determined by specific ensemble.
Prereq: Audition and permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions.

7207.01 Percussion Ensemble  G  1
Study and performance of repertoire determined by specific percussion ensemble.
Prereq: Audition and permission of instructor. Repeatable to a maximum of 10 cr hrs.

7208.03 Small Ensemble: Strings  G  1
Study and performance of repertoire determined by specific string ensemble.
Prereq: Audition and permission of instructor. Repeatable to a maximum of 10 cr hrs.

7208.04 Small Ensemble: Woodwinds  G  1
Study and performance of repertoire determined by specific woodwind ensemble.
Prereq: Grad standing, audition, and permission of instructor. Repeatable to a maximum of 10 cr hrs.

7208.05 Small Ensemble: Brass  G  1
Study and performance of repertoire determined by specific brass ensemble.
Prereq: Grad standing, audition, and permission of instructor. Repeatable to a maximum of 10 cr hrs.

7208.06 Small Ensemble: Jazz Combo  G  1
Study and performance of repertoire determined by specific jazz ensemble.
Prereq: Grad standing, audition, and permission of instructor. Repeatable to a maximum of 10 cr hrs.

7208.16 Small Ensemble: Gospel Choir  G  1
Study and performance of gospel and spiritual choir literature for mixed chorus.
Repeatable to a maximum of 10 cr hrs.

7208.80 Sonic Arts Ensemble  G  1
Sonic Arts Ensemble is an ensemble - based course focused on the use of the computer and/or electronic technologies in music performance and music composition, along with the development of new technologies (software and hardware) for sonic arts performance.
Prereq: Admission by audition. Repeatable to a maximum of 10 cr hrs.

7208.99 Small Ensemble: Miscellaneous  G  1
Study and performance of repertoire determined by specific ensemble.
Prereq: Audition and permission of instructor. Repeatable to a maximum of 10 cr hrs.

7215.01 University Symphony Orchestra  G  1 - 2
The University Orchestra is an 85-piece orchestra of full instrumentation devoted to the preparation of standard and modern literature.
Prereq: Admission by audition. Repeatable to a maximum of 24 cr hrs or 12 completions.

7612 Piano Pedagogy III  G  3
An analysis of the development of piano technique through readings in pedagogical treatises and applications in standard piano repertoire from various style periods.
Prereq: 7611. Not open to students with credit for 613.

7715 Structure and Function of the Singing Mechanism  G  3
Anatomy and acoustics of the voice as they relate to developmental vocal pedagogy.
Prereq: Grad standing. Not open to students with credit for 715.

7727 Keyboard Harmony for Graduate Students  G  2 - 3
Application of keyboard musicianship, including sight reading, harmonization of melodies, improvisation, transcription, realization of figured bass and modulation.
Prereq: 2264.01 (264.01), 3422 (422), or equivalent with permission of instructor. Not open to students with credit for 727.

7730 Introduction to Musicology  G  3
Introduction to the materials, issues and methodologies of musicology. An introduction to musicology focused on sounding music and music contexts.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 730.01 or 730.02.

7740 Studies in Music before 1600  G  3
Introduction to scholarly issues in the music of the Middle Ages and the Renaissance.
Prereq: 2243 (243) or equiv, 4531 (531) or equiv; and grad standing. Not open to students with credit for 740 or 741.

7742 Studies in Music from 1600 to the Present  G  3
Introduction to scholarly issues in the music from the Romantic era to the 21st century.
Prereq: 2243 (243) or equiv, 4531 (531) or equiv; and grad standing. Not open to students with credit for 744 or 745.

7754 Midwest Summer String Teachers Seminar  G  2
Seminar on current materials, music, assessment procedures, and strategies for teaching string/orchestra in the schools.
Prereq: Undergrad degree in Music. Repeatable to a maximum of 20 cr hrs.

7760 Basic Concepts in Music Education  G  3
The principles of music education and of the educational and cultural objectives derived from related disciplines which give direction and purpose to the music education program.
Prereq: 4586 (586) or 4587 (587), or equivalent. Not open to students with credit for 760.

7764 Principles and Practices in Vocal Music Education  G  2
Analysis and appraisal of the organization, purpose, and development of the vocal music program in secondary schools.
Prereq: 4575 (575). Not open to students with credit for 764.

7770 Introduction to Research in Music Education  G  3
A study of methods of research as applied to problems in school music.
Prereq: 4586 (586), 4587 (587), or equivalent. Not open to students with credit for 770.

7780.05 Piano Accompanying Practicum  G  1 - 2
Study of skills needed for success as a collaborative pianist.
Prereq: Grad standing in Piano, or permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions.

7780.11 Opera Scenes  G  3
Performance ensemble class devoted to rehearsing and performing scenes from operatic literature.
Prereq: 6710 (710), and admission by audition; or permission of instructor. Repeatable to a maximum of 24 cr hrs.

7780.12 Opera Performance  G  3
Performance ensemble class devoted to the rehearsing and performance of full length operas; advanced rehearsal and performance techniques of operatic literature.
Prereq: 6710 (710), and admission by audition; or permission of instructor. Repeatable to a maximum of 18 cr hrs.

7780.20 African Performing Ensemble  G  1
Study and performance of repertoire determined by specific ensemble.
Prereq: Grad standing, and permission of instructor. Repeatable to a maximum of 10 hr.

7780.22 Andean Music Ensemble  G  ½ - 1
In this course students learn to play and perform music from Bolivia, Peru, Ecuador, Chile, Colombia and Argentina. The course explores various musical genres within the Andean region. Students study techniques and methods for playing Andean instruments and learn to sing in Spanish, Quechua and Aymara.
Repeatable to a maximum of 10 cr hrs or 10 completions. Cross-listed in Spanish.

7784 Bibliography for Musicologists  G  3
Intensive survey of bibliographic methods and materials in music research.
Prereq: Grad standing in musicology.

7785 Cognitive Ethnomusicology  G  3
Topics and issues in historical musicology and ethnomusicology.
Prereq: Grad standing.

7787 Chinese Music  G  3
History theory and practices of Chinese music culture with special reference to the socio-cultural conditions of their development.
Prereq: Grad standing. Not open to students with credit for 787.01.
7788 Music of the Arab and Indian Traditions  G  3
History theory and practices of Arab and Indian music cultures with special reference to the socio-cultural conditions of their development. Prereq: Grad standing. Not open to students with credit for 787.02 or 787.03.

7789 African Music: Ideas Forms and Trajectories  G  3
Examination of compositional choices and performance conventions in selected musical traditions from Africa. Prereq: 2251 (251), 6672, or AFAM 415 equivalent; and Grad standing, or permission of instructor. Not open to students with credit for 789 or AFAM 415 789.

7791 Problems in Instrumental Music Education  G  3
Study of the problems encountered in teaching supervising and organization of the instrumental music program. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

7801.11 Applied Music Principal Piano  G  2 - 4
Advanced piano study with emphasis on musicianship, pedagogical techniques, and literature. Prereq: Enrollment in Master of Arts in Piano Pedagogy program. Repeatable to a maximum of 24 cr hrs or 6 completions.

7801.21 Applied Music Principal Voice  G  2 - 4
Advanced voice study with emphasis on musicianship, pedagogical techniques, and literature. Prereq: Enrollment in Master of Arts in Voice Pedagogy program. Repeatable to a maximum of 24 cr hrs or 6 completions.

7801.31 Applied Music Principal Violin  G  2 - 4
Advanced violin study with emphasis on musicianship, pedagogical techniques, and literature. Prereq: Enrollment in Master of Arts in String Pedagogy program. Repeatable to a maximum of 24 cr hrs or 6 completions.

7801.32 Applied Music Principal Viola  G  2 - 4
Advanced viola study with emphasis on musicianship, pedagogical techniques, and literature. Prereq: Enrollment in Master of Arts in String Pedagogy program. Repeatable to a maximum of 24 cr hrs or 6 completions.

7801.33 Applied Music Principal Cello  G  2 - 4
Advanced cello study with emphasis on musicianship, pedagogical techniques, and literature. Prereq: Enrollment in Master of Arts in String Pedagogy program. Repeatable to a maximum of 24 cr hrs or 6 completions.

7801.41 Applied Music - Major - Flute  G  2 - 4
A specialized and intense study of the literature and performance techniques on flute. Prereq: Enrollment in Master of Music program in Woodwind Performance. Repeatable to a maximum of 24 cr hrs or 6 completions.

7801.42 Applied Music - Major - Oboe  G  2 - 4
A specialized and intense study of the literature and performance techniques on oboe. Prereq: Enrollment in Master of Music program in Woodwind Performance. Repeatable to a maximum of 24 cr hrs.

7801.43 Applied Music - Major - Clarinet  G  2 - 4
A specialized and intense study of the literature and performance techniques on clarinet. Prereq: Enrollment in Master of Music program in Woodwind Performance. Repeatable to a maximum of 24 cr hrs or 6 completions.

7801.44 Applied Music - Major - Saxophone  G  2 - 4
A specialized and intense study of the literature and performance techniques on saxophone. Prereq: Enrollment in Master of Music program in Woodwind Performance. Repeatable to a maximum of 24 cr hrs or 6 completions.

7801.45 Applied Music - Major - Bassoon  G  2 - 4
A specialized and intense study of the literature and performance techniques on bassoon. Prereq: Enrollment in Master of Music program in Woodwind Performance. Repeatable to a maximum of 24 cr hrs or 6 completions.

7801.46 Applied Music - Major - Horn  G  2 - 4
A specialized and intense study of the literature and performance techniques on horn. Prereq: Enrollment in Master of Music program in Brass Performance. Repeatable to a maximum of 24 cr hrs or 6 completions.

7801.51 Applied Music - Major - Trumpet  G  2 - 4
A specialized and intense study of the literature and performance techniques on trumpet. Prereq: Enrollment in Master of Music program in Brass Performance. Repeatable to a maximum of 24 cr hrs or 6 completions.

7801.52 Applied Music - Major - Trombone  G  2 - 4
A specialized and intense study of the literature and performance techniques on trombone. Prereq: Enrollment in Master of Music program in Brass Performance. Repeatable to a maximum of 24 cr hrs or 6 completions.

7801.53 Applied Music - Major - Tuba  G  2 - 4
A specialized and intense study of the literature and performance techniques for tuba. Prereq: Enrollment in Master of Music program in Brass Performance. Repeatable to a maximum of 24 cr hrs or 6 completions.

7801.71 Applied Music - Major - Percussion  G  2 - 4
A specialized and intense study of the literature and performance techniques for percussion. Prereq: Enrollment in Master of Music program in Percussion Performance. Repeatable to a maximum of 24 cr hrs or 6 completions.

7802.01 Choral Conducting  G  2
Specialization and intense study of choral conducting techniques. Prereq: Placement exam. Open only to conducting majors in the MM curriculum. Repeatable to a maximum of 6 cr hrs.

7802.02 Orchestral Conducting  G  2
Specialization and intense study of orchestral conducting techniques. Prereq: Placement exam. Open only to Conducting majors in the MM curriculum. Repeatable to a maximum of 6 cr hrs.

7802.03 Wind Conducting  G  2
Specialization and intense study of band conducting techniques. Prereq: Placement exam. Open only to Conducting majors in the MM curriculum. Repeatable to a maximum of 6 cr hrs.

7802.04 Masters Thesis Recital  G  2
Preparation and presentation of musical literature in solo performance. Prereq: Grad standing in the School of Music, and permission of instructor. Repeatable to a maximum of 4 cr hrs. This course is graded S/U.

7802.05 Masters Thesis Recital: Concerto  G  2
Preparation and presentation of repertoire from the concerto literature. Prereq: Grad standing in the School of Music, and permission of instructor. Repeatable to a maximum of 4 cr hrs. This course is graded S/U.

7802.11 Practicum in Teaching Applied Piano  G  3
A critical analysis of various methods, principles, practices, and materials current in teaching applied music. Prereq: 5615, and Grad standing. Repeatable to a maximum of 6 cr hrs.

7802.21 History and Practice of Voice Pedagogy  G  3
An analysis of the principles and current practices in the teaching of voice. Prereq: 5615 (615), Grad standing, and minimum 6 hrs applied voice. Repeatable to a maximum of 6 cr hrs.
Music Pedagogy: String Instruments
8710.30 Music Pedagogy: String Instruments G 3
A critical analysis of various methods, principles, practices, and materials current in teaching applied music.
Prereq: Grad standing, and enrollment in Music program, and minimum 6 hours in applied string instruction. Repeatable to a maximum of 6 cr hrs.

8710.40 Music Pedagogy: Woodwind Instruments G 3
A critical analysis of various methods, principles, practices, and materials current in teaching applied music.
Prereq: Grad standing, and enrollment in Music program, and minimum 6 hours of applied woodwind instruction. Repeatable to a maximum of 6 cr hrs.

8710.50 Music Pedagogy: Brass Instruments G 3
A critical analysis of various methods, principles, practices, and materials current in teaching applied music.
Prereq: Grad standing, and enrollment in Music program, and minimum of 6 hours of applied brass instruction. Repeatable to a maximum of 6 cr hrs.

8715 Seminar for Singing Health Specialists G 2
Required seminar for candidates in the Singing Health Specialization to enable coordination of skills, concepts, and practices necessary for successful SHS certification.
Prereq: Admission to Singing Health Specialization. Not open to students with credit for 815 or SphRng 7815 (815). Cross-listed in SphRng.

7820.01 Scale Theory: Transformation and Tonality G 3
Formal approaches to the theory of musical scales, with the premise that the distinct subfields of theory and transformational theory speak to fundamental questions of tonality.
Prereq: Grad standing. Repeatable to a maximum of 12 cr hrs.

7820.03 Compositional Modeling and Musical Allusion G 3
Analysis of possible instances of composers who used the word of predecessor as models; interaction in such cases with notions of musical allusion.
Prereq: Grad standing. Repeatable to a maximum of 12 cr hrs.

7820.05 Special Topics in Theory G 3
Critical examination of major contemporary theoretical viewpoints; concepts of theory construction; topics will vary each semester.
Prereq: Grad standing. Repeatable to a maximum of 18 cr hrs.

7835 Composition IV G 2 - 3
Creative writing of large forms at an advanced level.
Prereq: 6535 or equivalent. Repeatable to a maximum of 18 cr hrs or 6 completions.

7852.01 Performance Literature: Piano G 2
Intensive study of representative piano literature from each style period.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 6 cr hrs.

7852.02 Performance Literature: Voice G 2
Intensive study of representative voice literature from each style period.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 16 cr hrs.

7852.03 Performance Literature: Strings G 2
Intensive study of representative string literature from each style period.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 6 cr hrs.

7852.04 Performance Literature: Woodwinds G 2
Intensive study of representative woodwind literature from each style period.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 6 cr hrs.

7852.05 Performance Literature: Brass G 2
Intensive study of representative brass literature from each style period.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 6 cr hrs.

7852.07 Performance Literature: Percussion G 2
Intensive study of representative percussion literature from each style period.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 6 cr hrs.

7905 Doctoral Preliminary Recital G 2
Intended for the graduate student who is preparing for the preliminary doctoral recital.
Prereq: Grad standing, and permission of instructor. Repeatable to a maximum of 6 cr hrs.

8193 Individual Studies G 1 - 3
Independent study on a special problem or topic in music.
Prereq: Doctoral standing, and permission of instructor. Repeatable to a maximum of 4 cr hrs or 6 completions. This course is graded S/U.

8810.31 String Pedagogy for Applied Teaching G 3
Examination of pedagogy and repertoire for teaching beginning and intermediate string instrument lessons in an applied studio.
Prereq: Grad standing, and enrollment in Music program. Not open to students with credit for 810.31.

8810.32 Pedagogy for Beginning Lower Strings G 3
Examination of pedagogy and instructional materials designed to teach first and second year cello and bass playing skills.
Prereq: Music major enrolled in the Master of Arts String Pedagogy degree program. Not open to students with credit for 810.32.

8810.33 Pedagogy for Beginning Upper Strings G 3
Examination of pedagogy and instructional materials designed to teach first and second year violin and viola.
Prereq: Enrollment in the Master of Arts String Pedagogy program. Not open to students with credit for 810.33.

8820 Music Theory Pedagogy G 3
Teaching of music theory in secondary schools and colleges; evaluation and application of the most effective teaching methods and principles in teaching music theory.
Prereq: Grad standing, and enrollment in Music program.

8823.02 Transformational Theory and Analysis G 3
Studies in transformational approaches to music; problematic aspects of tonal music; tonality and dissonance in the 19th and 20th centuries.
Prereq: 8523 (823). Not open to students with credit for 823.

8824.01 Computational Musicology I G 3
The use of computers in music research and instruction; music data structures and programming routines for music research and instruction.
Prereq: 8521 (821), 5622 (622), or 5623 (623), or equivalent; or permission of instructor. Not open to students with credit for 824.01.

8824.02 Computational Musicology II G 3
The use of computers in music research and instruction; music data structures and programming routines for music research and instruction.
Prereq: 8521 (821), 5622 (622), or 5623 (623), or equivalent; or permission of instructor. Not open to students with credit for 824.01.

8826 Development of Music Theory I G 3
A study of the principal treatises on music theory from before 1400 to 1700.
Prereq: 8521 (821), 5622 (622) or 5623 (623), or equiv, or permission of instructor. Not open to students with credit for 826.

8827 Development of Music Theory II G 3
A study of the principal treatises on music theory from 1700 to 1900.
Prereq: 8521 (821), 5622 (622), or 5623 (623), or equivalent; or permission of instructor. Not open to students with credit for 827.

8837 Composition with Electronic Media IV G 3
Advanced composition using electronically generated sound material.
Prereq: 6537 (637). Repeatable to a maximum of 15 cr hrs.

8838.01 Topics in Music Cognition G 3
Critical survey of perceptual, cognitive, affective or neuroscience research related to music.
Prereq: Permission of instructor. Not open to students with credit for 838.

8838.02 Topics in Empirical Musicology G 3
Critical survey of quantitative and systematic research related to music.
Prereq: Permission of instructor. Not open to students with credit for 838.

8838.04 Topics in Recent Literature of Music Cognition G 3
Critical readings and discussion of current research publications in music cognition.
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

8839 Music Cognition Research Laboratory G 3
Practical experiences in laboratory studies of music.
Prereq: 6383.01 (838). Repeatable to a maximum of 6 cr hrs.

8847 Development of Notation: 900-1600 G 3
A survey of notational principles from Gregorian neumes through the mensural system of the Renaissance, with exercises in transcription.
Prereq: Grad standing. Not open to students with credit for 847.

8850 History of Performance Practices G 3
A study of primary sources pertaining to contemporary attitudes and practices in the performance of music from the Middle Ages to the present.
Prereq: Grad standing. Not open to students with credit for 850.

8852.03 Performance Literature - Strings G 2
Concerted study of representative string literature from each style period.
Prereq: 7852.03 (752.03), or Doctoral standing. Repeatable to a maximum of 8 cr hrs.

8852.04 Performance Literature - Woodwinds G 2
Concerted study of representative woodwind literature from each style period.
Prereq: 7852.04 (752.04), or Doctoral standing. Repeatable to a maximum of 8 cr hrs.

8852.05 Performance Literature - Brass G 2
Concerted study of representative brass literature from each style period.
Prereq: 7852.05 (752.05), or Doctoral standing. Repeatable to a maximum of 8 cr hrs.

8852.07 Performance Literature: Percussion G 2
Concerted study of representative percussion literature from each style period.
Prereq: 7852.07, 752.07, or Doctoral standing. Not open to students with credit for 852.07. Repeatable to a maximum of 8 cr hrs.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>8860.01</td>
<td>Wind Conducting Repertoire</td>
<td>G 3</td>
<td>Concentrated study of instrumentation and repertoire of bands in Western music from the standpoint of the conductor. Prereq: DMA conducting major, or permission of instructor. Not open to students with credit for 8860.01.</td>
</tr>
<tr>
<td>8860.02</td>
<td>Choral Conducting Repertoire</td>
<td>G 3</td>
<td>Concentrated study of choral literature from the Renaissance to the present. Prereq: DMA conducting major, or permission of instructor. Not open to students with credit for 8860.02.</td>
</tr>
<tr>
<td>8860.03</td>
<td>Orchestral Conducting Repertoire</td>
<td>G 3</td>
<td>Concentrated study of orchestral repertoire from Monteverdi through the present from the standpoint of the conductor. Prereq: DMA conducting major, or permission of instructor. Not open to students with credit for 8860.03.</td>
</tr>
<tr>
<td>8872</td>
<td>Qualitative Research in Music</td>
<td>G 3</td>
<td>This course will examine principles of qualitative research design in social sciences and their application to music teaching and learning. Prereq: Doctoral standing, or permission of instructor.</td>
</tr>
<tr>
<td>8874</td>
<td>Seminar: The Development of Music Education</td>
<td>G 3</td>
<td>Development of music education from the early Greek society to the present day. Tracing major trends and persons of influence. Prereq: Grad standing. Not open to students with credit for 874.</td>
</tr>
<tr>
<td>8875</td>
<td>Seminar: Psychological Factors in Music Education</td>
<td>G 3</td>
<td>A study of the psychological factors, theory, and research in the musical development of children and adolescents with implications for school music education programs. Prereq: 7761 (761). Not open to students with credit for 875.</td>
</tr>
<tr>
<td>8877</td>
<td>Seminar: Social Factors in Music Education</td>
<td>G 3</td>
<td>A study of the social influences on music education and their relationship to primary and secondary music programs and practices. Prereq: 7760 (760). Not open to students with credit for 877.</td>
</tr>
<tr>
<td>8879</td>
<td>Seminar: Music in Higher Education</td>
<td>G 3</td>
<td>The role of music in higher education historically and in contemporary times, including its philosophical bases, degree programs, and organizations. Prereq: Grad standing. Not open to students with credit for 879.</td>
</tr>
<tr>
<td>8885</td>
<td>Fieldwork in Ethnomusicology</td>
<td>G 3</td>
<td>A study of the theory and practice of ethnomusical fieldwork. Prereq: Grad standing, and enrollment in Music program. Repeatable to a maximum of 6 cr hrs.</td>
</tr>
<tr>
<td>8886</td>
<td>Theories and Methods of Ethnomusicology</td>
<td>G 2</td>
<td>A study of scholarly approaches and research methods in ethnomusicology. Prereq: Grad standing, and enrollment in Music program. Not open to students with credit for 886.</td>
</tr>
<tr>
<td>8895</td>
<td>Seminar in Music</td>
<td>G 1-3</td>
<td>Colloquia, workshops, and special topics seminars in music. Repeatable to a maximum of 24 cr hrs or 8 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>8902.11</td>
<td>Applied Music - Major - Piano</td>
<td>G 2-4</td>
<td>Advanced study of music literature in piano performance. Prereq: Enrollment in DMA program. Repeatable to a maximum of 40 cr hrs or 10 completions.</td>
</tr>
<tr>
<td>8902.21</td>
<td>Applied Music - Major - Voice</td>
<td>G 2-4</td>
<td>Advanced study of music literature in voice performance. Prereq: Enrollment in DMA program. Repeatable to a maximum of 40 cr hrs or 10 completions.</td>
</tr>
<tr>
<td>8902.31</td>
<td>Applied Music - Major - Violin</td>
<td>G 2-4</td>
<td>Advanced study of music literature in violin performance. Prereq: Enrollment in DMA program. Repeatable to a maximum of 40 cr hrs or 10 completions.</td>
</tr>
<tr>
<td>8902.33</td>
<td>Applied Music - Major - Cello</td>
<td>G 2-4</td>
<td>Advanced study of music literature in cello performance. Prereq: Enrollment in DMA program. Repeatable to a maximum of 40 cr hrs or 10 completions.</td>
</tr>
<tr>
<td>8902.34</td>
<td>Applied Music - Major - Double Bass</td>
<td>G 2-4</td>
<td>Advanced study of music literature in double bass performance. Prereq: Enrollment in DMA program. Repeatable to a maximum of 40 cr hrs or 10 completions.</td>
</tr>
<tr>
<td>8902.41</td>
<td>Applied Music - Major - Flute</td>
<td>G 2-4</td>
<td>Advanced study of music literature in flute performance. Prereq: Enrollment in DMA program. Repeatable to a maximum of 40 cr hrs or 10 completions.</td>
</tr>
<tr>
<td>8902.42</td>
<td>Applied Music - Major - Oboe</td>
<td>G 2-4</td>
<td>Advanced study of music literature in oboe performance. Prereq: Enrollment in DMA program. Repeatable to a maximum of 40 cr hrs or 10 completions.</td>
</tr>
<tr>
<td>8902.43</td>
<td>Applied Music - Major - Clarinet</td>
<td>G 2-4</td>
<td>Advanced study of music literature in clarinet performance. Prereq: Enrollment in DMA program. Repeatable to a maximum of 40 cr hrs or 10 completions.</td>
</tr>
<tr>
<td>8902.45</td>
<td>Applied Music - Major - Saxophone</td>
<td>G 2-4</td>
<td>Advanced study of music literature in saxophone performance. Prereq: Enrollment in DMA program. Repeatable to a maximum of 40 cr hrs or 10 completions.</td>
</tr>
<tr>
<td>8902.46</td>
<td>Applied Music - Major - Bassoon</td>
<td>G 2-4</td>
<td>Advanced study of music literature in bassoon performance. Prereq: Enrollment in DMA program. Repeatable to a maximum of 40 cr hrs or 10 completions.</td>
</tr>
<tr>
<td>8902.51</td>
<td>Applied Music - Major - Horn</td>
<td>G 2-4</td>
<td>Advanced study of music literature in horn performance. Prereq: Enrollment in DMA program. Repeatable to a maximum of 40 cr hrs or 10 completions.</td>
</tr>
<tr>
<td>8902.52</td>
<td>Applied Music - Major - Trumpet</td>
<td>G 2-4</td>
<td>Advanced study of music literature in trumpet performance. Prereq: Enrollment in DMA program. Repeatable to a maximum of 40 cr hrs or 10 completions.</td>
</tr>
<tr>
<td>8902.53</td>
<td>Applied Music - Major - Trombone</td>
<td>G 2-4</td>
<td>Advanced study of music literature in trombone performance. Prereq: Enrollment in DMA program. Repeatable to a maximum of 40 cr hrs or 10 completions.</td>
</tr>
<tr>
<td>8902.55</td>
<td>Applied Music - Major - Tuba</td>
<td>G 2-4</td>
<td>Advanced study of music literature in tuba performance. Prereq: Enrollment in DMA program. Repeatable to a maximum of 40 cr hrs or 10 completions.</td>
</tr>
<tr>
<td>8903.01</td>
<td>Advanced Wind Conducting</td>
<td>G 4</td>
<td>Study of advanced wind conducting technique and application to appropriate repertoire. Prereq: Enrollment in DMA conducting program. Repeatable to a maximum of 24 cr hrs.</td>
</tr>
<tr>
<td>8903.02</td>
<td>Advanced Choral Conducting</td>
<td>G 4</td>
<td>Study of advanced choral conducting technique and application to appropriate repertoire. Prereq: Enrollment in DMA conducting program. Repeatable to a maximum of 24 cr hrs.</td>
</tr>
<tr>
<td>8903.03</td>
<td>Advanced Orchestral Conducting</td>
<td>G 4</td>
<td>Study of advanced orchestral conducting technique and application to appropriate repertoire. Prereq: Enrollment in DMA conducting program. Repeatable to a maximum of 24 cr hrs.</td>
</tr>
<tr>
<td>8905</td>
<td>Doctoral Recital</td>
<td>G 2</td>
<td>Intended for the graduate student who is preparing a doctoral recital. Prereq: 7905. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>8950</td>
<td>Seminar in Musikology</td>
<td>G 3</td>
<td>Research topic in musicology to be determined by the area. Prereq: Grad standing. Repeatable to a maximum of 30 cr hrs.</td>
</tr>
<tr>
<td>8996</td>
<td>Doctoral Research Non-Thesis</td>
<td>G 1-3</td>
<td>Research for non-thesis purposes. Prereq: Grad standing. Repeatable to a maximum of 18 cr hrs or 6 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>8999</td>
<td>Research for Dissertation or Document</td>
<td>G 1-5</td>
<td>Research for dissertation or document purposes. Prereq: Grad standing. Repeatable to a maximum of 30 cr hrs or 10 completions. This course is graded S/U.</td>
</tr>
</tbody>
</table>

**Music**

<table>
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<tbody>
<tr>
<td>1101</td>
<td>Freshmen Leadership Lab</td>
<td>U 1</td>
<td>An introduction to the practical application of basic leadership principles in the United States Navy and United States Marine Corps. Prereq: Not open to students with credit for 111. This course is graded S/U.</td>
</tr>
<tr>
<td>1102</td>
<td>Freshmen Leadership Lab</td>
<td>U 1</td>
<td>A continued practical application of basic leadership principles in the United States Navy and United States Marine Corps. Prereq: Enrollment in Navy ROTC program. This course is graded S/U.</td>
</tr>
<tr>
<td>1110</td>
<td>Survey of Naval Science</td>
<td>U 3</td>
<td>Introduction to and survey of disciplines peculiar to naval science including naval tasks &amp; missions, regulations, customs, traditions, &amp; organizational relationships. Students must contact Naval Science Department (292-6015) for orientation program. Prereq: Enrollment in NROTC Unit, or permission of instructor. Not open to students with credit for 111.</td>
</tr>
<tr>
<td>1210</td>
<td>Sea Power and Maritime Affairs Seminar</td>
<td>U 3</td>
<td>An analysis of maritime affairs as related to the United States naval forces, from the Revolutionary War to present day. Students must contact Naval Science Department (292-6015) for Naval ROTC program information. Prereq: 1110, or permission of instructor. Not open to students with credit for 121 and 131.</td>
</tr>
</tbody>
</table>
344 Naval Science

2001 Sophomore Leadership Lab I U 1
An intensified employment of leadership principles and practices relevant to future Navy and Marine Corps officers.
Prereq: Enrollment in Navy ROTC program. This course is graded S/U.

2002 Sophomore Leadership Lab II U 1
A continued employment of leadership principles and practices relevant to future Navy and Marine Corps officers.
Prereq: Enrollment in Navy ROTC program. This course is graded S/U.

2110 Navigation I U 3
A study of navigation and piloting vessels at sea, including the determination of position by dead reckoning, visual bearings, and electronic methods.
Prereq: Not open to students with credit for 211 and 221.

2210 Navigation II U 3
A study of fleet operations including operations and tactics including the study of relative motion of ships at sea, maneuvering board, tactics, and naval communications.
Prereq: 2110, or permission of instructor. Not open to students with credit for 221 and 431.

3001 Junior Leadership Lab I U 1
An advanced application of leadership theory, skills, and practices for perspective Navy and Marine Corps officers.
Prereq: Enrollment in Navy ROTC program. This course is graded S/U.

3002 Junior Leadership Lab II U 1
A continuation of the advanced application of leadership theory, skills, and practices for perspective Navy and Marine Corps officers.
Prereq: Enrollment in Navy ROTC program. This course is graded S/U.

3110 Naval Ship Systems U 3
Study of fundamental thermodynamics, conventional and nuclear ship propulsion systems. For Naval ROTC program information, contact 292-6015.
Prereq: Permission of instructor. Not open to students with credit for 311 and 321.

3210 Naval Mission Systems U 3
Applications of naval weapons systems as they relate to the ships of today’s Navy. Theoretical presentation of fundamental weapons concepts including electromagnetic principles, feedback controls, and basic ballistics.
Prereq: 3110 (311 and 321). Not open to students with credit for 321 and 331.

3510 Evolution of Warfare U 3
A study of the evolution of weapons and tactics, illustrating the principles and variables of war used in certain battles from Alexander through the present day. For ROTC program information, contact 292-6015.
Prereq: 1210 (121 and 131). Not open to students with credit for 351 and 352.

3530 Modern Basic Military Strategy and Tactics U 2
Prepares future Marine Corps Officers by studying modern tactical principles, current military developments, & conducting physical fitness training. This course is only open to those students preparing to attend Marine Corps Officer Candidate School. Prereq: Not open to students with credit for 353.

4001 Senior Leadership Lab I U 1
A culmination of the knowledge, skills, theory, and leadership practices acquired in the Navy ROTC program to ensure that prospective Navy and Marine Corps officers are ready to receive a commission in the United States Navy.
Prereq: Enrollment in Navy ROTC program. This course is graded S/U.

4002 Senior Leadership Lab II U 1
A continued culmination of the knowledge, skills, theory, and leadership practices acquired in the Navy ROTC program to ensure that prospective Navy and Marine Corps officers meet all necessary requirements for commissioning as military officers.
Prereq: Enrollment in Navy ROTC program. This course is graded S/U.

4110 Leadership and Management U 3
A seminar study of effective leadership in a military setting involving examples from Naval history as well as modern business management practices.
Prereq: Enrollment in NROTC program, or permission of instructor. Not open to students with credit for 231.

4210 Leadership and Ethics U 3
A study of issues relating to naval law, the Uniform Code of Military Justice and the moral principles involved in making informed decisions as a military officer.
Prereq: Enrollment in NROTC program, or permission of instructor. Not open to students with credit for 411.

4510 Amphibious & Expeditionary Warfare U 3
A study of the concepts and evolution of amphibious warfare from history through present. For Navy ROTC program information, contact 292-6015.
Prereq: 1210 (131 and 131), or permission of instructor. Not open to students with credit for 451 and 452.

4520 Fundamentals of Maneuver Warfare U 3
This course prepares future military officers and other leaders for service by studying modern tactical principles, current military developments, and other aspects of warfare and their interactions with and influences on maneuver warfare doctrine. There is a specific focus on the United States Marine Corps as the premier maneuver warfighting organization.

Near Eastern Languages and Cultures

1125 Stories of the Middle East and South Asia U 3
This course will read and analyze a variety of short stories to illuminate different cultures of the Middle East and South Asia. The goal of the course is to introduce students to diverse cultures through literature. Students will become familiar with a variety of literary representations, social structures and religious, ethnic and racial diversity after the completion of this course. GE I and diversity global studies course.

2194 Group Studies U 1 - 5
Special topics to be announced in the semester previous to the one in which the course is offered.
Prereq: Permission of instructor or department. Repeatable to a maximum of 15 cr hrs or 5 completions.

2241 The Middle East Close-Up: People, Cultures, Societies U 3
Introduction to the culture of the Middle East as lived in its villages, towns, and cities.
Prereq: Not open to students with credit for 241 or Antrop 2241 (241). GE cultures and ideas and diversity global studies course. Cross-listed in Anthrop.

2344 Films of the Middle East U 3
Overview of contemporary films from different Middle Eastern countries; how filmmakers of the region, present, and construct their countries using particular modes of representation.
Prereq: English 1110. GE VPA and diversity global studies course.

2680 It’s The End of The World: Apocalypticism in Christianity, Judaism, and Islam U 3
This course will explore how the end of the world—generally understood to be preceded by enormous wars and disasters as well as the judgment of people and a reckoning of their deeds—was imagined over two millennia by Christians, Jews, and Muslims. The course will cover primary and secondary historical works, as well as fictional bestsellers, about the apocalypse from around the world.
Prereq or conc: English 1110.xx, or permission of instructor. Not open to students with credit for History 2680. Cross-listed in History. GE historical study and diversity global studies course.

2798.01 Experiencing Everyday Life in South Asia U 3
Introduces students to the history, politics, cultures, and identities of India. Students explore religious and historical sites (of New Delhi, Varanasi, Agra, Mathura, and VRindavan), experience the political and cultural currents within the country, and see firsthand the broad spectrums of influences that various human movements have made on the landscape of India.
Prereq: 3620 or CompSt 3920, and admission to program. GE education abroad course.

3111 Ancient Empires U 3
This is an introduction to the history and cultures of the ancient empires of southwestern Asia, focusing on the period from the Akkadian empire to the establishment of Islam (ca 2340 BCE - ca 750 CE).
Prereq: English 1110. GE historical study course.

3204 The Middle East in the Media U 3
Examination of contemporary Middle Eastern cultures through critical evaluation of the media which inform our understanding of international politics.
Prereq: English 1110 (110). Not open to students with credit for 344. GE cultures and ideas and diversity global studies course.

3700 Mythology of Ancient Egypt and Mesopotamia U 3
An introductory comparative survey of the mythology of ancient Egypt and Mesopotamia.
Prereq: English 1110 (110). Not open to students with credit for 370. GE cultures and ideas and diversity global studies course.

4601 Israeli and Palestinian Literature U 3
An exploration of Israeli and Palestinian history, identity and conflict using a variety of Arabic and Hebrew texts in translation.
Prereq: English 110.

499B Honors Research in Near Eastern Languages and Cultures U 1 - 3
Offers undergraduate honors students an advanced opportunity to do independent study and research beyond normal coursework.
Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 10 or hrs or 5 completions. This course is graded S/U.

4999 Undergraduate Thesis U 1 - 3
Offers undergraduates with special aptitudes the opportunity to do independent study and research leading to a thesis.
Prereq: Sr standing with an average of B in all NELC classes. Repeatable to a maximum of 10 or hrs or 5 completions. This course is graded S/U.
Undergraduate Honors Thesis 4999H  
Offeres undergraduates with special aptitudes the opportunity to do independent study leading to an honors thesis.  
Prereq: Honors Sr standing with an average of B in all work in NELC, and permission of instructor. Repeatable to a maximum of 10 cr hrs or 5 completions. This course is graded S/U.

The Global Mediterranean 5061  
This course examines the governments, societies, and cultures of the littoral states (empires/nations) of the Mediterranean Sea. We will pay attention to the 'East/West' paradigm as a prism through which to examine past and present events.  
Prereq: Not open to students with credit for Italian 5061 or CompStd 50/16. Cross-listed in Italian and CompStd.

Introduction to the Field of Near Eastern Languages & Cultures 5101  
Offers a concise introduction to the field of Near Eastern Languages and Cultures and its close cognates, focusing on the history and constitution of institutional bases for the study of the Near East.  
Prereq: Jr or Sr standing, and Arabic, Hebrew, or Islamic Studies major; or Grad standing.

Grammar of Selected Ancient Near Eastern Languages 5103  
Fundamentals of grammar and reading in ancient Near Eastern languages (e.g. Egyptian, Coptic, Sumerian, Babylonian, Northwest Semitic dialects, Syriac).  
Prereq: Knowledge of a Semitic language, or permission of instructor. Repeatable to a maximum of 12 cr hrs.

Comparative Semitic Linguistics 5111  
An introduction to the study of comparative Semitic linguistics.  
Prereq: Permission of instructor. Not open to students with credit for JewishSt 5111.

Biblical Aramaic 5120  
Introduction to the language of the Aramaic sections of the books of Daniel and Ezra in the Old Testament.  
Prereq: Hebrew 1103 (104), or permission of instructor. Not open to students with credit for 620.

Jewish Aramaic 5121  
Provides students grammatical and textual skills to read Jewish post-biblical Aramaic and to introduce them to some of the most important texts written in the language. Introduces grammar of Jewish Aramaic, dialectical differences among the Aramaic of the Dead Sea Scrolls, Palestine, and Jewish Babylonia, and how these differences are reflected in the manuscript and inscriptive evidence.  
Prereq: Hebrew 1103, or permission of instructor.

Syriac I 5125  
Introduction to Syriac.  

Syriac II 5126  
Continuation from NELC 5125 Introduction to Syriac (Syriac I).  
Prereq: 5125, or permission of instructor.

Ugaritic 5130  
Introduction to the language and literature of Ugaritic; readings in the Ugaritic mythological literature.  
Prereq: Permission of instructor. Not open to students with credit for JewishSt 5130.

Individual Studies 5193  
Individual studies.  
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs or 5 completions. This course is graded S/U.

Group Studies 5194  
Group studies.  
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs or 5 completions.

Culture and Politics in Central Asia 5204  
Comparative study of cultural legacy and change, including religious and secular life and civil society development, in relation to political trends in Central Asia.  
Prereq: Jr standing, or permission of instructor. Not open to students with credit for 644.

Methodologies for the Study of Ancient Religions 5401  
Introduction to the methodologies and the scholars who have significantly influenced the study of ancient religion.  
Prereq: Not open to students with credit for Clas 5401. Cross-listed in Clas.

Contemporary Issues in the Middle East 5645  
Intensive examination of contemporary issues in the Middle East by applying an interdisciplinary approach.  
Prereq: 2200 or 245, or Jr standing. Cross-listed in IntStd.

Study at a Foreign Institution 5797  
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.  
Prereq: Permission of department. Repeatable to a maximum of 30 cr hrs or 5 completions.

NELC MA Exams 6998  
Preparation for exams for Master of Arts in Near Eastern Languages and Cultures.  
Prereq: Master's student in NELC. This course is graded S/U.
Neuroscience Department

3000 Cellular and Molecular Neuroscience U 3
Course covering cellular and molecular organization of the nervous system. Prereq: Biology 1113 (113) or 1113H (119H), or permission of instructor. Not open to students with credit for NeuroSc 300.

3010 Introduction to Neurophysiology U 3
The course will discuss basic principles of neurophysiology working from the level of the ion channel to the whole system. Prereq: 3000 or 3050, or permission of instructor. Admis Cond course.

3025 History of Neuroscience U 3
Designed for neuroscience majors or non-majors. We will look at the discovery that demonstrated that different areas of the brain serve different functions, the mind-body argument, the birth of experimentation in the brain, and the discovery of neurons, neurotransmitters and neural communication. We will look into the lives of some of the major neuroscientists and their discoveries.

3050 Structure and Function of the Nervous System U 3
Basic principles of the anatomical and neurophysiological organization of the nervous system. Prereq: 3000. Admis Cond course.

3191 Internship in Neuroscience U 1 - 15
Neuroscience students have the opportunity to combine classroom theory with practical application through job-related experiences during a neuroscience related internship (Department Approval of Internship Site is Required). Maximum of 3 credit hours of any combination of NeuroSc 3191 and NeuroSc 3193 can be applied to the Breadth Requirements of the major. Prereq: GPA 2.0 or above, and enrollment in Neuroscience, and permission of instructor. Repeatable to a maximum of 15 or hrs or 5 completions.

3193 Individual Studies U 1 - 15
This course enables students to pursue research in the field of Neuroscience under the guidance of a Neuroscience faculty member. Prereq: Permission of instructor. Repeatable to a maximum of 99 or hrs or 10 completions. This course is graded S/U.

4050H Neurogenetics U 3
This course takes a historical approach to gene discovery in neuroscience: spanning classic mutation studies in simple invertebrate systems to the mapping and identification of neurological disease genes in humans, with stops along the way to explore unique genetic systems and studies, such as the Stanford dog narcolepsy project. Prereq: 3000, or permission of instructor.

4100 Basic and Clinical Foundations of Neurological Disease U 3
Discusses basic and clinical issues related to a variety of neurological disease. Prereq: 3000, or permission of instructor. Admis Cond course.

4550 Autism Spectrum Disorder and Related Neurodevelopmental Disorders U 3
Autism spectrum disorder (ASD) is a complex neurodevelopmental disorder characterized by repetitive and characteristic patterns of behavior and difficulties with social communication and interaction that has its onset during early childhood. This course will explore different aspects of ASD by examining studies on genetics, neurology, neurobiology early intervention, and behavioral science. Prereq: 3000.

4623 Biological Clocks and Behavior U 3
The broad variety of biological rhythms of animals and humans, including ultradian, daily, lunar, tidal, and annual cycles. Properties of biological clocks and ways in which rhythms are generated and how they are synchronized to the external environment. Prereq: 3000. Not open to students with credit for Psych 4623 (623). Cross-listed in Psych.

4640 Neuronal Signal Transduction U 3
Focuses on the fundamental intraocular signaling events and transcriptional control mechanisms that shape CNS physiology and pathophysiology. The course will describe the basic molecular mechanisms that regulate transcriptional and translational control mechanisms in the nervous system. Cellular signaling pathways will be placed within a relevant context. Prereq: 3000.

4850 Contemporary Topics in Neuroscience U 3
A merging of pop culture and Neuroscience, this course will survey recent events and literature in the field of Neuroscience from learning and memory, neurodevelopmental disorders, the microbiome, and aging. Discover why the Wall Street Journal calls this the "Golden Age of Neuroscience." Prereq: 3000 and Psych 3313.

4998 Undergraduate Research U 1 - 15
Students will be given credit for participating in a research project in the laboratory of a faculty member in the Department of Neuroscience. Prereq: Permission of instructor. Repeatable to a maximum of 10 completions. This course is progress graded (S/U). Admis Cond course.

4999 Neuroscience Undergraduate Thesis Research U 1 - 15
A program of individual research with a Neuroscience faculty member culminating in a thesis and oral examination. Prereq: Permission of advisor. Repeatable to a maximum of 15 or hrs or 8 completions. This course is graded S/U.

4999H Neuroscience Undergraduate Honors Thesis Research U 1 - 15
A program of individual research with a Neuroscience faculty member culminating in an honors thesis and oral examination. Prereq: Honors standing, and permission of advisor. Repeatable to a maximum of 15 or hrs or 8 completions. This course is graded S/U.

5544 Behavioral Endocrinology U G 3
Exploration of the interactions among hormones, brain, and behavior through an integrative approach. Prereq: Psych 313, or Grad standing, or permission of instructor. Not open to students with credit for 544 or Psych 4644 (644). CT Admis Cond course.

5790H Developmental Neuroscience U G 3
Investigates the molecular, cellular and genetic mechanisms responsible for building nervous systems. The brain is a complex structure, yet it develops from a single sheet of cells. We will discuss how this development tolerates tremendous genetic and environmental variability to assemble a functioning nervous system. Prereq: Honors standing, 3000 and 3050, and Jr or Sr standing. Not open to students with credit for 7950.

6193 Individual Studies G 1 - 15
Enables students to pursue research in the field of Neuroscience under the guidance of a faculty member in the Department of Neuroscience. Prereq: Permission of instructor. Repeatable to a maximum of 10 or hrs. This course is graded S/U. Admis Cond course.

6194 Group Studies G 1 - 16
Group studies course in which various techniques used in Neuroscience research or specific topics in neuroscience will be taught. Prereq: Permission of instructor. Repeatable to a maximum of 16 or hrs or 4 completions. This course is graded S/U. Admis Cond course.

7000.01 Neuroscience Research Techniques G 1 - 30
This will provide the necessary skills for students who have a goal to work research laboratory either in academia or industry. They will be assigned to laboratories where they will become competent in various lab skills including but not limited to animal handling, PCR, immunohistochemistry, genetic screening, CRISPR, maintenance of lab notebooks, basic data analysis. Prereq: Permission of instructor. Repeatable to a maximum of 30 or hrs or 4 completions.

7000.02 Neuroscience Education Techniques G 1 - 6
To prepare students for a career in teaching neuroscience in an education setting (e.g., high school science, neuroscience courses at community or small liberal arts colleges). Students students will become competent in developing courses, giving lectures, grading exams, counseling students, etc. Prereq: Permission of instructor. Repeatable to a maximum of 6 or hrs or 4 completions.

7001 Foundations of Neuroscience I G 6
Discusses basic principles of the cellular, molecular and neurophysiological, and neuropharmacological organization of the nervous system. Prereq: Permission of instructor. Not open to students with credit for 723, 724, and Pharm 624, CT Admis Cond course.

7002 Foundations of Neuroscience II G 6
Discusses the organization of select systems in the nervous system including motor, sensory, autonomic, and higher cognitive centers. Course will cover anatomical, functional and behavioral concepts. Prereq: Permission of instructor. Not open to students with credit for 725, Psych 726, and Pharmcol 824. CT Admis Cond course. Cross-listed in Dent 7012.03.

7050 Neurobiology of Disease G 3
Neurobiology of Disease will explore the basis of major diseases affecting the nervous system. Prereq: Permission of instructor. Not open to students with credit for 705. Cross-listed in BioPhrm.

7100 Current Topics in Neuroscience G 1
In this course students will be assigned journal articles in the field of Neuroscience. They will be expected to discuss the papers in class under faculty guidance. Repeatable to a maximum of 15 or hrs. This course is progress graded (S/U).

7200.01 Neuroscience Laboratory G 1
Laboratory component of NeuroSc 7002 in which students will learn anatomy of the human brain. Prereq: Permission of instructor. Admis Cond course. Cross-listed in Dent 7012.01.

7500 Neuroimmunology G 2
Discusses research and clinical applications of inflammatory processes within the central nervous system with special emphasis on neurodegenerative disorders, autoimmune disease, and neurotrauma (e.g., spinal injury). Prereq: Permission of instructor. Admis Cond course.

7600 Neuroscience Capstone Project G 2 - 4
The capstone course is designed to evaluate the student's ability to problem solve, carry out a critical analysis of scientific procedures and/or educational material, and their ability to communicate this information to their peers and instructors in the degree program. Prereq: Permission of instructor. Repeatable to a maximum of 8 or hrs or 2 completions.
Neuroscience Department

5735 Nuclear Power Plant Operations
Introduction to power plant systems, regulatory requirements, integrated plant operations, and emergency responses. Prereq: 4505 (505) or MechEng 4505 (505); or Grad standing; or permission of instructor. Not open to students with credit for 735 or 745.

5742 Nuclear Instrumentation, Radiation Sensor and Detection
Systematic study of nuclear radiation source, interaction with matter and their detection using gas-filled, semiconductor, Scintillation detectors, HPGe spectrometry, pulse processing, and statistical data analysis.

5776 Nuclear Fuel Cycle and Radioactive Waste Management
Review of the nuclear fuel cycle and radioactive waste management, including uranium mining, milling, conversion, enrichment, fuel fabrication, reactor operations, reprocessing, waste treatment, and disposal. Prereq: 4505 (505) or MechEng 4505 (505); or Grad standing; or permission of instructor.

6193 Individual Studies in Nuclear Engineering
Designed to give the advanced student opportunity to pursue special studies not otherwise offered. Prereq: Permission of instructor. Repeatable to a maximum of 4 cr hrs or 4 completions.

6194 Group Studies in Nuclear Engineering
Special group studies of a selected area of nuclear engineering not provided in other courses. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

6507 Intermediate Numerical Methods
Numerical techniques and computer algorithms to solve initial and boundary value problems relevant to engineering applications, such as heat conduction and mass diffusion. Prereq: MechEng 2850 (250), Math 2174 (265), 2415 (415), or 4512 (557 or 512); or Grad standing in MechEng, AeroEng, or NucEng; or permission of instructor. Not open to students with credit for 707 or MechEng 6507 (707). Cross-listed in MechEng.

6536 Nuclear Reactor Systems and Analysis
Intermediate-level course covering thermal and mechanical design aspects of nuclear power plants. The thermodynamics of operating nuclear power plants (BWRs and PWRs) are emphasized. Prereq: 4505 (505) or MechEng 4505 (505); and 3501 or 3502 (502), or equiv.; or permission of instructor. Not open to students with credit for 736 or MechEng 6536 (736). Cross-listed in MechEng.

6537 Nuclear Reactor Thermal Hydraulics
Focuses on heat transfer and fluid flow applications in nuclear power reactor systems, including heat transfer in LWR fuel rods, coolant, and reactor internals. Prereq: 6536 (736) or MechEng 6536 (736), or equiv., or permission of instructor. Not open to students with credit for 737 or MechEng 6537 (737). Cross-listed in MechEng.

6708 Reactor Theory
Principles of neutron chain reaction, neutron diffusion and moderation. One, two and multi-group diffusion equation and analytical solutions. Heterogeneous reactors and homogenization. Commercial reactors. Prereq: 4505 (505) or MechEng 4505 (505); or Grad standing; or permission of instructor. Not open to students with credit for 704 or 705 or 708.

6716 Probabilistic Reliability and Safety Assessment
Methods underlying probabilistic risk assessment (PRA) and how they are used in assessing the public health risk of nuclear systems. Prereq: 4505 (505), MechEng 4505 (505), Grad standing, or permission of instructor. Not open to students with credit for 5716 (716) or MechEng 5716 (716). Cross-listed in MechEng.

6725 Nuclear Reactor Dynamics
Nuclear reactor system transient operation, control mechanisms. Prereq: 6708 (705), or Grad standing; or permission of instructor. Not open to students with credit for 720.

6726 Reactor Dynamics Laboratory
Measurement of reactor characteristics and operational parameters using the Ohio State University Reactor. Prereq: 6708 or 705. Prereq or concur: 6725, or Grad standing; or permission of instructor. Not open to students with credit for 744.

6750 Nuclear Materials and Irradiation Effects in Materials
Develop an understanding of the interactions of materials with radiation and the resulting changes in materials properties. Discussion of common materials in nuclear materials. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 750 or MatScEn 6750 (750). Cross-listed in MatScEn.

6766 Nuclear Engineering Design
A practical experience in the design process within the context of nuclear engineering. Students will be organized into groups. A design project will be specified. Each group will produce and present a final design report. Prereq: NucEng MS Core, or permission of instructor.
348 Nuclear Engineering

6881 Nuclear Engineering Seminar G 1
Discussions by graduate students and invited eminent speakers of their research projects and topics of interest in nuclear engineering.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 10 or hrs or 20 completions.

7865 Neutron Slowing Down and Thermalization G 3
Neutron slowing down in infinite and finite media, thermal spectrum calculations, and cell calculations in heterogeneous core lattices.
Prereq: 6708, 704, 705, or 708; or permission of instructor. Not open to students with credit for 865.

8193 Individual Studies in Nuclear Engineering G 1 - 4
Designed to give the advanced student opportunity to pursue special studies not otherwise offered.
Prereq: Permission of Instructor. Repeatable to a maximum of 4 cr hrs or 4 completions.

8194 Group Studies in Nuclear Engineering G 1 - 4
Special group studies of a selected area of nuclear engineering not provided in other courses.
Prereq: Permission of Instructor. Repeatable to a maximum of 10 cr hrs or 10 completions.

8998 Graduate Research in Nuclear Engineering G 1 - 12
Nuclear Engineering research for thesis. Repeatable. This course is graded S/U.

8999 Nuclear Engineering Research for Dissertation G 1 - 15
Research for dissertation purposes only. Repeatable. This course is graded S/U.

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Nursing

1100 Nursing Survey U 1
Introduction to the university community, the College of Nursing, and the profession of nursing with emphasis on strategies for success, resources, and procedures. Designed for students admitted as freshman. 1100H (honors) may be available.
Prereq: Enrollment in pre-Nursing. Not open to students with credit for 100. This course is progress graded (S/U).

1103 Nursing Assistant Education U 3
Knowledge and skills necessary to provide patient care as a nursing assistant in various healthcare settings.
Prereq: Permission of Nursing 1103 course head.

2100 Introduction to Professional Nursing: Concepts and Practice U 3
Introduction to professional Nursing and the health care delivery system, its history and evolution, and the examination of the legal and ethical basis for professional practice.
Prereq: Admission to the Nursing major. Not open to students with credit for 301.01 or 301.02 or 301.03.

2102 Optimizing Personal Health, Happiness & Well-being U 3
Application of evidence-based concepts and strategies to manage stress through cognitive-behavioral skills building. Strengthen resiliency, set goals, problem solve and engage in healthy lifestyle behaviors to improve personal health, happiness and well-being.

2270 Nursing Care of Adults and Older Adults I U 5
Nursing knowledge essential to caring for adults and older adults with emphasis on health promotion, risk assessment, disease prevention, and health problems.
Prereq: 2100, 2410, and 2450. Not open to students with credit for 402 and 403.

2367 Writing About Healthcare Issues in the United States U 3
Designed to enhance student's critical and analytical reading and writing skills through a study of current health issues in the United States.
Prereq: English 1110 (110) or equiv. Not open to students with credit for 367. GE writing and comm course. level 2.

2410 Health Assessment U 3
Introduction to the foundational health assessment concepts of Nursing and the assessment skills required in the provision of Nursing care across the lifespan.
Prereq: Admission to the Nursing major. Not open to students with credit for 301.01 or 301.02 or 301.03.

2420 A Nursing Perspective: Life Span Development of Individuals within a Family Context U 3
Study of growth and development of individuals within a family context from conception to death with an emphasis on assessment and interventions utilized in Nursing practice.
Prereq: Admission to the Nursing major. Not open to students with credit for 337.

2450 Pathophysiology for Nursing Practice U 3
Study of pathophysiology and disease processes across the lifespan as a scientific foundation for nursing practice.
Prereq: Admission to Nursing major. Not open to students with credit for 385.01 or 385.02 or 385.03.

2460 Introduction to Therapeutic Communication for Health Professionals U 3
Introduction to the process of effective communication and collaboration in health care settings.
Prereq: Admission to the Nursing major. Not open to students with credit for 301.01 or 301.02 or 301.03.

2470 Introductory Pharmacology for Nurses U 3
Introduction to pharmacokinetic principles, drug mechanism of action and nursing implications for common classes of medications. Prospective Graduate Entry Nursing students may enroll in Spring semester by contacting nursing@osu.edu.
Prereq: 2100, 2410, 2450, and 2460. Not open to students with credit for 604.

2780 Scholarship for Evidence Based Practice U 3
Introduction to and application of foundational concepts, skills and competencies of evidence-based practice (EBP), to support implementation to improve practice and outcomes. Includes overview of research methodologies, concepts and ethics to build critical appraisal skills.
Prereq: Enrollment in the Nursing major.

2781H Honors Research Methods U 4
Introduction to information literacy, nursing research methods, evidence based practice, the linkages between these areas and how they influence professional nursing practice through direct involvement in the research process.
Prereq: Honors standing. Soph standing in the major. Not open to students with credit for 541H.

2785S Nursing Short Term Study Abroad Program U ½ - 4
Preparing students for travel and learning experiences abroad. Participant in the College of Nursing short term study abroad program required. Domestic field experiences may be allowable.
Prereq: Enrollment in nursing major, and permission of instructor. Repeatable to a maximum of 4 completions. This course is graded S/U.

2890.01H Sophomore Honors Seminar I U 1
Discussion of topics relevant to academic, professional, and personal development in nursing.
Prereq: Honors standing, and Soph standing in Nursing. Not open to students with credit for 320.01H, 320.02H, or 320.03H.

2890.02H Sophomore Honors Seminar II U 1
Discussion of topics relevant to academic, professional, and personal development in nursing.
Prereq: Honors standing, and 2890.01H; or permission of instructor. Not open to students with credit for 320.01, 320.02, or 320.03.

3115 School Health Roles and Responsibilities U 3
Introduction to the scope of roles and responsibilities involved in school health services locally and globally within school and community settings. Consideration of regulatory directives, health goals and resources. Analysis of skills and factors used to promote healthy school environments.
Prereq: Admission to certificate program, or permission of instructor.

3116 Management of School Health Services U 3
Overview of the strategies for promoting school health on a daily, weekly, and annual basis focusing on health promotion and disease prevention.
Prereq: Admission to certificate program, or permission of instructor.

3117 Children with Special Needs in Schools U 3
School health services for children with special needs in schools based on best evidence. Interdisciplinary, legislative, and professional aspects considered.
Prereq: Admission to certificate program, or permission of instructor.

3118 Practicum in School Nursing U 3
Supervised school nurse field experience in school setting applying the roles and responsibilities of a school nurse according to state and national standards.
Prereq or concur: 3115, 3116, 3117, and admission to certificate program, or permission of instructor.

3200 Failure to Rescue: Recognition and Management of Clinical Triggers U 2
Designed to introduce students to ECG interpretation and the clinical and decision-making skills necessary to recognize and respond to changes in patients' conditions.
Prereq: Jr standing in Nursing, or professional nurse, or permission of instructor. Not open to students with credit for 525.

3270 Nursing Care of Adults and Older Adults II U 7
Nursing knowledge essential to caring for adults and older adults with emphasis on management of acutely ill patients with complex health problems.
Prereq: 2270. Not open to students with credit for 501.

3430 Cultural Competence in Health Care: US and Global Contexts U 3
Introduction to concepts and techniques for the provision of culturally competent care within the U.S. and across global contexts.
Prereq: Enrollment in the Nursing major. Not open to students with credit for 440.

3431 Global Options Nursing Capstone U 3
Capstone Global Health project for students in the undergraduate Global Options Nursing program. Students enrolling in this course will need instructor permission to ensure that all other Global Option requirements are completed before enrolling.
Prereq: Enrollment in undergraduate Global Options Nursing program.
3890.01H Junior Honors Seminar I U 1
Discussion of topics relevant to research and the senior thesis proposal.
Prereq: Honors standing, and 3890.02H; or permission of instructor. Not open to students with credit for 420.01H, 420.02H, or 420.03H.

3890.02H Junior Honors Seminar II U 1
Discussion of topics relevant to research and the senior thesis proposal.
Prereq: Honors standing, and 3890.01H; or permission of instructor. Not open to students with credit for 420.01H, 420.02H, or 420.03H.

4110 Nursing Process in the Perioperative Setting U 2
Study of the nursing process with clients in the preoperative, intraoperative and postoperative phase; emphasis on patient care coordinator, nursing roles, and evidence-based practice.
Prereq: Jr or Sr standing in the College of Nursing, or permission of instructor. This course is graded S/U.

4193 Individual Studies in Nursing U 1 - 4
Students will gain skills and knowledge within a focused area of study within the area of expertise of a nursing faculty mentor. The course will expose students to novel scholarly activities and provide individualized learning opportunities.
Prereq: Enrollment in Nursing major, and permission of instructor. Repeatable to a maximum of 20 or hrs or 5 completions. This course is graded S/U.

4240S Concepts in Community Health Nursing U 4
Study of community health nursing theory and principles applied to the nursing care of individuals, families, groups, communities, and populations.
Prereq: 2270, 3270, and 4260.

4260 Nursing Care of Children and Their Families U 4
Nursing knowledge essential to caring for children and families with emphasis on health promotion, risk assessment, disease prevention, and common acute and chronic health problems.
Prereq: 2270. Not open to students with credit for 405.

4270 Transition to Professional Nursing U 6
Exploration of personal and professional topics designed to assist in promoting successful transition from nursing education to a rapidly changing work environment.
Prereq: 3270. Not open to students with credit for 503.

4280 Nursing Care of Women and their Families during Reproductive Transitions U 4
Nursing knowledge and clinical practice essential to caring for women and their families during reproductive transitions.
Prereq: 2270. Not open to students with credit for 404.

4340 Psychiatric and Mental Health Nursing U 4
Nursing knowledge applied to the promotion of mental health and to the recovery of individuals with psychiatric diagnoses and their families.
Prereq: 2270. Not open to students with credit for 512.

4400 Leadership and Management of Nursing Practice U 3
Exploration of leadership and management principles, including an examination of Nursing informatics, as applied to Nursing practice and the health care environment.
Prereq: 3270. Not open to students with credit for 503.

4890.01H Senior Honors Seminar I U 1
Discussion of topics relevant to research and the senior thesis proposal and professional development in nursing.
Pre req: Honors standing, and 4890.02H; or permission of instructor. Not open to students with credit for 520.01H, 520.02H, or 520.03H.

4890.02H Senior Honors Seminar II U 1
Discussion of topics relevant to research and the senior thesis proposal and professional development in nursing.
Prereq: Honors standing, and 4890.01H; or permission of instructor. Not open to students with credit for 520.01H, 520.02H, or 520.03H.

4999 Undergraduate Thesis Research U ½ - 5
Supervised undergraduate nursing thesis research.
Prereq: Jr or Sr standing, or permission of instructor. This course is graded S/U.

5000 Interdisciplinary Case Management for Working with U G 2
Provides students the opportunity to collaborate with students from other health care professions including pharmacy, health and rehabilitation sciences, nursing, medicine and social work. The students will use a problem-based learning approach to patient care in community health, focusing on populations, living in poverty, with complex healthcare needs.
Prereq: Sr or Grad standing. This course is graded S/U. Cross-listed in HPHSc, MedColl, Phr, and SocWork.

5110 Interpersonal Relationships: Personal and Professional U G 1
Boundaries
In depth study of interpersonal relationship boundary issues in personal and professional relationships.
Prereq: Not open to students with credit for 450. This course is progress graded (S/U).

5111 Palliative and End of Life Care U G 2
Foundation for palliative and hospice care through exploration of individual, family and loved ones' needs at the end of life.
Prereq: Sr or Grad standing in Nursing, or permission of instructor. Not open to students with credit for 607.

5115 MINDSTRONG: An Evidence-based Program to Reduce Stress and Promote Overall Well-being
Through a series of educational and skills building activities, this course provides an evidence-based program that reduces stress, improves mental resiliency and builds protective factors that improve overall health, well-being, and academic performance. This course is graded S/U.

5193 Individual Clinical Studies in Nursing U G ½ - 5
Students will gain knowledge within the area of expertise of a nursing faculty mentor. The course will provide individualized learning opportunities.
Prereq: Enrollment in Nursing major, or permission of instructor. Repeatable to a maximum of 20 cr hrs or 4 completions. This course is graded S/U.

5194 Group Studies in Nursing U G 1 - 4
Group studies of special problems in Nursing.
Prereq: Sr or grad standing in Nursing. Repeatable to a maximum of 10 cr hrs or 3 completions.

5300 Nursing Care of the High-Risk Neonate U G 2
Introduction to the role of the neonatal nurse in the provision of comprehensive nursing care of the high-risk neonate.
Prereq: 2450 (385.03) or 7450 (704), or permission of instructor. Not open to students with credit for 657.

5410 Health Assessment Review U G 2
Review of basic health assessment skills with emphasis on health history taking, physical examination techniques and recording concise summaries.
Prereq: Permission of instructor. Not open to students with credit for 605.

5430 Interdisciplinary Healthcare in the Global Community U G 2
Development of strategies for culturally competent interdisciplinary healthcare in selected world communities.
Prereq: 3430 (440) or 6430 (640), or permission of instructor. Not open to students with credit for 609.

5431 Global Health Care in Your Own Back Yard U G 3
Designed for graduate students to develop strategies for culturally competent interdisciplinary health care in selected ethnic communities that have immigrated to the United States.
Pre req: 3430 or 6430, or permission of instructor.

5797 Study at a Foreign Institution U G 1 - 18
An opportunity for students to study at a foreign institution and receive OSU credit for work completed there. Students will pay OSU fees and any fees in excess of OSU tuition, as well as all travel and subsistence costs.
Pre req: Permission of department chairperson. Repeatable.

5798S Study Tour U G ½ - 4
Specific content, location, semester(s) of offering, and prerequisites vary; contact department office for details. Must attend required Office of International Affairs (OIA) and College of Nursing pre-departure orientation sessions, and enroll in the U.S. Department of State Smart Traveler Program as required by OIA. Domestic field experiences may be allowable.
Prereq: Enrollment in Nursing, and permission of instructor. Repeatable to a maximum of 8 cr hrs or 2 completions. This course is graded S/U.

6100 Introduction to Professional Nursing Practice G 2
Exploration of personal and professional topics designed to assist in promoting successful transition to the nursing profession in a rapidly changing health care environment.
Prereq: Enrollment in the Grad entry option of the M.S. in Nursing program.

6110 Health Literacy G 2
Examination and analysis of issues of low health literacy, including populations at risk, research, measurement tools, writing in plain language, health communication techniques, and organizational approaches.
Prereq: Grad standing in Health Sciences Professions, Literacy Studies Specialization, Geriatrics Specialization, College and University Teaching Specialization, or permission of faculty coordinator. Not open to students with credit for 710.

6114 Strategies for Personal Health G 1
An overview of four dimensions of personal energy (physical, emotional, mental and spiritual) in relation to personal health. Emphasizes development and evaluation of an evidence-based, individually-tailored, and preferred personal health plan.
Pre req: Grad standing. This course is graded S/U.

6240S Concepts in Community Health Nursing G 4
Study of community health nursing theory and principles applied to the nursing care of individuals, families, groups, communities, and populations.
Pre req: 6250, 6270, and 7450.

Nursing 349
Nursing Care of Children and Their Families G 4
Nursing knowledge essential to caring for children and families with emphasis on health promotion, risk assessment, disease prevention, and common acute and chronic health problems. Prereq: 6270, 6420, and 7450.

6270 Nursing Care of Adults and Older Adults I G 7
Nursing knowledge essential to caring for adults and older adults, with emphasis on health promotion, risk assessment, disease prevention, and health problems. Prereq: 6410 and 6100. Concur: 7450. Not open to students with credit for 622.

6271 Nursing Care of Adults and Older Adults II G 8
Nursing knowledge essential to caring for adults and older adults with emphasis on management of acute/chronic problems with complex health problems. Prereq: 6270, 6260, 6290, 6240S, 6340, and 7450. Concur: 6460. Not open to students with credit for 631.

6280 Nursing Care of Women and their Families during Reproductive Transitions G 4
Nursing knowledge and clinical practice essential to caring for women and their families during reproductive transitions. Prereq: 6270, 6420, and 7450. Not open to students with credit for 623.

6330 Advanced Pediatric Physical Assessment for the School Nurse G 2
Application of principles from growth and development, anatomy, physiology, pathophysiology, clinical decision-making and relevant health assessment data to school nurses in the care of the school age child. Prereq: Enrolled in the College of Nursing, the College of Education School Nurse Program, or permission of instructor. Not open to students with credit for 723.

6340 Psychiatric and Mental Health Nursing G 4
Nursing knowledge applied to the promotion of mental health and to the recovery of individuals with psychiatric diagnoses. Prereq: 6270 and 7450.

6343 Health Coaching I G 1
Underpinnings and application of knowledge and skills in motivational interviewing and patient engagement for health coaching in interprofessional teams. Prereq: Enrollment in Interprofessional Healthcare certificate program, or permission of instructor. This course is graded S/U.

6344 Health Coaching II G 1
Underpinnings and implementation of patient-directed care management and shared decision-making for health coaching in interprofessional teams. Prereq: Enrollment in Interprofessional Healthcare certificate program, or permission of instructor. This course is graded S/U.

6403 Interprofessional Leadership G 1
Students will engage in discussion and activities to develop interprofessional leadership competencies including interprofessional collaboration and effective communication to lead and serve on health care teams. Prereq: Enrollment in Interprofessional Healthcare certificate program, or permission of instructor. This course is graded S/U.

6410 Introduction to Health Assessment G 3
Introduction to the foundational health assessment concepts of Nursing and the assessment skills required in the provision of Nursing care. Prereq: Enrollment in the graduate entry program. Not open to students with credit for 611.

6420 A Nursing Perspective: Life Span Development of Individuals within a Family Context G 3
Study of growth and development of individuals within a family context from conception to death with an emphasis on assessment and interventions utilized in Nursing practice. Prereq: Enrollment in the graduate entry program. Not open to students with credit for 637.

6430 Cultural Competence in Health Care: US and Global Contexts G 3
Introduction to concepts and techniques for the provision of culturally competent care within the U.S. and across global contexts. Prereq: Enrollment in the Grad entry option of the M.S. in Nursing program, Obesity Sciences Graduate Interdisciplinary Specialization, or permission of instructor.

6460 Chronic Care Counseling in Spanish for the Latino Patient G 3
Introduction to the linguistic forms and pragmatic features of Spanish discourse about health and wellness. Theoretical and humanistic underpinnings of patient-centered communication in relation to improving health and wellness outcomes. Emphasis on clinical conversation techniques, practice with standardized patients, and facets of Latino culture relevant to diabetes and chronic care. Prereq: 7410, Grad standing in Nursing, Registered Nurse Licensure, and moderate level Spanish proficiency by testing and interview with instructors; or permission of instructor for students enrolled in the RN-to-BSN program. This course is graded S/U.

6480 Quality and Safety Initiatives in Clinical Practice G 1
A seminar course designed to promote awareness and develop problem-solving leadership skills in creating and sustaining healthy work environments. Concur: 6271. Not open to students with credit for 633.01.

6481.01 Health Systems Informatics and Quality I G 1
Provision of safe, timely, effective, efficient, equitable, and patient-centered care as a member of an interprofessional healthcare team. Prereq: Enrollment in Interprofessional Healthcare certificate program, or permission of instructor. This course is graded S/U.

6481.02 Health Systems Informatics and Quality II G 1
Provision of safe, timely, effective, efficient, equitable, and patient-centered care as a member of an interprofessional healthcare team. Prereq: 6481.01, or permission of instructor. This course is graded S/U.

7110 School Nurse Wellness Coordinator Practice G 3
School nurse wellness coordinator field experience in a school setting applying the roles and responsibilities of a school nurse wellness coordinator. Prereq: Enrollment in Category 3 School Nurse Wellness Coordinator Certificate program, or permission of instructor.

7193 Individual Studies in Nursing G 1 - 4
Students will gain skills and knowledge within a focused area of study within the area of expertise of a nursing faculty mentor. The course will expose students to novel scholarly activities and provide individualized learning opportunities. Prereq: Grad standing in Nursing, or permission of instructor. Repeatable to a maximum of 20 cr hrs or 5 completions. This course is graded S/U.

7208.01 Adult Acute Care Nurse Practitioner Practicum I G 3 - 7
Designed to build on major components critical to the knowledge of diagnosis and management of pathologies in acutely ill adults. Focus is centered on the acute care nurse practitioner as an initial care provider for patients with acute illnesses. Prereq: 7410, 7450, and 7470.

7208.02 Adult Acute Care Nurse Practitioner Practicum II G 3 - 10
Application of principles of advanced practice Nursing applied to Adult Critical Care as a population focus. Experiences concentrate on clinical decision-making in an interdisciplinary environment. Prereq: 7206.01.

7208.03 Adult Acute Care Nurse Practitioner Practicum III G 10
Application of principles of advanced practice nursing applied to Adult Critical Care as a population focus. Experiences concentrate on clinical decision-making in an interdisciplinary environment. Prereq: 7206.02.

7218.01 Advanced Nursing Practice in Pediatric Acute Care I G 1 - 11
Application of knowledge, research findings, advanced skills and interventions, including pharmacotherapy, in the management of children with acute and critical conditions affecting circulatory and respiratory function. Prereq: 7338.01.

7218.02 Advanced Nursing Practice in Pediatric Acute Care II G 1 - 11
Application of knowledge, research findings, skills and interventions in the advanced nursing care of acutely and critically ill children. Prereq: 7218.01.

7228.01 Advanced Practice Adult Gerontology Primary Care Nurse Practitioner Clinical Practicum I G 2 - 6
Application of advanced practice nursing theories, research findings, skills and interventions, including pharmacological management to the care of adults, focusing on health promotion needs and the most commonly seen diagnoses in primary care. Prereq: 7410, 7450, and 7470.

7228.02 Advanced Practice Adult Gerontology Primary Care Nurse Practitioner Clinical Practicum II G 1 - 10
Application of advanced practice nursing theories, research findings, skills and interventions, including pharmacological management to the care of adults, focusing on health promotion needs and the most commonly seen diagnoses in primary care. Prereq: 7228.01.

7228.03 Advanced Practice Adult Gerontology Primary Care Nurse Practitioner Clinical Practicum III G 9
Application of advanced practice nursing theories, research findings, skills and interventions, including pharmacological management to the care of adults, focusing on health promotion needs and the most commonly seen diagnoses in primary care. Prereq: 7228.02.

7230 Clinical Nurse Leader (CNL) Roles and Responsibilities G 2
Introduction to the roles and responsibilities of the Clinical Nurse Leader (CNL), with an emphasis on the value-added aspects of the CNL role for patient care, outcomes, and healthcare environments. Prereq: Enrollment in the Clinical Nurse Leader (CNL) specialty track of the M.S. in Nursing program, or permission of instructor.

7231 Pharmacology for the Clinical Nurse Leader G 3
Emphasis on advanced knowledge in pharmacology in relation to the Clinical Nurse Leader (CNL) role across healthcare settings. The role of the CNL in patient teaching for safe and effective medication administration and assessment of medication management in chronic disease is emphasized. Prereq: Enrollment in the Clinical Nurse Leader (CNL) specialty track of the M.S. in Nursing program; or permission of instructor.
7238.01 Introduction to Clinical Nurse Leader Practice
- Prereq: Grad standing in Nursing, and Clinical Nurse Leader specialty.

7238.02 Transition to Clinical Nurse Leader Practice
- Intensive clinical experience to apply theories and engage fully in the role of the Clinical Nurse Leader (CNL).
- Prereq: 7228.01.

7258.01 Foundational Knowledge for Nursing and Health Systems Management
- Study of the theoretical knowledge that provides the foundation for Nursing leadership in program and health systems management across the continuum of care.
- Prereq: 7403 and admission to the Nursing and Health Systems Management specialty. Not open to students with credit for 807, 808, or 809.

7258.02 Skills for Nursing and Health Systems Management
- Study of the skills, strategies, and techniques necessary for program and health systems nursing management across the continuum of care.
- Prereq: 7258.01. Not open to students with credit for 807, 808, or 809.

7260 Concepts and Issues in Advanced Family Nursing
- Issues of health care for family units; development of personalized health care strategies, culturally appropriate plans, examination of sociocultural policies affecting family health.
- Prereq: Grad standing in Nursing, or enrollment in the Specialization in Pediatric Occupational Therapy. Not open to students with credit for 721.

7268.01 Advanced Practice Family Nurse Practitioner Clinical Practicum I
- Focus on primary healthcare of individuals and families across the lifespan. Emphasis on knowledge and skills for patient-centered evidence-based practice, clinical reasoning/judgment for advanced practice nursing, health and wellness, and common pathological conditions.
- Prereq: 7250, 7403, 7410, 7420, 7470, 7450, 7461, 7500, 7780, and enrollment in M.S. in Nursing program, and enrollment in the Family Nurse Practitioner specialty track; or 7410, 7450, and 7470, and enrollment in BSN-DNP; or permission of instructor.

7268.02 Advanced Practice Family Nurse Practitioner Clinical Practicum II
- Focus on primary healthcare of individuals and families across the lifespan. Emphasis on interprofessional partnerships, community engagement, and diverse family needs by developmental stage: reproductive, childrearing, aging, caregiving.
- Prereq: 7268.01.

7268.03 Advanced Practice Family Nurse Practitioner Clinical Practicum III
- Focus on primary healthcare of individuals and families across the lifespan. Emphasis on integration of scientific foundations, social determinants of health, and interprofessional leadership to manage complex healthcare needs of patients.
- Prereq: 7268.02.

7280 Conceptual Frameworks for Nurse-Midwifery
- Theoretical, structural, historical, and political/legal foundations of nurse-midwifery in the United States and internationally.
- Prereq: Enrollment in the Nurse-Midwifery specialty. Not open to students with credit for 724.

7281 Advanced Reproductive Dynamics
- Principles of reproductive anatomy and physiology including puberty, genetics, pregnancy, embryonic/fetal development, parturition, puerperium, lactation, and menopause in relationship to advanced practice nursing care.
- Prereq: Enrollment in the Nurse-Midwifery or Women's Health specialty track. Not open to students with credit for 722.

7282 Labor and Birth Clinical Immersion
- Provides orientation to intrapartum care and the role of the health care team for specialty students without prior experience in this clinical area.
- Prereq: Enrollment in the Nurse-Midwifery or Dual Nurse-Midwifery and Women's Health specialty; or permission of the course head.

7288.01 Advanced Practice Nursing: Nurse-Midwifery Clinical Practicum I
- Application of theories, research findings, skills, and interventions including pharmacological management, during the provision of advanced practice nursing care.
- Prereq: 7281, 7410, 7450, and 7470.

7288.02 Advanced Practice Nursing: Nurse-Midwifery Clinical Practicum II
- Application of theories, research findings, skills, and interventions including pharmacological management, during the provision of nurse-midwifery care to women and their families.
- Prereq: 7288.01.

7288.03 Advanced Practice Nursing: Nurse-Midwifery Clinical Practicum III
- Application of theories, research findings, complex skills, and interventions including pharmacological management, during the provision of nurse-midwifery care to women and their families.
- Prereq: 7288.02.
Advanced Practice Nursing: Care of the High-Risk Neonate III
Application of theories, research findings, and interventions for advanced practice nurses in the care of high-risk neonate and their families in a variety of settings.
Prereq: 7308.02.

7318.01 Neonatal Clinical Nurse Specialist Practicum I
First of two practicums to apply advanced practice nursing theories, research findings, skills and interventions, including pharmacological management in the care of neonates by clinical nurse specialists across a variety of care settings.
Prereq: 7300, 7301, 7302, 7303, and enrollment in the Neonatal CNS specialty.

7318.02 Neonatal Clinical Nurse Specialist Practicum II
Second of two practicums advanced practice nursing theories, research findings, skills and interventions, including pharmacological management in the care of clinical nurse specialists across a variety of care settings.
Prereq: 7300, 7301, 7302, 7303, 7318.01 and enrollment in the Neonatal CNS specialty.

7330 Advanced Pediatric Health Assessment
Advanced knowledge and skills in the health assessment of children birth through young adulthood with an emphasis on sophisticated clinical reasoning.
Prereq: Enrollment in Pediatric NP Primary or Acute Care Specialty. Grad Entry students must have successfully completed all pre-licensure coursework (6100, 6240S, 6260, 6270, 6271, 6340, 6410, 6420, 6430, and 6480).

7331 Assessment and Management of Child and Adolescent Mental Health Issues
Application of theories, research findings, assessment, and clinical management principles to evidence-based child and adolescent mental health screening, early intervention, and mental health promotion.
Prereq: Enrollment in M.S. in Nursing, prior successful completion of an advanced health assessment course, and concurrent enrollment in an advanced pediatric acute or primary care clinical practicum course (Nursing 7218.01, Nursing 7218.02, Nursing 7338.01 or Nursing 7338.02); or permission of instructor.

7332 Advanced Health Assessment of Infants, Children, and Adolescents
Development of advanced assessment skills with emphasis on acquisition of pertinent assessment data for pediatric clients from birth through adolescence.
Prereq: Enrollment in the M.S. in Nursing, or permission of instructor. This course is graded S/U.

7338.01 Advanced Nursing Practice in Pediatric Primary Care I
Application of theories, research findings, skills, and interventions including pharmacological management to advanced practice nursing in pediatric health promotion and preventive care.
Prereq: 7330. Open to students with credit for 859.

7338.02 Advanced Nursing Practice in Pediatric Primary Care II
Application of theories, research findings, skills, and interventions including pharmacological management to advanced practice nursing in pediatric health promotion and preventive care.
Prereq: 7338.01.

7338.03 Advanced Nursing Practice in Pediatric Primary Care III
Application of theories, research findings, skills, and interventions including pharmacological management to advanced practice nursing in the care of children with common chronic conditions.
Prereq: 7338.02.

7340 Neuroscience Principles and Concepts Relevant to Psychiatric and Mental Health
Neurobiological bases of brain-mind-behavior relationships in mental health and illness, including chemical dependence. The promotion, maintenance, and restoration of central nervous system homeostasis will be emphasized.
Prereq: Grad standing in Nursing and the Psychiatric Mental Health Nursing specialty. Not open to students with credit for 740.

7341 Advanced Psychiatric and Mental Health Nursing: Therapies across the Lifespan
Advanced nursing clinical therapeutic interventions with persons across the lifespan diagnosed with mental illness and/or substance abuse.
Prereq: Grad standing and enrollment in the Psychiatric Mental Health Nursing specialty. Not open to students with credit for 745 or 777.

7342 Motivational Interviewing
Critical analysis of theoretical and research findings involved in the conduct of motivational interviewing to create behavior change and improve health outcomes.
Prereq: Grad standing in Nursing.

7343 Introduction to Nurse Coaching
Provides an overview of the nurse coach role, theory and competencies with application to nurse coaching skills.
Prereq: Grad standing, and enrollment in the Nurse Coaching certificate program; or permission of instructor.

7344 Evidence-Based Coaching in Interprofessional Practice
Review of evidence-based coaching approaches based on the science of behavior change and integrated within patient-centered, interdisciplinary practice.
Prereq: Grad standing, or permission of instructor.

7345 Advanced Nurse Coaching
Addresses nurse coaching competencies that promote whole person health.
Prereq: 7343.

7346 Introduction to Health and Wellness Coaching
Provides an overview of the health and wellness coach role, theory and competencies with application to coaching skills.
Prereq: Enrollment in the Health and Wellness Coaching certificate program, and Grad standing; or permission of instructor.

7347 Advanced Health and Wellness Coaching
Builds upon introductory coaching course to refine coaching skills that promote whole person health.
Prereq: 7346.

7348.01 Advanced Practice Psychiatric and Mental Health Nursing Clinical Practicum I
Application of advanced practice psychiatric and mental health nursing biopsychosocial interventions with individuals experiencing mental illness and chemical dependence.
Prereq: 7340 and 7341.

7348.02 Advanced Practice Psychiatric and Mental Health Nursing Clinical Practicum II
Application of advanced practice psychiatric and mental health nursing biopsychosocial interventions with individuals experiencing mental illnesses and chemical dependence.
Prereq: 7345.01.

7348.03 Advanced Practice Psychiatric and Mental Health Nursing
Application of advanced practice psychiatric and mental health nursing biopsychosocial interventions with individuals experiencing mental illness and chemical dependence.
Prereq: 7345.02.

7350 Psychopharmacology Across the Lifespan
Pharmacokinetic principles and application of evidence-based clinical decision-making in relation to Advanced Practice Registered Nurse psychotropic medication prescribing across the lifespan.
Prereq: 7470. or permission of instructor.

7378 Advanced Nursing Practice Adult Clinical Nurse Specialist Clinical Practicum
Application of theories, research findings, skills and interventions, including pharmacologic, for advanced practice in the care of adults with all types of acute and chronic health problems.
Prereq: 7228.01. Not open to students with credit for 859.

7378.01 Adult Gerontology Clinical Nurse Specialist Practicum I
Application of advanced practice nursing theories, research findings, skills and interventions, including pharmacological management to the management of adults and older adults with acute and chronic health problems.
Prereq: 7410, 7450, and 7470.

7378.02 Adult Gerontology Clinical Nurse Specialist Practicum II
Application of advanced practice nursing theories, research findings, skills and interventions, including pharmacological management of adults and older adults with acute and chronic health problems.
Prereq: 7410, 7450, 7470, and 7378.01.

7402 Economic Evaluation of Healthcare Interventions
Introduction to economic evaluation of healthcare interventions and services, including evaluating costs and health outcomes, using results to inform resource allocation, interpretation and evaluation of economic evaluations in the literature, and decision analysis in healthcare.

7403 Innovation Leadership in Advanced Nursing Practice
Analysis of organizational leadership and ethical essentials necessary to deliver high quality patient care in diverse settings.
Prereq: Enrollment in Grad Nursing.

7404 Project Management for Healthcare and Clinical Research
Principles of project management and strategic planning in healthcare, clinical research, and regulatory settings.
Prereq: 7782, or permission of instructor.

7405 Clinical Research Study and Site Management
Fundamental principles of clinical research operations from study site selection to study closure from the perspective of sponsors and clinical research sites including an introduction to database design, management, quality assurance, and reporting for site and sponsor operations.
Prereq: 7770 or Pht 7770, or permission of instructor. Cross-listed in Pht.

7410 Advanced Health Assessment
Development of advanced health assessment skills. Emphasis on acquisition of pertinent assessment data across the life span for advanced nursing care for multiple specialties.
Prereq: 7450, or enrollment in the Master of Respiratory Therapy (MRT) program. Grad Entry students must have successfully completed all pre-licensure coursework (6100, 6240S, 6260, 6270, 6271, 6340, 6410, 6420, 6430, and 6480). Cross-listed in RespirTh.
7450 Pathophysiology of Altered Health States

Analysis of theories and research regarding alterations of health states across the life span with an emphasis on pathophysiological processes.

Prereq: Grad standing in Nursing or permission of instructor. Not open to students with credit for 703 or 704.

7470 Advanced Pharmacology in Nursing

Pharmacokinetic principles and clinical application and principles of the use of drugs and therapeutic devices in the prevention of illness and maintenance of health. Meets criteria for APN's prescribing in Ohio.

Prereq: 7450. Not open to students with credit for 706. Repeatable to a maximum of 12 cr hrs or 3 completions.

7481 Data Management and Informatics in Clinical Research

Introduction to fundamental principles of clinical research data management and informatics to include the acquisition and management of data during clinical research studies, including source data, data entry, data quality assurance, reporting, and security.

Prereq: 7782; or permission of instructor.

7482 Principles of Quality Management for Medical Product Development

Concepts and application of total quality management for federal regulation of medical product development including drugs and medical devices.

Prereq: 7405, Pfr 7405, or permission of instructor.

7483 Quality Improvement and Informatics

Explores advanced concepts of collaboration, design, leadership, implementation and evaluation of quality improvement initiatives in health care utilizing information technology strategies.

Prereq: Enrollment in Grad Nursing.

7484 Informatics

To refine, expand, and extend clinical transformation education to all medical, nursing, and other health professional students.

Prereq: Enrollment in Interprofessional Healthcare certificate program, or permission of instructor. This course is graded S/U. Cross-listed in SocWork.

7491 Health Promotion and Disease Prevention across the Life Span

Analyzes strategies to encourage change in both individual's and population's health behaviors that influence risk reduction in multiple settings. Develop educational strategies utilizing advanced critical thinking.

Prereq: Enrollment in Grad Nursing or Obesity Sciences Graduate Interdisciplinary Specialization.

7495 Community Health Education

Students will be assigned to a community clinic or agency to assist with improving the health of underserved populations in Central Ohio. Small groups of students will develop, implement, and evaluate a community health education program.

Prereq: Grad standing in Nursing, and permission of instructor. Repeatable to a maximum of 4 cr hrs. This course is graded S/U.

7496 Opioid Use Disorder

Evidence-based training in opioid use disorder (OUD) prevention, diagnosis, and treatment, emphasizing Medication-Assisted Treatment (MAT), to interdisciplinary teams of pharmacy, health and rehabilitation sciences, nursing, medicine, and social work students to assure an interprofessional work force prepared to address the opioid epidemic.

Prereq: Enrollment in Interprofessional Healthcare certificate program, or permission of instructor. This course is graded S/U. Cross-listed in SocWork.

7500 Health Policy and Advocacy

Analysis of the U.S. health care delivery system and the policy making process, with an emphasis on the social, political and economic factors affecting the delivery of Nursing services.

Prereq: Grad standing in Nursing, or permission of instructor.

7530 Instructional Strategies in Clinical Teaching

The primary focus of this course is the differentiation of best pedagogical practices for effective teaching in clinical settings.

Prereq: Grad standing and active Registered Nurse (RN) licensure.

7533 Teaching Tech: Classroom Technologies

Explore theory behind selection and use of education technology to engage students in the classroom. Theory will be enhanced with practice and application. Basic understanding of education technology and teaching theory required.

Prereq: Grad standing, or permission of instructor.

7534 Teaching Tech: ePortfolios

The theory behind use and selection of ePortfolio technology will be enhanced with hands-on practice and application of production software.

Prereq: Grad standing, or permission of instructor.

7536 Principles of Instructional Design for Nurses

Theoretical and practical approaches to creation of learning experiences for nursing and health education with an emphasis on backward design and evidence-based instructional design strategies.

Prereq: Grad standing in Nursing; or permission of instructor.

7537 Assessment and Evaluation in Nursing Education

Principles and processes involved in assessment and evaluation of student learning, courses, curricula, program outcomes, and teaching practices.

Prereq: Grad standing in Nursing, or permission of instructor.

7538 Teaching in Nursing

Application of best pedagogical practices in selected Nursing education experiences.

Prereq: 7530, 7536, and 7537; or permission of instructor.

7560 Clinical Trials I: Design and Regulation

This course provides a fundamental overview of clinical trial design, methods, and regulation with an emphasis on medical product development, clinical trial protocols, preclinical research requirements, and the appraisal of published clinical trials.

Prereq: Admission to the MS Pharmacology program, or permission of instructor. Not open to students with credit for 7570 or Pfr 7770. Cross-listed in BioPhrm and Phr.

7561 Clinical Trials II: Site Management and Study Leadership

This course provides a fundamental overview of best practices of clinical trial study and site management, including an emphasis on data, safety, and quality management, and study team leadership.

Prereq: 7560, BioPhrm 7560, or Pfr 7560, or permission of instructor. Not open to students with credit for 5402 or Pfr 5402. Cross-listed in BioPhrm and Phr.

7599 Culminating Project in Clinical Research

The culminating project is an independent scholarly project that allows students to apply skills and competencies acquired across the master's program in clinical research. During the course, students will also complete their professional ePortfolio.

Prereq: Enrollment in the master's program in Applied Clinical and Preclinical Research, or permission of instructor. Cross-listed in Pfr.

7600 Longitudinal Practice

Experiential opportunity to build competencies in communication, physical examination, and clinical reasoning emphasizing active participation in team-based care.

Prereq: Enrollment in Interprofessional Healthcare certificate program, or permission of instructor. This course is graded S/U. Cross-listed in SocWork.

7601 Patients within Populations

Incorporation of patients' concerns, health care provider goals and skills in team based care for patients vulnerable for illnesses and health issues as a result of their ages, social and demographic conditions, culture, and lifestyle choices.

Prereq: Enrollment in Interprofessional Healthcare certificate program, or permission of instructor. This course is graded S/U. Cross-listed in SocWork.

7603 Advanced Management of Relationship-Centered Care

Precepted clinical experiences in advanced ambulatory and chronic care incorporating an interdisciplinary team in nursing and medicine, providing specialized care for the patient with complex chronic care needs.

Prereq: Enrollment in Interprofessional Healthcare certificate program, or permission of instructor. This course is graded S/U.

7604 Hotspotting

Strategic use of data to reallocate resources to a small subset of high-needs, high-cost patients among interdisciplinary teams of pharmacy, health and rehabilitation sciences, nursing, medicine and social work students.

Prereq: Enrollment in Interprofessional Healthcare certificate program, or permission of instructor. This course is graded S/U.

7717 Interdisciplinary Perspective on Developmental Disabilities

Provides an introduction to the psychosocial, medical, and educational implications of developmental disabilities.

Prereq: permission of instructor. Not open to students with credit for 717.01 or 717.03. Cross-listed in EduSt, HthRhSc, Psych, SocWork, and SphHmg.

7718 Interdisciplinary Perspective on Autism Spectrum Disorders

Teaches the analytical skills necessary to comprehend and formulate an interdisciplinary framework relating to major scientific and theoretical perspectives in autism spectrum disorders.

Prereq: permission of instructor. Not open to students with credit for 717.01 or 717.02. Cross-listed in EduSt, HthRhSc, Psych, SocWork, and SphHmg.

7770 Fundamentals of Medical Product Development and Regulation

Function of clinical research in medical product development and the regulatory process of new medical products. Laws and regulations concerning the development, testing, commercialization, and total product life cycle for medical products. Regulations governing the conduct of clinical research, including study sponsors, investigators, and Institutional Review Boards.

Prereq: Admission to the Master's program in Applied Clinical and Preclinical Research, or permission of instructor. Cross-listed in Pfr.
354 Nursing

7779 Evidence Based Practice for Interprofessional Teams G 3
Built around the Evidence-based Practice (EBP) and Interprofessional Education Collaborative (IPEC) competencies, learners will build the knowledge and skills of EBP needed to address relevant issues in healthcare in order to improve quality, safety and outcomes for patients, populations, organizations and the communities in which they exist. Prereq: Enrollment in Interprofessional Healthcare certificate program, or permission of instructor.

7780 Evidence Based Nursing Scholarship G 3
Introduction to and application of evidence-based practice (EBP), Includes EBP steps, competencies, and strategies for mentoring and leading integration and synthesis of the EBP process for improving practice and outcomes. Prereq: Grad standing in Nursing, or permission of instructor.

7781 Responsible Conduct of Research G 3
Concepts and policies for the responsible conduct of research (RCOR), Institutional Review Boards and dissemination of findings. Prereq: Grad standing.

7782 Clinical Research Design and Methods G 3
Study of research design and methods used in clinical research. Measurement issues, bias and confounding, statistical considerations, evaluation of published clinical research designs, and protocol and proposal development. Prereq: Admission to Master's program in Applied Clinical and Preclinical Research, or permission of instructor. Cross-listed in Pnr.

8110 Scholarly Writing for Nurse Scientists G 3
Scholarly manuscript writing for refereed publications for nursing and research scientist audiences. Emphasis on writing style and process, with secondary emphasis on journal selection, author guidelines, peer review, and managing revisions. Prereq: Enrollment in PhD program in Nursing, or permission of instructor.

8193 Individual Studies in Nursing G 1 - 5
Students will gain skills and knowledge within a focused area of study within the area of expertise of a nursing faculty mentor. The course will expose students to novel scholarly activities and provide individualized learning opportunities. Prereq: Enrollment in Nursing program and permission of instructor. Repeatable to a maximum of 20 cr hrs or 4 completions. This course is graded S/U.

8194 Group Studies in Nursing G 0 - 5
Group studies of special problems in nursing. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 20 cr hrs or 4 completions.

8400 Leadership for Nurse Scientists G 3
Examine current professional issues facing the nurse scientist in academia, practice, and research. Prereq: Enrolled in PhD in Nursing program.

8420 Seminar in Life Course Health Development G 1
This seminar provides the foundations for the life course development framework, including a review of the theoretical models, the supporting evidence and critiques. Ethical considerations specific to the framework will be discussed throughout the seminar as well as the Maternal and Child Health Leadership competencies. Prereq: Appointment as T32 Fellow, or permission of instructor. Repeatable to a maximum of 12 hrs. This course is graded S/U.

8440 Philosophy of Science and Development of Nursing Knowledge G 3
Examines historical, philosophical, and theoretical basis for nursing science. Prereq: Enrollment in PhD program in Nursing.

8441 Health Determinant Models for Nursing Science G 3
Integrates scientific approaches used to investigate, understand and improve health status within the context of Nursing Science. Prereq: 8440, or permission of instructor.

8460 Integrative Reviews in Nursing G 3
Foundation for conducting a systematic integrative review of nursing and health related research and dissemination of scientific writing. Prereq: 8783.

8462 Grant Writing for Nursing G 3
Introduction to the principles and fundamentals of writing and critiquing research grant proposals in nursing science. Prereq: 8440, 8460, and 8783.

8510 Ethics in Healthcare Practice, Research and Policy G 2
Study of the central ethical dilemmas facing Nursing in health care practice, research, and policy. Prereq: Grad standing in Nursing or permission of instructor. Not open to students with credit for 755.

8780 Research Methods I G 3
Survey of quantitative design and measurement approaches relevant to nursing and health. Emphasis is placed on experimental designs and measurement in nursing and health research. Prereq: Enrollment in PhD program in Nursing, or permission of instructor. Not open to students with credit for 902.01 or 912.

8783 Quantitative Design for Nursing Research G 3
Quantitative designs relevant to research in nursing and health. Emphasis is placed on experimental and quasi-experimental designs in nursing and health-related research. Prereq: Enrollment in PhD in Nursing program.

8784 Quantitative Design for Nursing Research G 3
Survey of qualitative and mixed methods approaches relevant to nursing and health. Emphasis is placed on observational research designs in nursing and health research. Prereq: Enrolled in PhD in Nursing program.

8785 Measurement for Nursing and Health G 3
Measurement theories and principles relevant to nursing science. Emphasis is on psychobiobehavioral measurement in nursing and health-related research. Prereq: 8440 and 8783.

8786 Advanced Design for Nursing G 3
Advanced quantitative designs relevant to evaluating causal relationships in nursing and health science disciplines. Emphasis is on multi-level, experimental and quasi-experimental designs appropriate to individual and population health research. Prereq: 8783, 8784, and 8785.

8890 Professional Issues in Nursing G ½ - 2
Examine professional issues facing the nurse scientist in academia, practice, and research. Prereq: Enrollment in PhD program in Nursing; successful completion of the PhD Candidacy Examination. Repeatable to a maximum of 8 hrs or 10 completions. This course is graded S/U.

8891.01 Genetics and Genomics for Nursing Science G 3
Examine emerging topics in genomics in the improvement of human health and quality of life in individuals, families, and communities from a nursing science perspective. Prereq: 8440, 8441, and 8783.

8891.02 Secondary Analysis of Complex Survey Data for Nursing and Health Research G 3
Develop and conduct a secondary data analysis of data from a nursing science perspective. Emphasis on design and methods with an understanding of data management and various analytic tools. Prereq: Course in multiple regression.

8893.03 Critical and Sensitive Periods for Health Development G 3
Focus on the effects of social, psychological, biological, and behavioral factors that influence health status (health determinants) as they occur across the lifespan with a particular focus on critical and sensitive periods of health development. Examination of health outcomes under varying conditions and across populations. Prereq: 8441.

8890 Research Residency G 1 - 10
Doctoral research training through participation in on-going research of graduate faculty. Prereq: 8440, 8441, 8460, 8783, and 8784. Repeatable to a maximum of 20 hrs or 4 completions. This course is progress graded (S/U).

8899 Dissertation G 1 - 6
Dissertation research involving the generation of new knowledge that will contribute to nursing science. Develop skills needed for transition to a scientific career. Prereq: Successful completion of PhD in Nursing Candidacy Examination. Repeatable to a maximum of 90 hrs or 15 completions. This course is graded S/U.

Nursing Advancement

2193 Individual Studies in Nursing Advancement U 1 - 4
Student will gain knowledge and skills within the area of expertise of a nursing faculty mentor. The course will provide individualized learning opportunities. Prereq: Enrollment in the RN-BSN program. Repeatable to a maximum of 20 hrs or 5 completions.

2440 Foundations and Contemporary Issues for Registered Nurses U 3
Provides the framework for exploration of professional issues in contemporary nursing and health care for nurses pursing a baccalaureate degree. Prereq: Enrollment in the RN to BSN program. Not open to students with credit for Nursing 302.

2780 Research for Evidence Based Nursing Practice U 3
An introduction to evidence based nursing practice and the research process. Prereq: Enrollment in the RN to BSN program. Not open to students with credit for 390.

3110 Health Assessment Across the Lifespan U 3
Development of health assessment across the lifespan. Prereq: Enrollment in the RN-BSN program, or permission of instructor.

3111 Palliative and End of Life Care U 3
Foundation for palliative care through exploration of individual, family, and loved ones’ needs at the end of life. Prereq: Enrollment in the RN-BSN program, or permission of instructor.
This course will explore the impact of failure to rescue on patient outcomes and provide evidence-based strategies and skills to prevent failure to rescue in healthcare.

Prereq: Enrollment in the RN-BSN program, or permission of instructor.

The course will address the opiate use disorder in primary care.

Prereq: Enrollment in Primary Care Workforce Development Certificate (Category 1b), or Registered Nurses (RN) in Primary Care Workforce Development Certificate (Category 4); or permission of instructor.

This course will address the care coordination and transitions in care when caring for patients. Emphasis will be placed on the needs of patients with chronic diseases to include mental health and substance use conditions with a focus on population outcomes.

Prereq: Enrollment in Primary Care Workforce Development Certificate (Category 1b), or Registered Nurses (RN) in Primary Care Workforce Development Certificate (Category 4); or permission of instructor.

Application of RN primary care delivery and design for population health initiatives.

Prereq: Enrollment in Primary Care Workforce Development Certificate (Category 1b), or Registered Nurses (RN) in Primary Care Workforce Development Certificate (Category 4); or permission of instructor.

Introduction to evidence-based coaching approaches for lifestyle behavior change as integrated within interprofessional practice.

Prereq: Enrollment in Primary Care Workforce Development Certificate (Category 1b), or Registered Nurses (RN) in Primary Care Workforce Development Certificate (Category 4); or permission of instructor.

This course will provide practicum experiences for Registered Nurse (RN) primary care delivery and design for population health initiatives.

Prereq: Enrollment in the Category 1 Registered Nurses in Primary Care Workforce Development Certificate program, or permission of instructor. This course is graded SU.

Introduction to the concepts and techniques for the provision of culturally competent care within the U.S. and across global contexts.

Prereq: Enrollment in the RN to BSN program. Not open to students with credit for 440.

Study of community health nursing theory and principles applied to the nursing care of individuals, families, groups, communities, and populations.

Prereq: 2440, 4780, and Sociol 1101; or permission of instructor.

Exploration of leadership and management concepts as applied to nursing practice and the health care environment.

Prereq: 4240, 4780, or permission of instructor. Not open to students with credit for Nursing 510.

Exploration and application of leadership and management concepts as applied to nursing practice and the health care environment.

Prereq: 2440 and 4240 and 4780, and enrollment in the RN-to-BSN program.

Examination of informatics in health care emphasizing clinical information systems and the use of the information technology (IT) applications to support nursing practice.

Prereq: Enrollment in the RN to BSN program. Not open to students with credit for Nursing 507.

Examination of principles, competencies, and practices that support interprofessional collaboration, a culture of safety, and improve patient outcomes.

Prereq: Enrollment in the RN-BSN program.

Examination of principles, competencies, practices, and skills that support implementation and sustainability of evidence-based practice in order to improve quality, safety and improve outcomes for patients, populations, providers, organizations, and communities across the globe.

Prereq: Enrollment in RN to BSN program, or permission of instructor.

Advanced individual studies in selected areas for the DNP student.

Prereq: Admission to the DNP program, or permission of instructor. Repeatable to a maximum of 6 cr or 2 completions. This course is graded SU.

Examination of leadership development to maximize innovation and positive organizational impact with an exploration of own leadership development.

Prereq: Enrollment in DNP program, or permission of instructor.

Analysis of the role of the DNP nurse executive within complex healthcare systems.

Prereq: 8403.

Advanced concepts in collaboration, design, and leadership as they relate to the Prereq: Enrollment in DNP program, or permission of instructor.

Critical analysis of population-based factors that impact personal health and care including the social determinants of health contributing to health disparities, their synthesis with health behavior theories, and the evidence-based strategies to change behavior and improve outcomes.

Prereq: Enrollment in the DNP program, or permission of instructor. Not open to students with credit for NursPro 913.

Principles of policy-making at the institutional, local, state, and federal levels to influence policy change affecting health care.

Prereq: Enrollment in the DNP program, or permission of instructor. Not open to students with credit for NursPro 940.03.

Analysis of complex culture in health care and the impact on organizational structure, relationships, evaluation, and outcomes.

Prereq: 8402, and enrollment in DNP program; or permission of instructor.

Health informatics, the evaluation of electronic health information resources and patient care technology, and application in DNP practice. Related policy, ethical, privacy, and disparity concerns related to access and use of healthcare data.

Prereq: Enrollment in DNP program, or permission of instructor.

Theoretical underpinnings of nursing knowledge and critical appraisal of clinical relevant research related to clinical effectiveness and translational science concepts.

Prereq: Admission to the DNP program, or permission of instructor. Not open to students with credit for NursPro 951 or 953.

Theoretical concepts and principles of practice scholarship methods and measurement for doctoral level nursing practice.

Prereq: Enrollment in DNP program, or permission of instructor.

To distinguish the principles of evidence-based practice (EBP) integral to the DNP role. The focus is on identifying and understanding when to utilize evidence-based processes and implementation, dissemination, and sustainability strategies to improve practice and policy influencing healthcare outcomes.

Prereq: Enrollment in the DNP program, or permission of instructor.

Application of EBP principles and the change process to implement, facilitate, evaluate, and sustain evidence-based-practice changes to improve healthcare.

Prereq: 8781 and 8782.

Internalization of the roles and responsibilities of the DNP in EBP through dissemination of evidence.

Prereq: 8783.

Development of scholarly writing and peer review skills in scholarly nursing practice.

Prereq: Enrollment in DNP program, or permission of instructor.
### Occupational Therapy

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>6110</td>
<td>Occupational Therapy Foundations &amp; Theory</td>
<td>2</td>
<td>Students gain understanding of the scope and domain of the profession.</td>
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<td></td>
<td>Learn basic models of occupational performance and demonstrate professional</td>
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<td>behaviors. The course focuses on developing the student's understanding of OT,</td>
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<td>professional practice framework and professional behaviors.</td>
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<td>Prereq: Enrollment in the Doctorate of Occupational Therapy program.</td>
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<tr>
<td>6120</td>
<td>Occupation in Life and Community</td>
<td>2</td>
<td>Students will gain an understanding of human beings as occupationally oriented</td>
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<td>as described in Occupational Science. Everyday occupations and examples of</td>
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<td>adapted occupations when a person has disability are discussed. Students will</td>
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<td></td>
<td>also gain a beginning understanding of the effects of disease and disability on</td>
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<td>human occupation. Prereq: Enrollment in the Doctorate in Occupational Therapy</td>
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<td>program.</td>
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<tr>
<td>6130</td>
<td>Occupational Therapy Therapeutic Use of Self</td>
<td>2</td>
<td>Students learn the scope of the Occupational Therapy profession, therapeutic</td>
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<td>and Groups Lecture</td>
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<td>interaction, professional behaviors, and group process. Prereq: Enrollment</td>
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<td>in the Doctorate in Occupational Therapy Program.</td>
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<tr>
<td>6131</td>
<td>Therapeutic Use of Self and Groups Lab</td>
<td>1</td>
<td>Students will engage in self- and peer-assessment, high level discussion,</td>
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<td>hands on practice of therapeutic communication, administration of occupational</td>
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<td>assessments, occupational profile training, and standardized patient lab.</td>
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<td></td>
<td>Additionally, students will plan, design, and implement group activities at</td>
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<td>community sites. Prereq: Enrollment in the Doctorate in Occupational Therapy</td>
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<td>Program.</td>
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<tr>
<td>6140</td>
<td>Task Analysis &amp; Foundational Skills</td>
<td>3</td>
<td>This course is designed to provide the student with the knowledge and skills</td>
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<td>required in the analysis of occupation and occupational tasks. The course also</td>
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<td>provides a foundation for core clinical skills in the healthcare environment.</td>
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<td>Prereq: Grad standing in OccTher (OTD).</td>
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<tr>
<td>6150</td>
<td>Neuroscience for Occupational Therapy</td>
<td>2</td>
<td>Covers the fundamentals of neuroanatomy and neurophysiology to enable students</td>
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<td>to interpret, evaluate and treat clients with neurological impairments. Students</td>
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<td>demonstrate competence in the integration of neuroscience principles. Prereq:</td>
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<td>Enrollment in the Doctorate in Occupational Therapy program.</td>
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<tr>
<td>6160</td>
<td>Assessing Occupation: Fundamentals of</td>
<td>1</td>
<td>This course will provide students with an introduction to the standard</td>
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<td></td>
<td>Biomechanics</td>
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<td>assessments of function of the human skeletal and neuro-muscular systems.</td>
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<td>Students will learn how to select appropriate assessments and plan exercise</td>
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<td>interventions to promote occupational functioning and will develop the technical</td>
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<td>skill of evaluation for those conditions in persons with impairment or disability.</td>
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<td>Prereq: Enrollment in the Doctorate in Occupational Therapy Program.</td>
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<tr>
<td>6189</td>
<td>Level I Fieldwork in Mental Health</td>
<td>1</td>
<td>Students spend 40 hours of time at mental health sites throughout the</td>
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<td>continuum of care. This course utilizes observation skills, assessment, and</td>
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<td>development of OT intervention plans for people with emotional, cognitive, and/or</td>
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<td>behavioral issues. Prereq: Enrollment in the Doctorate of Occupational Therapy</td>
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<tr>
<td>6210</td>
<td>Occupational Therapy Intervention and</td>
<td>3</td>
<td>Students learn methods of occupational therapy assessment of and intervention</td>
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<td></td>
<td>Assessment for Physical Rehabilitation</td>
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<td>to improve neuromusculoskeletal and sensory function in persons with impairment</td>
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<td></td>
<td>or disability. This class is for enrolled Occupational Therapy Students and is</td>
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<td></td>
<td>taught in a developmental course sequence as each course builds on content</td>
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<td>knowledge learned in previous occupational therapy courses. Prereq: Enrollment</td>
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<td></td>
<td>in the Doctorate in Occupational Therapy program.</td>
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<tr>
<td>6211</td>
<td>Occupational Therapy Intervention and</td>
<td>2</td>
<td>Students learn methods of occupational therapy assessment of and intervention</td>
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<td></td>
<td>Assessment for Physical Rehabilitation Lab</td>
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<td>to improve impairments in persons with physical disabilities. Application of</td>
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<td>these skills is completed in an interactive experiential environment individually,</td>
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<td>in groups, and in practical lab examinations. Prereq: Enrollment in the</td>
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<td>Doctorate in Occupational Therapy Program.</td>
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<td>6220</td>
<td>Mental and Cognitive Functions</td>
<td>3</td>
<td>This course introduces students to the etiology, epidemiology, signs/symptoms,</td>
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<td>associated health conditions, prognosis, and medical management of individuals</td>
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<td>with mental and cognitive impairment. This class is for enrolled Occupational</td>
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<td>Therapy Students and is taught in a developmental course sequence as each</td>
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<td></td>
<td>course builds on content knowledge learned in previous occupational therapy</td>
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<td>courses. Prereq: Enrollment in the Doctorate in Occupational Therapy program.</td>
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<tr>
<td>6221</td>
<td>Mental and Cognitive Functions Lab</td>
<td>1</td>
<td>This course focuses on the evaluation and treatment of individuals with mental</td>
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<td>and cognitive impairment. This class is for enrolled Occupational Therapy</td>
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<td>Students and is taught in a developmental course sequence as each course builds</td>
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<td>on content knowledge learned in previous occupational therapy courses.</td>
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<td>Prereq: Enrollment in the Doctorate in Occupational Therapy Program.</td>
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<tr>
<td>6230</td>
<td>Orthopedics in Occupational Therapy</td>
<td>4</td>
<td>Students will use their knowledge of anatomy, kinesiology, client factors, and</td>
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<td>medical conditions to better analyze the occupations and performance skills of</td>
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<td>adults with orthopedic and musculoskeletal conditions. Prereq: Enrollment in</td>
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<td>the Doctorate of Occupational Therapy program.</td>
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<tr>
<td>6251</td>
<td>Advanced Topics: Physical Agent Modalities</td>
<td>1</td>
<td>Students learn to apply physical agent modalities in occupational therapy</td>
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<td>practice. This class is for enrolled Occupational Therapy Students and is</td>
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<td>taught in a developmental course sequence as each course builds on content</td>
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<td>knowledge learned in previous occupational therapy courses. Prereq: Enrollment</td>
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<td>in the Doctorate in Occupational Therapy Program, or permission of instructor.</td>
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<tr>
<td>6289</td>
<td>Level One Physical Function Fieldwork</td>
<td>1</td>
<td>In this course, students will gain an understanding of practice in a physical</td>
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<td>function setting. This course will utilize observation skills, assessment, and</td>
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<td>development of occupational therapy intervention plans for people with</td>
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<td>physical impairments. Prereq: Enrollment in the Doctorate in Occupational</td>
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<td>Therapy Program. This course is graded S/U.</td>
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<tr>
<td>6389</td>
<td>Level One Pediatric Fieldwork</td>
<td>1</td>
<td>In this course, students will gain an understanding of school system practice.</td>
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<td>Students will learn specific skills in observing and evaluating students who</td>
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<td>receive occupational therapy services. Students will participate in planning</td>
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<td>intervention activities within the school setting. Prereq: Enrollment in the</td>
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<td>Doctorate in Occupational Therapy program. This course is graded S/U.</td>
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<tr>
<td>6510S</td>
<td>Service Learning in OT</td>
<td>1</td>
<td>This course exposes students to the emerging practice areas of community health</td>
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<td>services, inter-generational interventions, and inter-professional relationships</td>
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<td>in a service learning setting. Prereq: Enrollment in the Doctorate in</td>
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<td>Occupational Therapy Program. This course is graded S/U.</td>
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<tr>
<td>6730</td>
<td>Research Methods</td>
<td>2</td>
<td>Students analyze research reports, develop research questions, identify research</td>
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<td>methods and designs, collect, analyze and interpret data related to</td>
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<td>occupational therapy. Prereq: Enrollment in the Doctorate in Occupational</td>
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<td>Therapy program.</td>
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</tbody>
</table>
Occupational Therapy 357

7420 Management in Occupational Therapy  G  3
Prepares students to become managers, leaders, and advocates. Emphasizes leadership theories, management skills, human resources issues, strategic planning.
Prereq: Enrollment in the Doctorate in Occupational Therapy program.

7430 Supervision and Consultation  G  2
Prepares students to provide consultation and supervision in OT Practice. Consultation theories, models and processes are discussed. Supervision theories and principles are discussed and applied to field.
Prereq: Enrollment in the Doctorate in Occupational Therapy program.

7440 Fieldwork Preparation I  G  1
Covers the theoretical basis for Occupational Therapy fieldwork education and provides students with practical information to enhance their fieldwork experience. Supervision theories and principles are reviewed and applied to Occupational Therapy fieldwork education.
Prereq: Enrollment in the Doctorate in Occupational Therapy program.

7447 Occupational Therapy Fieldwork Preparation II  G  2
This course occurs concurrently with two Level One courses (6289, 6389) and will focus on application of learning experiences to preparation for Level Two fieldwork. Social, political, and legal systems that affect each setting are considered and applied through practical opportunities.

7610 Occupational Therapy Practice Specialization  G  1-3
Prepares students to practice in a specialty area of occupational therapy.
Prereq: Must be MOT Student. Not open to students with credit for 793 or AlliMed 885.01. This course is graded S/U.

7620 Occupational Therapy Research Specialization  G  1-3
Students participate in research projects, including literature review, measurement; data collection, data analysis and interpretation, and writing research reports. Students report their activities and findings in public venues.
Prereq: Must be MOT Student. Not open to students with credit for AlliMed 885.01. This course is graded S/U.

7710 Capstone Preparation  G  1
Students are assigned to advisors who mentor them in their capstone projects. Students complete a review of the literature in a self-identified area of interest. Based on the identification of programmatic or research gaps, they will create their objectives for their capstone, their advisor, and a site for implementation of the experiences.
Prereq: 6730, 6740, HtRhSc 7900, and 7910. This course is graded S/U.

7720 Capstone Proposal  G  2
With individual advisors, the students develop a capstone project proposal. Based on extensive review of the literature, proposals include a rationale, method and evaluation for 1) a new occupational therapy program, 2) an EPB clinical guideline.
Prereq: Must be enrolled as an OTD student. This course is graded S/U.

7730 Capstone Completion  G  2
The students interpret their data and write their findings for the capstone project. Students submit the final document and orally defend it.
Prereq: Grad standing in OttTher (OTD). This course is graded S/U.

7770 Advance Topics in Assistive Technology  G  2
Students learn how to develop and implement assistive technology (AT) devices, services, strategies and practices. The course covers computer access/technology, alternative and augmentative communication, electronic cognitive devices, driver's rehabilitation, low vision technologies, wheelchairs, electronic activities of daily living, zero-effort technologies, and emerging technologies.
Prereq: HtRhSc 5200 or OccTher 7411 or equiv., and Grad standing; or permission of instructor.

7780 Advanced Neurorehabilitation Practice  G  2
Teaches the principles, evidence, practice, and documentation of clinical practice in adults with neurologic impairments, as well as analysis of how occupational therapy skills and scope of practice are applied to this population.
Prereq: Grad standing in OttTher (OTD).

7790 Advanced Topics in Orthopedic Occupational Therapy  G  2
Occupational therapy students will apply foundational and advanced knowledge and techniques to real clients and simulated client populations with musculoskeletal disorders.
Prereq: Enrollment in the Doctorate of Occupational Therapy program.

Ohio State Biochemistry Program

7193 Individual Studies - Laboratory Rotation  G  1-12
A qualified graduate student may conduct a minor laboratory research investigation in biochemistry under the direction of program faculty members
Prereq: Enrollment in the OSBP. Repeatable to a maximum of 12 cr hrs or 12 completions. This course is graded S/U.
7600 First-Year Student Orientation  G  1
Orientation for first-year students in OSBP and partner graduate programs; lectures on topics important for successful graduate experience; training in presenting scientific work; training in research ethics.
Prereq: Not open to students with credit for 7600 (760). MCDBio 7600, MolGen 7600, Biophys 7600; or Microbio 7600. This course is graded S/U. Cross-listed in MCDBio, MolGen, Biophys, and Microbio.

7700 Interdisciplinary Student Seminar  G  1
Interdisciplinary seminar in Advanced Biochemistry. Repeatable to a maximum of 10 cr hrs.

7700.01 Interdisciplinary Student Seminar  G  1
Interdisciplinary seminar in Advanced Biochemistry. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

7890 Colloquium - Advanced Biochemistry Topics  G  1
Seminars presented by Ohio State faculty and by faculty and professionals from outside the University.
Prereq: Enrollment in the OSBP. Repeatable to a maximum of 14 cr hrs. This course is graded S/U.

5600 Eyes on Community Health  U G O  2
Investigate factors that impact healthcare utilization. Community engagement opportunities include glaucoma screenings and improvisational health coaching for patients dealing with chronic health issues.

6180 Basic and Ocular Pharmacology  G O  4
An introduction to the mechanism of action and side effects of pharmacologic agents.
Prereq: 2nd yr standing in Optom. Not open to students with credit for 680 or 681.

6190 Introduction to Clinical Diagnostic Reasoning in Optometry  O  1½
Using a problem-based learning format, ocular cases will be utilized to develop diagnostic reasoning skills emphasizing basic science and systemic disease.
Prereq: 1st yr standing in Optom.

6200 Introduction to Optometric Business  O  2
Introduction to the business aspects of the profession of optometry to help students understand and prepare for their future as an optometrist from a business and financial perspective.

6220 Billing and Coding  O  2
This course introduces students to the billing & coding aspects of the profession of optometry. This knowledge is critical to the successful practice of optometry, regardless of career path. This course is designed to help the students understand and better prepare for their future as an optometrist from a billing and coding perspective.
Prereq: 2nd yr standing in Optom.

6240 Third-Party Payment Plans  O  1
Issues related to joining a third-party payment plan; integrating managed care into the optometric office; evaluation of managed care contracts.
Prereq: 3rd yr standing in Optom.

6400 Optometric Examination  O  5
The underlying concepts and interrelationships of optometric tests to permit the development of diagnosis and treatment plans for a specified series of optometric problems.
Prereq: 2nd yr standing in Optom.

6410.01 Introduction to Primary Care Testing I  O  2
Through lecture and direct patient care, students will learn technical skills for parts of the optometric examination. Interpretation of tests will be covered superficially. Professionalism and interpersonal skills will be emphasized.
Prereq: 1st yr standing in Optom. This course is graded S/U.

6410.02 Introduction to Primary Care Testing II  O  2
Through direct patient care experiences, students will learn technical skills for parts of the optometric examination. Interpretation of tests will be covered superficially. Professionalism and interpersonal skills will be emphasized.
Prereq: 6410.01, and 1st yr standing in Optom. This course is graded S/U.

6420 Diagnosis and Management of Common Vision Conditions  O  2
This course focuses on evaluation and treatment for accommodative,vergence, ocularmotor, visual perceptual and refractive disorders. Classroom emphasis is on clinical analysis of data, diagnosis, and development of appropriate treatment plans. Laboratory sessions expand into treatment through vision therapy techniques.
Prereq: 2nd yr standing in Optom.

6440.01 Introduction to Primary Care Practice  O  1 - 4
Introduction to clinical experience in examining the visual system and carrying out corrective procedures.
Prereq: 2nd yr standing in Optom. Repeatable to a maximum of 30 cr hrs.

6440.02 Ophthalmic Dispensing  O  1 - 6
Clinical experience in ophthalmic design and dispensing; education and experience in dispensary management.
Prereq: 2nd yr standing in Optom. Repeatable to a maximum of 30 cr hrs or 8 completions.

6450.01 Primary Care Practice  O  1 - 6
Clinical experience in examining the visual system and carrying out corrective procedures.
Prereq: 3rd yr standing in Optom. Repeatable to a maximum of 30 cr hrs or 8 completions.

6450.02 Advanced Ophthalmic Dispensing  O  1 - 6
Ophthalmic Dispensing: Advanced clinical experience in ophthalmic design, dispensing, and dispensary management.
Prereq: 3rd yr standing in Optom. Repeatable to a maximum of 30 cr hrs or 8 completions.

6450.03 Introduction to Contact Lenses  O  1 - 6
Clinical experience in specialized phases of optometric practice: contact lenses.
Prereq: 3rd yr standing in Optom. Repeatable to a maximum of 30 cr hrs or 8 completions. This course is graded S/U.

6450.04 Ocular Disease Practice  O  1 - 6
Clinical experience in specialized phases of optometric practice: diagnosis and treatment of ocular disease.
Prereq: 3rd yr standing in Optom. Repeatable to a maximum of 30 cr hrs or 8 completions.

6450.05 Vision Screening  O  1 - 6
Clinical experience in specialized phases of optometric practice: binocular vision and pediatrics.
Prereq: 3rd yr standing in Optom. Repeatable to a maximum of 30 cr hrs or 8 completions.

6450.06 Vision Therapy  O  1 - 6
Clinical experience in orthoptics and vision therapy. Repeatable to a maximum of 30 cr hrs or 8 completions.

6450.07 Community Outreach  O  1 - 12
Clinical experience in specialized phases of eyecare: community outreach.
Prereq: 3rd yr standing in Optom. Repeatable to a maximum of 30 cr hrs or 8 completions.

6550 Ophthalmic Optics  O  5
Optics of single-vision and multifocal lenses; measurement and fitting of spectacles; lens materials, design and manufacturing: aberrations; prism and centration; managing anisometropic; tints and coatings.
Prereq: 2nd yr standing in Optom.

6610 Epidemiology, Public Health and Environmental Vision  O  3
This course will explore epidemiological theories as they related to public health. Community aspects of providing vision care, environmental influences on visual performance, and protection from diseases/hazards to the eye and visual system will also be covered.

6620 Practice of Optometry  O  1
Professionalism, clinical decision making, SOAP format, medical records, patient rights, HIPAA, clinical ethics in optometry, diversity and cultural competency.
Prereq: 1st yr standing in Optom.

6760 Ocular Care Techniques  O  2
Introduction to clinical techniques used in the assessment of ocular health and in the diagnosis and management of ocular disease.
Prereq: 2nd yr standing in Optom.

6770 Advanced Ocular Care Techniques  O  2
Investigation of advanced clinical techniques used in the assessment of ocular health and in the diagnosis and management of ocular disease.
Prereq: 2nd yr standing in Optom.

7140 Systemic Disease for Optometry  O  3
Systemic and ocular manifestations of cardiovascular disease, diabetes, hematology, inflammatory disorders, thyroid disorders, neurological disorders, immunology, infectious disorders, macular degeneration management, laboratory blood work.
Prereq: 3rd yr standing in Optom.

7160 Injections, Lasers and Advanced Ocular Techniques  O  2
Practical experience in injections, ophthalmic lasers and advanced ocular techniques.
Prereq: 3rd yr standing in Optom.

7190 Intermediate Clinical Diagnostic Reasoning in Optometry  O  1½
Using a problem-based learning format, ocular cases will be utilized to further develop clinical diagnostic and management skills requiring basic and clinical science integration.
Prereq: 3rd yr standing in Optom.

7210 Ophthalmic Business Management I  O  3
A deeper dive into the business aspects of the profession of optometry covering practice metrics, human resources, optical management, organizational structure, marketing, business relationships, business plans, financial accounting, entrepreneurship, your professional team, and more.
This course dives deeper into the business aspects of the profession of optometry. This knowledge is critical to the successful practice of optometry, regardless of career path. This course is designed to help the students understand and better prepare for their future as an optometrist from a business and financial perspective.

PreReq: 3rd yr standing in Optom.

4000 Optometry Business Management II O 2

Examination of pediatric patients, including special examination procedures, development of refractive error, prescribing, ocular health, and child abuse.

PreReq: 3rd yr standing in Optom.

7420 Vision of Children O 2

Classification, epidemiology, diagnosis, and management of nonstrabismic and strabismic binocular vision disorders, accommodative anomalies, amblyopia, ocularmotor deficiencies, and visual perceptual lags.

PreReq: 3rd yr standing in Optom.

7440 Clinical Binocular Vision O 5

Optics, design, materials, and measurement of contact lenses, theory, fitting and prescribing of sphericals and torics, post-fitting care, contact lens solutions.

PreReq: 3rd yr standing in Optom.

7500 Contact Lenses O 2

Clinical experience in specialized phases of ophthalmic design, dispensing, and dispensary management.

PreReq: 4th yr standing in Optom. Repeatable to a maximum of 30 cr hrs or 8 completions.

7450.02 Ophthalmic Dispensing O 1 - 10

Clinical experience in specialized phases of ophthalmic practice: contact lenses and primary care.

PreReq: 4th yr standing in Optom. Repeatable to a maximum of 30 cr hrs or 8 completions.

7450.03 Contact Lenses and Primary Care O 1 - 10

Clinical experience in specialized phases of ophthalmic practice: vision rehabilitation.

PreReq: 4th yr standing in Optom. Repeatable to a maximum of 30 cr hrs or 8 completions.

7450.06 Vision Rehabilitation O 1 - 10

Clinical experience in specialized phases of optometric practice: ocular disease.

PreReq: 4th yr standing in Optom. Repeatable to a maximum of 30 cr hrs or 8 completions.

7450.11 Ocular Disease Externship O 1 - 15

Clinical experience in specialized phases of ophthalmic practice: practice-based care.

PreReq: 4th yr standing in Optom. Repeatable to a maximum of 30 cr hrs or 8 completions.

7450.12 Practice-based Care O 1 - 12

Clinical experience in specialized phases of optometric practice: advanced clinical care.

PreReq: 4th yr standing in Optom. Repeatable to a maximum of 30 cr hrs or 8 completions.

7450.13 Advanced Care Externship O 1 - 15

Assessment and management of mild to moderate visual impairment, especially related to reading and driving, with special emphasis on the needs of older adults.

PreReq: 3rd yr standing in Optom.

7500 Contact Lenses O 2

Measurement, verification, and fitting of rigid gas permeable and soft spherical contact lens designs.

PreReq: VisSci 6500 (501 and 503) or 6520 (511), and 3rd yr standing in Optometry; or permission of instructor. Concur: 7500.

7510 Contact Lens Lab O 2

Theory, fitting, and prescribing of specialty contact lens designs including but not limited to torics, multifocals, corneal reshaping, and scleral designs.

PreReq: Optom 7500 (Optometry 433 and 653), and 3rd yr standing in Optometry program; or permission of instructor. Concur: 7520.

7530 Advanced Contact Lens Lab O 1

Abnormalities of the posterior segment of the eye with emphasis on identification, diagnosis and general management.

PreReq: 2nd yr standing in Optom.

7710 Anterior Segment Ocular Disease O 4

Abnormalities of the posterior segment with emphasis on vitreoretinal disease, vascular disease, and macular disease.

PreReq: 2nd yr standing in Optom.

7720 Posterior Segment Ocular Disease O 3

Glaucoma diagnosis and management including epidemiology, pathophysiology, differential diagnosis, risk assessment, testing strategy and interpretation, medical and surgical management.

PreReq: 3rd yr standing in Optom.

7730 Ocular Neurology O 3

Gross anatomy and physiology of the vocal mechanism. Offered for graduate students in the Singing Health Specialization (SHS) curriculum. Provides students with an opportunity to observe the clinical management of voice disorders including the assessment, treatment, and management.

PreReq: Permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

8803 Observations in Clinical Voice Pathology G 2

Advanced management, pre and post-operative management and surgical procedures for ocular disease.

PreReq: 3rd yr standing in Optom.

7790 Surgery and Comanagement of Ocular Disease O 2

Advanced anatomy and physiology of the vocal mechanism. Offered for graduate students in the Singing Health Specialization (SHS) curriculum.

PreReq: Permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

8809 Issues in Laryngology for the Vocal Health Professional G 2

S/U. Repeatable to a maximum of 40 cr hrs or 20 completions.

8804 Observations in Surgical Laryngology G 2

Medical and surgical management of ocular disease.

PreReq: 3rd yr standing in Optom.

7800 Special Topics in Optometry O ½ - 8

This course provides observation experience in a voice disorders clinic with licensed speech language pathologists and is required for the singing health specialization.

PreReq: Enrollment in Optom, and permission of instructor or department. Repeatable to a maximum of 40 cr hrs or 20 completions.

8803 Observations in Clinical Voice Pathology G 2
6640  Fundamentals of Oncology  G 4
Oriented towards graduate students in cancer-related programs and consists of a series of lectures covering a variety of aspects of experimental oncology.
Prereq: Permission of instructor. Cross-listed in VetBioc.

7194  Group Studies in Pathology  G 1 - 4
Group studies of modern topics in mechanisms of disease. Recommended strong background in biological sciences.
Prereq: Permission of instructor. Open to students with credit for 794.

7550  Introduction to Autopsy  G 1
Students receive an overview of medical (non forensic) autopsy performance and its role in clinical medicine through hands-on exposure to normal and diseased tissues and organs. Recommended prereq: Basic knowledge of anatomy and pathophysiology.
This course is graded S/U.

7793.01  Pathologic Anatomy  G M 3 - 9
Students work with an attending pathologist, pathology resident and deiner in prosecting cases while they learn the technical operations of the autopsy service.
Prereq: Grad standing, or Med III and IV standing. Concur: An additional 3 hour professional course (when registration is for 3 professional credit hours). Repeatable to a maximum of 18 cr hrs or 2 completions. This course is graded S/U.

7847  Cellular Mechanisms and Pathogenesis of Inflammation  G 2
Inflammatory processes in the human host due to interaction with viruses, bacteria, parasites, foreign antigens, or physical trauma and new immunological therapeutic strategies being developed.
Prereq: MVImg 701 or Microbl 701, or permission of instructor. Not open to students with credit for MVImg 847.

7999  Thesis Research in Pathology  G 2 - 10
Research in contemporary topic in mechanisms of disease leading to a Master's thesis. Prereq: Enrollment in Master of Science program in Pathology. Repeatable to a maximum of 30 cr hrs or 10 completions. This course is graded S/U.

8850  Seminars in Pathology  G 1
Faculty seminars in immunopathology. Repeatable to a maximum of 14 or hrs. This course is graded S/U.

8999  Research in Pathology - Independent Study  G 1 - 12
Students will perform laboratory research under the supervision of a faculty member. Course can be used to satisfy requirements for a doctoral dissertation.
Prereq: Permission of instructor. This course is graded S/U.

PEDIATRICS

4998  Undergraduate Research in Pediatrics  U 1 - 3
Undergraduate Research Experience in Pediatrics. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs or 8 completions. This course is graded S/U.

8999  Doctoral Thesis Research in Pediatrics  G 1 - 13
Doctoral Thesis Research in Pediatrics. Prereq: Permission of instructor. Repeatable to a maximum of 12 completions. This course is graded S/U. Admis Cond course.

PERSIAN

1101  Elementary Persian I  U 4
Introduction to Persian; development of listening, reading, speaking, and writing skills. Closed to native speakers of this language.
This course is available for EM credit. GE for lang course.

1102  Elementary Persian II  U 4
Further development of listening, writing, speaking, and reading skills; reading of simplified Persian texts. Closed to native speakers of this language.
Prereq: 1101. This course is available for EM credit. GE for lang course.

1103  Intermediate Persian I  U 4
Further development of listening, writing, speaking, and reading skills; reading of simplified Persian texts. Closed to native speakers of this language.
Prereq: 1102. This course is available for EM credit. GE for lang course.

2193  Individual Studies  U 1 - 5
Individual Studies. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 5 completions. This course is graded S/U.

PHARMACY

1100  Pharmaceutical Sciences Survey  U 1
Introduction to the University, strategies for student success, academic programs, opportunities in the pharmaceutical sciences and practice, and contemporary issues.
Prereq: Enrollment restricted to students in the BSPS program, or permission of instructor.

2100  Career Development in Pharmaceutical Sciences I  U ½
This class introduces students to diverse careers in the field of pharmaceutical & health sciences. Students will be grouped based on their career interests, & will work with their instructor/peers to gain knowledge on various career paths. Students will engage with guest speakers & will come away with a sense of their options and a critical understanding of career and professional development.
Prereq: Enrollment in the BSPS program, or permission of instructor.

2101  Career Development in Pharmaceutical Sciences II  U ½
In this professional development course, students identify a plan for pursuing their career goals and acquire practical skills to assist with job searching, networking, personal branding, and applying to graduate/professional programs.
Prereq: 2100, enrollment in the Bachelor of Science in Pharmaceutical Sciences program, and Jr standing; or permission of instructor.
2367.01 Drug Use in American Culture U 3
This course investigates a given drug by assessing its historical use, clinical properties and risks, its role in American culture, and other issues surrounding its use/abuse in the United States. Students will analyze various sources of information and effectively communicate key messages using a variety of platforms.
Prereq: English 1110 or equivalent, and Soph standing. Not open to students with credit for 2367.02. GE writing and comm course: level 2.

2367.02 Drug Use in American Culture U 3
This course investigates a given drug by assessing its historical use, clinical properties and risks, its role in American culture, and other issues surrounding its use/abuse in the United States. Students will analyze various sources of information and effectively communicate key messages using a variety of platforms. Online delivery only.
Prereq: English 1110 or equivalent, and Soph standing. Not open to students with credit for 2367.01. GE writing and comm course: level 2.

2400.01 Adding Drugs: Effects, Introductory Neurobiology, and Regulation U 3
Overview of effects, regulation, and mechanism of action of adding drugs, with an introduction to function of the nervous system and how this function is altered by drugs.
Prereq: Not open to students with credit for 2000. Not open to professional students in the College of Pharmacy.

2410 Drugstore Science U 3
This course introduces the science behind common drugstore products, including over-the-counter (OTC) medications and drug-coxmetics, including how these products work, potential non-drug alternatives, and various drug-related issues involving their use. Note: Content of this course is not intended to be considered as professional medical advice or to replace advice from a healthcare provider.

2500 Drug Discovery, Development and Delivery U 3
Provides a comprehensive overview of the drug discovery, development, and delivery process within the U.S. healthcare system, exploring the roles of vested stakeholders (e.g., patients, pharmaceutical industry, providers, insurers, society, etc.) during a drug's "bench to bedside" development including its post-development place in therapy.

2510 Introduction to Pharmacy U 2
A survey of the profession of pharmacy, dealing with its history, educational requirements, organization, regulation, and current developments.
Prereq: Not open to students with credit for 2511H, 4510, 4511H.

2511H Introduction to Pharmacy U 3
A survey of the profession of pharmacy including its history, scope of practice, educational pathways, ethical foundations, regulation, contemporary issues, career opportunities, and prospects for the future, as well as topics relating to medication use and drug discovery/development.
Prereq: Enrollment in the BSPS program and Honors standing, or permission of instructor. Not open to students with credit for 2510, 4510, or 4511H.

2520 Patient Perspectives U 2
This course will provide students with the unique opportunity to learn directly from patient speakers (and caregivers if available) about the impact disease states and therapy have on them. In addition to listening to these first-hand accounts, students will be able to thoughtfully engage and meaningfully reflect each week to develop their understanding and empathy for the patient experience.

2530 Introduction to Pharmaceutical Science Research U 2
This elective is designed to differentiate investigation-focused pharmaceutical research compared to skills-focused laboratory course work and introduce students to exciting topics of active research in the field in a highly approachable way.
Prereq: Honors standing.

2530E Introduction to Pharmaceutical Science Research U 2
This elective is designed to differentiate investigation-focused pharmaceutical research compared to skills-focused laboratory course work and introduce students to exciting topics of active research in the field in a highly approachable way.
Prereq: Honors standing.

2534 It's Not Magic, It's Pharmaceutical Sciences U 3
This course will serve as an introduction to pharmaceutical and associated healthcare sciences. Topics covered include the history of medicine, drug discovery and development, natural products, and the role of societal attitudes in health care. Topics will be presented through video and hands-on experiences.
Prereq: Not open to students enrolled in the BSPS program.

3100 Human Physiology and Disease U 4
This course examines principles of human physiology and provides an overview of the most common pathophysiological diseases.
Prereq: Biology 1113 or 1113H or 1114 or 1114H, and Chem 1210 or 1250 or 1610 or 1910H, and enrollment in the BSPS program; or permission of instructor.

3191 Experiential Learning in Pharmaceutical Sciences U
Students will begin to develop and solidify their career goals and improve their understanding of career and professional development in the pharmaceutical sciences through hands-on experience in an internship, course lectures and assignments. Students will work closely with supervisors and instructors to explore skills and receive constructive feedback.
Prereq: Permission of instructor, and students must already have secured an internship/experiential opportunity. This course is graded S/U.

3200 Biochemistry for the Pharmaceutical Sciences U 5
Fundamentals of biology for the study of the pharmaceutical sciences, including molecular basis of structure, metabolism, genetic replication, transcription, and translation in humans. Ties to drug processes will be highlighted.
Prereq: Chem 2520 or 2920H; and enrollment in the BSPS program, or permission of instructor.

3400 Therapeutic Frontiers U 2
Investigation of newly emerging (and at times) controversial strategies for treating disease, including biologics, cell replacement therapy, and vaccines among others. This course also explores the science behind emerging and important therapeutic factors such as the placebo effect, the microbiome, and pharmacogenomics.
Prereq: Not open to students with credit for 4410.

3410 Science Communication & Engagement U 1
Within the Generation Rx Laboratory at the Center of Science and Industry (COSI), students will practice science communication as they create and lead live, hands-on experiments teaching basic drug science.
Prereq: Jr or Sr standing, enrollment in the BSPS program, and permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

3420 Generation Rx: America's Drug-Taking Culture U 3
This course analyzes America's drug-taking culture by examining its past, present, and future. Students will identify factors that fuel it, discuss its influence on a patient's medication experience, and evaluate its role in a current public health crisis. The course will conclude with discussing ideas that promote a culture of health.

3550 Pharmacoeconomics: Dilemmas and Decision-Making U 2
Develops core competencies in ethical issues in healthcare settings amidst a biologically, socially, culturally diverse patient population. Discusses the pharmaceutical industry's ethical responsibilities & professional conduct, including clinical drug trials & studies, research, marketing & promotion. Discusses basic principles of business ethics in other healthcare industries.

3550 Principles of Therapeutics U 2
Designed to provide knowledge about medication therapies and treatment guidelines for common illnesses affecting patients.
Prereq: Not open to students with credit for Phr 4520. This course is graded S/U.

3550 Drugs, Human Enhancement, and the Mastery of Nature U 3
How should we navigate questions of identity in the world of cognitive and mood enhancing drugs? Where do we draw the line on 'smart drugs' for intellectual endeavors or the use of performance enhancing drugs in athletic pursuits? More broadly, we will debate whether and how as a society we might enact particular restraints on our pursuit of human enhancements.

3540 Health Citizenship: Advocacy and Change-Making U 3
The goal of the Health Citizenship: Advocacy and Change-Making elective is to build a foundation of knowledge of historical and current state and federal issues that impact healthcare and cultivate skills to become effective changemakers to improve the healthcare system.

3708 Vaccines: A Global History U 3
This course examines the history and biology of vaccines. We explore the discovery and development of vaccines, along with the political and cultural controversies that have surrounded them for centuries. Team-taught course with faculty member in History.
Prereq: Not open to students with credit for History 3708. GE historical study course. Cross-listed in History.

4000 Molecules to Medicines I: An Integrated Approach to the Pharmaceutical Sciences U 5
First course in a two-course series. Principles governing the design, synthesis, delivery, action and use of drugs in disease treatment. Model disease pathophysiology and treatment will be investigated, discussing how biological differences can be targeted for therapeutic gain.
Prereq: 3200, 4100, Biochem 4511, or 5614 (prereq or concur). Prereq or concur: Phr 3100, ECOB 2520, or Physio 3200.

4010 Molecules to Medicines II: An Integrated Approach to the Pharmaceutical Sciences U 5
Second course in a two-course series. Principles governing the design, synthesis, delivery, action and use of drugs in disease treatment. Model disease pathophysiology and treatment will be investigated, discussing how biological differences can be targeted for therapeutic gain.
Prereq: 4000.

4191 BSPS Internship for Curricular Practical Change U 0
Provides professional experience which will prepare students for professional expectations upon graduation. This course accompanies the active pursuit of an internship experience which satisfies the requirements for curricular practical training.
Prereq: Enrollment in the BSPS program, submitted CPT application, letter of offer from CPT site, and permission of instructor. This course is graded S/U.

4193 Individual Studies in Pharmaceutical Sciences U ½ - 12
Library and laboratory work designed to give the qualified student an opportunity to complete an original investigation or pursue an interest in a special problem.
Prereq: CPHR 2.5 or above, and Soph standing; and enrollment in the BSPS program, and permission of instructor. Not open to students with credit for Pharmacy 493. Repeatable to a maximum of 30 cr hrs or 12 completions. This course is progress graded (S/U).
362 Pharmacy

4194 Group Studies in Pharmaceutical Sciences  U  1 - 12
Group studies topics in various fields of Pharmacy.
Prereq: Enrollment in BS/BS program, or permission of instructor. Not open to students with credit for Pharmacy 494.01. Repeatable to a maximum of 12 cr hrs or 12 completions.

4210H Problem Solving in Biomedical Chemistry  U  2
A course designed to use problem-based learning to promote understanding of biomedical concepts. Case studies will be assigned allowing students to apply biochemical principles and communicate with their colleagues in the course.
Prereq: 3200 or 4100, and enrollment in BS/BS program.

4330 Basic Pharmacokinetics  U  2
An elementary course designed to introduce the student to the topic of pharmacokinetics. The application of biopharmaceutics and pharmacokinetic principles as they relate to drug absorption, distribution and elimination will be discussed.
Prereq: Math 1114 or 1151, or permission of instructor.

4420 Molecular Pharmacology-From DNA to Biopharmaceutical Products  U  2
Introduces students to pharmacological research and drug discovery through readings, discussions, and presentations.
Prereq: 3200 or 4100; or Chem 2520 or 2202H, and Biochem 4511 or 5613. Not open to students with credit for Pharmacy 471.

4430 GPCR Pharmacology  U  1
Focuses on the pharmacology of G-protein-coupled receptors (GPCRs). GPCRs constitute a large and diverse family of proteins whose importance is underscored by the fact that at least one third of the currently marketed drugs target these proteins.
Prereq: Enrollment in the BS/BS program. Not open to students with credit for 472.

4440 Pharmacology of Neurologic and Psychiatric Disorders  U  3
This course will serve as an introduction to principles of pharmacological therapy of neurologic and psychiatric diseases.
Prereq: 3200 or 4100, or Biochem 4511 or 5613, or Neurosc 3000, or permission of instructor.

4470 Contemporary Pharmacology  U  1
Examination of various current topics in pharmacology through discussions of recently published pharmacology papers. Enrollment with permission of instructor. Repeatable to a maximum of 3 ch hrs.

4600 Pharmaceutical Sciences Laboratory  U  2
Examination of the laboratory instrumentation and methods used in the drug discovery process.
Prereq: 3200, 4000, and 4600; or permission of instructor. Repeatable to a maximum of 3 cr hrs.

4997 BS/BS Honors Project  U  1 - 4
The Honors Project class is designed to provide undergraduate students with practical experience in the pharmaceutical sciences through research, outreach and engagement, internships, and other activities.
Prereq: Honors standing, and enrollment in the BS/BS program. Repeatable to a maximum of 4 cr hrs. This course is graded S/U.

4998 General Undergraduate Research  U  1 - 18
Course credit earned by conducting research while enrolled as an undergraduate student. Repeatable to a maximum of 60 cr hrs or 12 completions. This course is graded S/U.

4999 Undergraduate Research Thesis  U  1 - 18
Culmination of undergraduate research in the form of written thesis. Repeatable to a maximum of 80 or hrs or 12 completions. This course is graded S/U.

5000 Interdisciplinary Case Management for Working with Underserved Populations  U  G  P  2
This course will provide students the opportunity to collaborate with students from other health care professions including pharmacy, health and rehabilitation sciences, nursing, medicine and social work. The students will use a problem-based learning approach to patient care in community health facilities or populations, living in poverty, with complex healthcare needs.
Prereq: Jr or Sr standing in the BS/BS program, enrollment in the PharmD program, or permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U. Cross-listed in HthrSc 5000, Nursing 5000, and SocWork 5018.

5005 Fundamentals of Pathophysiology  U  G  3
This course provides a fundamental overview of human pathophysiology by comparing dysfunctional body processes to normal physiological function. Case studies will be applied to pathophysiological phenomena.
Prereq: Admission to the MS Translational Pharmacology or Master of Clinical Research program, or permission of instructor. Not open to students with credit for HthrSc 5500, or enrollment in PharmD program.

5010 Fundamentals of Pharmacology  U  G  3
This course overviews principles underlying drug action, including an investigation of current treatments for a variety of common diseases. In addition, this course will implement activities that emphasize the ethical aspects and implications of a variety of drug therapies.
Prereq: Not open to students with credit for 2010, or 4400, or Pharmd 5650, or HthrSc 5510; or enrollment in PharmD program.

5270 Antibiotics and Microbial Natural Products  U  G  P  3
Microorganisms represent the largest trove of genetic and metabolic diversity in the world. They are responsible for producing a vast array of chemically diverse natural product small molecules. This course covers the biology behind the chemistry of these molecules and their role in human medicine.
Prereq: A grade of C- or above in 4000, Biochem 5614, or Microbi 4120; or Grad standing; or permission of instructor. Cross-listed in Microbi.

5402 Economic Evaluation of Pharmaceutical and Health Care Interventions  U  G  P  3
Introduction to economic evaluation of pharmaceutical and other health care interventions and services, including evaluating costs and health outcomes, using results to inform resource allocation, interpretation and evaluation of economic evaluations in the literature, and decision analysis in health care.
Prereq: Grad. Jr, or Sr standing. Not open to students with credit for Nursing 7402.

5410 Understanding and Changing Vaccine Hesitancy Perspectives  U  G  P  3
Current research findings relating to neurobiology of addiction are explained and interpreted. Students should have some introductory knowledge of neurobiology. Repeatable to a maximum of 9 cr hrs.

5500 History of Pharmacy  U  G  3
Evolution and development of the profession of pharmacy from antiquity to the present, with emphasis on its Anglo-American development since the 18th century.
Prereq: Soph standing in BS/BS, or enrollment in PharmD program. Not open to students with credit for 5130.

5505 Pay It Forward  U  G  2
This course helps students become philanthropists through volunteering and creating services through grants for the community. PharmD and BS/BS students will collaborate together in small groups to develop different projects for community partners. Pay It Forward exists in support from Ohio Campus Compact on campuses throughout Ohio.
Prereq: Enrollment in the PharmD or BS/BS programs. This course is graded S/U.

5510 Basics of Pharmacoeconomics  U  G  3
Covers basic information on the effects of dietary factors on pharmaconutrition to be utilized as a foundation in solving patient-related cases in pharmacy practice.
Prereq: Undergrad standing, enrollment in the PharmD program, or permission of instructor.

5520 Advanced Pharmacoeconomics  U  G  P  2
Provides concepts needed by pharmacists necessary to include nutrition into their daily assessment of patients and integrate their findings into the therapeutic plan.
Prereq: 5510, and enrollment in the College of Pharmacy; or permission of instructor. Not open to students with credit for PVR 5155.

5525 Advocacy in Pharmacy  U  G  2
Informs and engages students in legislation, the role of advocacy in Pharmacy, current healthcare issues, and how students and organizations can make a difference in the future of Pharmacy practice. Completion of Pharmacy 2510: Introduction to Pharmacy recommended for undergraduates.
Prereq: Enrollment in BS/BS program or Doctor of Pharmacy program, or permission of instructor.

5540 Introduction to Clinical & Translational Pharmacy Research  U  G  2
Introduction to conducting research in clinical pharmacy including research design issues and ethical considerations. Faculty conducting research in various populations will discuss their research, followed by class discussion.
Prereq: 4000, and enrollment in the PharmD or BS/BS program. Not open to students with credit for 5170. This course is graded S/U.

5550 Topics in International Pharmacy  U  G  2
Seminar on global pharmaceutical issues and international practices of pharmacy.
Prereq: Jr or Sr standing. Not open to students with credit for 5180. This course is graded S/U.

5560 Success & Leadership in Pharmacy  U  G  1/
Explore the meaning of success and leadership, attributes of successful leaders and what can be done to be a successful leader.
Prereq: Enrollment in College of Pharmacy, or permission of instructor. Not open to students with credit for 5610. This course is graded S/U.
5580 Professional Ethics U P 1½
The conceptual basis and content of pharmaceutical ethics; significance of codified ethics, interprofessionally considered; individual and group analysis of ethical issues; methods of encouraging compliance.
Prereq: Soph standing in BSPS program, or enrollment in PharmD program. Not open to students with credit for 5410.

5590 Chemical Dependency and the Healthcare Professional U G P 3
This lecture- and discussion-based course provides instruction, debate and exploration relating to the impact of chemical dependency on healthcare professionals, including the concepts of addiction, individual at-risk, intervention, withdrawal, emotions, recovery networks, regulatory actions and returning to practice.

5700 Introduction to Personalized Therapeutics and Pharmacogenomics U G P 3
Exploration of the trend to therapy tailored to the individual patient rather than "one drug fits all," inter-individual differences in drug responses, with emphasis on genetic and genomic factors; ethical, regulatory, and economic issues that impact drug therapies. Credit for introductory biology course recommended prior to enrollment.
Cross-listed in BioPhrm and CBG.

5797 Study at a Foreign Institution U G P 1 - 18
An opportunity for students to study at a foreign institution and receive OSU credit for work completed there. Students will pay OSU fees and any fees in excess of OSU tuition, as well as all travel and subsistence costs.
Prereq: Permission of department. Repeatable to a maximum of 54 cr hrs or 3 completions.

5798 International Healthcare Experience in Pharmacy U P 3
Preparation for traveling abroad to a destination country. Students will be introduced to the culture, history, and healthcare practice in the destination country. Evaluation will be based on participation in individual class sessions and fulfillment of assignments.
Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

6001 Introductory Pharmacy Practice Experiences I P 1
First in a two-module sequence of part-time experiences that enhance and complement first-year professional coursework. Students engage in activities in community pharmacies and with other pharmacy partners. Activities provide foundation for attitudes and skills that will be applied during the professional practice laboratory.
Prereq: Enrollment in the Doctor of Pharmacy program. This course is graded S/U.

6002 Introductory Pharmacy Practice Experiences II P 1
Second in a two-module sequence of part-time experiences that enhance and complement first-year professional coursework. Students engage in activities in community pharmacies and with other pharmacy partners. Activities provide foundation for attitudes and skills that will be applied during the professional practice laboratory.
Prereq: Enrollment in PharmD program. This course is graded S/U.

6101 Transitions I P 1
Provides students with an orientation to pharmacy school as well as essential skills and tools for successful matriculation to the professional PharmD curriculum.
Prereq: Enrollment in the Doctor of Pharmacy program.

6102 Transitions II P ½
This course builds on skills and knowledge gained in the first year of the program in preparation for a summer intensive professional experience and the second year curriculum. The major course themes are leadership, entrepreneurship, and innovation.
Prereq: Enrollment in the Doctor of Pharmacy program.

6191 Pharmacy Internship for Curricular Practical Training P 0
Provides additional experience in a professional pharmacy setting which is necessary to prepare students for experiential rotations that are a required part of the curriculum as the student progresses towards their Doctor of Pharmacy degree. This course accompanies the active pursuit of a pharmacy internship experience which satisfies the requirements for curricular practical training.
Prereq: Submitted CPT application, and letter of offer from CPT site, and permission of instructor. This course is graded S/U.

6193 Individual Studies in Pharmacy P ½ - 12
Laboratory and library work designed to give the qualified student an opportunity to complete an original investigation or pursue an interest in a special problem.
Prereq: Enrollment in PharmD program, and permission of instructor. Repeatable to a maximum of 30 cr hrs or 12 completions. This course is graded S/U.

6194 Group Studies in Pharmacy P 1 - 12
Group studies topics in various fields of Pharmacy.
Prereq: Enrollment in PharmD, or permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completion.

6201 Foundations in Pharmacy Administration I P 2
An introduction to the U.S. healthcare system, management, leadership, and pharmacy law, in preparation for roles as pharmacy intern and future pharmacy practitioners.
Prereq: Enrollment in the Doctor of Pharmacy program.

6301 Concepts in Patient Care I P 3
The first in a two-module sequence addressing concepts and skills that are essential components of exemplary patient care. This module focuses on oral and written communication and drug information skills in the context of using the patient care process to counsel patients about the selection and use of nonprescription medications particularly in community and ambulatory care pharmacy settings.
Prereq: Enrollment in the Doctor of Pharmacy program.

6302 Concepts in Patient Care II P 2½
The second in a two-module sequence addressing concepts and skills that are essential components of exemplary patient care. This module focuses on oral and written communication and drug information skills in the context of using the patient care process to counsel patients about the selection and use of nonprescription medications, particularly in community and ambulatory care pharmacy settings.
Prereq: Enrollment in the Doctor of Pharmacy program.

6401 Integrated Patient Care Laboratory I P 3
First in a two-module professional practice laboratory sequence. Topics include preparation/dispensing of various dosage forms, communication, use of drug information resources, and use of instruments.
Prereq: Enrollment in the Doctor of Pharmacy Program.

6402 Integrated Patient Care Laboratory II P 3
Second in a two-module professional practice laboratory sequence. Topics include preparation/dispensing of various dosage forms, communication, use of drug information resources, and use of instruments.
Prereq: Enrollment in the Doctor of Pharmacy program.

6501 Principles of Drug Action I P 5
This module provides basic foundations in the pharmaceutical sciences necessary for the understanding of drugs and the determinants of drug action. The module covers biochemistry and physiology of drug action, physical chemistry of pharmaceutical products, medicinal chemistry and pharmacokinetics.
Prereq: Enrollment in the Doctor of Pharmacy program.

6550 Pharmacy Students East Meets West Videoconference P 1
This is a seminar course focused on pharmaceutical issues in the United States and Taiwan. The course will provide students the opportunity to interact with pharmacy students from overseas to learn about global pharmacy practice. The students will use a team-based learning approach in a flipped classroom setting.
Prereq: Enrollment in PharmD program, or permission of instructor. This course is graded S/U.

6701 Program Level Assessment I P ½
The purpose of the PLA is to assess students’ competence with knowledge and skills delivered in the P1 year and readiness to proceed in the curriculum.
Prereq: Enrollment in PharmD program. This course is graded S/U.

7000 Pharm.D. Program Course Remediation P ½ - 4
This course will be offered at the discretion of the Pharm.D. Academic Review Committee to remediate a course that requires successful completion as a program requirement. This may be used to fulfill the requirement of successful completion of required coursework and repeated within Pharm.D., but students cannot enroll in 7000 more than once for the same course.
Prereq: Enrollment in the Doctor of Pharmacy program, and approval of the Pharm.D. Academic Review Committee. Repeatable to a maximum of 12 cr hrs or 3 completions. This course is graded S/U.

7000.11 Advanced Pharmacy Practice Experience I Remediation P ½ - 2½
This course will be offered at the discretion of the Director of Experiential Education or the Pharm.D. Academic Review Committee to remediate a required APPE course. This may be used to fulfill the requirement of successful completion of the required APPE course and may be repeated within the Pharm.D. program.
Prereq: Enrollment in the Doctor of Pharmacy program, and approval of the Director of Experiential Education or the Pharm.D. Academic Review Committee. Repeatable to a maximum of 7.5 cr hrs or 3 completions.

7000.12 Advanced Pharmacy Practice Experience II Remediation P ½ - 2½
This course will be offered at the discretion of the Director of Experiential Education or the Pharm.D. Academic Review Committee to remediate a required APPE course. This may be used to fulfill the requirement of successful completion of the required APPE course and may be repeated within the Pharm.D. program.
Prereq: Enrollment in the Doctor of Pharmacy program, and approval of the Director of Experiential Education or the Pharm.D. Academic Review Committee. Repeatable to a maximum of 7.5 cr hrs or 3 completions.
Introductory Pharmacy Practice Experiences. Students apply didactic pharmacy course work in a variety of pharmacy practice settings.

This course will be offered at the discretion of the Director of Experiential Education or the Pharm.D. Academic Review Committee to remediate a required APPE course. This may be used to fulfill the requirement of successful completion of the required APPE course and may be repeated within the Pharm.D. program.

Prereq: Enrollment in the Doctor of Pharmacy program, and approval of the Director of Experiential Education or the Pharm.D. Academic Review Committee. Repeatable to a maximum of 7.5 cr hrs or 3 completions.

This course is graded S/U.

Advanced Pharmacy Practice Experience VIII Remediation

This course will be offered at the discretion of the Director of Experiential Education or the Pharm.D. Academic Review Committee to remediate a required APPE course. This may be used to fulfill the requirement of successful completion of the required APPE course and may be repeated within the Pharm.D. program.

Prereq: Enrollment in the Doctor of Pharmacy program, and approval of the Director of Experiential Education or the Pharm.D. Academic Review Committee. Repeatable to a maximum of 7.5 cr hrs or 3 completions.

Advanced Pharmacy Practice Experience IX Remediation

This course will be offered at the discretion of the Director of Experiential Education or the Pharm.D. Academic Review Committee to remediate a required APPE course. This may be used to fulfill the requirement of successful completion of the required APPE course and may be repeated within the Pharm.D. program.

Prereq: Enrollment in the Doctor of Pharmacy program, and approval of the Director of Experiential Education or the Pharm.D. Academic Review Committee. Repeatable to a maximum of 7.5 cr hrs or 3 completions.

This course is graded S/U.

Introduction to Pharmacy Practice Experiences

This module will provide students with essential skills and tools for successful matriculation into their advanced pharmacy practice experiences. It will also continue the development of skills within the affective domain.

Prereq: Enrollment in PharmD program.

7010 Advanced Pharmacy Practice Experiences Option

Advanced pharmacy practice experiences including ambulatory, community, institutional and elective settings. Students may receive Honors Level Performance distinction and have a textual note added to their official University transcript.

Prereq: Enrollment in PharmD program, or permission of instructor. Repeatable to a maximum of 12 cr hrs.

7011 Advanced Pharmacy Practice Experiences I

Advanced pharmacy practice experiences including ambulatory, community, institutional and elective settings. Students may receive Honors Level Performance distinction and have a textual note added to their official University transcript.

Prereq: Enrollment in PharmD program, or permission of instructor.

7012 Advanced Pharmacy Practice Experiences II

Advanced pharmacy practice experiences including ambulatory, community, institutional and elective settings. Students may receive Honors Level Performance distinction and have a textual note added to their official University transcript.

Prereq: Enrollment in PharmD program, or permission of instructor.

7013 Advanced Pharmacy Practice Experiences III

Advanced pharmacy practice experiences including ambulatory, community, institutional and elective settings. Students may receive Honors Level Performance distinction and have a textual note added to their official University transcript.

Prereq: Enrollment in PharmD program, or permission of instructor.

7014 Advanced Pharmacy Practice Experiences IV

Advanced pharmacy practice experiences including ambulatory, community, institutional and elective settings. Students may receive Honors Level Performance distinction and have a textual note added to their official University transcript.

Prereq: Enrollment in PharmD program, or permission of instructor.

7015 Advanced Pharmacy Practice Experiences V

Advanced pharmacy practice experiences including ambulatory, community, institutional and elective settings. Students may receive Honors Level Performance distinction and have a textual note added to their official University transcript.

Prereq: Enrollment in PharmD program, or permission of instructor.

7016 Advanced Pharmacy Practice Experiences VI

Advanced pharmacy practice experiences including ambulatory, community, institutional and elective settings. Students may receive Honors Level Performance distinction and have a textual note added to their official University transcript.

Prereq: Enrollment in PharmD program, or permission of instructor.

7017 Advanced Pharmacy Practice Experiences VII

Advanced pharmacy practice experiences including ambulatory, community, institutional and elective settings. Students may receive Honors Level Performance distinction and have a textual note added to their official University transcript.

Prereq: Enrollment in PharmD program, or permission of instructor.

7018 Advanced Pharmacy Practice Experiences VIII

Advanced pharmacy practice experiences including ambulatory, community, institutional and elective settings. Students may receive Honors Level Performance distinction and have a textual note added to their official University transcript.

Prereq: Enrollment in PharmD program, or permission of instructor.

7019 Advanced Pharmacy Practice Experiences IX

Advanced pharmacy practice experiences including ambulatory, community, institutional and elective settings. Students may receive Honors Level Performance distinction and have a textual note added to their official University transcript.

Prereq: Enrollment in PharmD program, or permission of instructor.

7020 Transitions III

This module will provide students with essential skills and tools for successful matriculation into their advanced pharmacy practice experiences. It will also continue the development of skills within the affective domain.

Prereq: Enrollment in PharmD program.

7021 Transitions IV

This module will provide students with essential skills and tools for successful transition into their role as new practitioner pharmacists. This course is the fourth of a four-course sequence designed to teach PharmD students skills in self-awareness, leadership, innovation, entrepreneurship, and professionalism that are necessary at vital transitions in a career in pharmacy.

Prereq: Enrollment in PharmD program. This course is graded S/U.
7130 Humanistic Pharmacy  P  2
The fundamental principles of humanistic practice are open communication, mutual respect, and absence of judgment between patients and health care providers. This course will use current literature, patient cases, speakers, personal reflection, and group exercises to empower students to provide and advocate for humanistic healthcare.
Prereq: Enrollment in the PharmD program.

7140 Neurobiology of Addiction  G P  2
Covers current knowledge of changes in molecular and circuit pathways in the brain that occur in response to use of addictive drugs and are thought to underlie the behavioral challenges of addiction.
Prereq: Grad standing in PharmD program, or permission of instructor.

7150 Pediatric Pharmacotherapy  P  1½
A review of pediatric pharmacotherapy of selected diseases with pharmaceutical care ramifications in various settings.
Prereq: Enrollment in PharmD program, or permission of instructor.

7170 Pain Palliative Care and Geriatrics  P  3
Chronic pain management, palliative care and geriatric pharmacotherapy. Topics address interdisciplinary viewpoints related to disease and associated symptoms management in geriatric and end-of-life care.
Prereq: Enrollment in PharmD program, or permission of instructor.

7180 CNS Drug Discovery  P  1
The primary objective of this course is to help students learn to critically evaluate scientific papers in the area of CNS drug discovery and to present their evaluations to their colleagues. This objective will be achieved through lecture, student presentations, and group discussions of current, high-impact CNS pharmacological or related research.
Prereq: Grad standing, enrollment in PharmD program, or permission of instructor. Not open to students with credit for 8720.

7190 Topics in Oncology Pharmacy  P  1
This course aims to expand students’ understanding of oncology topics. It will be taught by oncology specialist pharmacists and PGY2 pharmacy residents from The James Cancer Hospital. Students will be exposed to oncology pharmacy administration, medication assistance programs, therapeutics lectures, chemotherapy patient education, relevant current events, and career paths in oncology pharmacy.
Prereq: Second or Third-year standing in the PharmD program, or permission of instructor. This course is graded S/U.

7200 Patient Care Services in Community and Ambulatory Pharmacy Practice  P  1
Encourages application of pharmacy practice principles & project management skills to community & ambulatory pharmacy. Opportunities & barriers to providing direct patient care in ambulatory care & community pharmacy settings, maintaining collaborative relationships, continuous practice improvement, demonstrating the value of pharmacy practice for stakeholders will be discussed and applied.
Prereq: Completion of first year in the PharmD program. This course is graded S/U.

7202 Foundations In Pharmacy Administration II  P  3
This course will provide students with an understanding of pharmacy practice management as it fits into the contemporary healthcare system. Students will become familiar with general management concepts and skills that can be applied in a variety of pharmacy practice settings in the evolving healthcare system.
Prereq: Enrollment in PharmD program.

7230 Introduction to Veterinary Pharmacy  G P  3
This elective is an introductory course to veterinary pharmacy. It will cover basic principles of anatomy and physiology of veterinary patients; the differences in medication pharmacology, pharmacodynamics, pharmacokinetics, and therapies in veterinary and human patients; and the laws and regulations that are applicable to veterinary pharmacy.
Prereq: Enrollment in PharmD program.

7250 Introduction to Critical Care Pharmacy Practice  P  3
This course will be an introduction to pharmacy practice in the intensive care unit and the care of critically ill patients. The primary focus of each class session will be the basic physiologic alterations associated with critical illness and the evidence-based rationale for various therapeutic maneuvers commonly utilized in critically ill patients.
Prereq: Third year standing in PharmD program, or permission of instructor. This course is graded S/U.

7260 The Business of Pharmacy  P  3
The intent of this course is to build important 21st century business value skills and expertise, for pharmacy professionals interested in acquiring business knowledge for the purpose of taking on successive management and leadership roles in the healthcare environment. Learners will gain the knowledge and skills necessary for a successful career in the healthcare industry.
Prereq: Enrollment in PharmD program, or permission of instructor.

7280 Medical Outreach Trips: Making the Most of Service and Learning in Central America  P  2
Pharmacy practice finds its place in international healthcare. The goal of this course is to educate the student on medical outreach and holistically prepare the student for service-learning opportunities primarily focused in Honduras.

7300 Concepts in Patient Care III  P  1½
This course focuses on communication and drug information skills in the context of understanding and utilizing the patient care process. Communication and drug information skills will be discussed and applied in the context of community & ambulatory care pharmacy practice.
Prereq: Enrollment in PharmD program.

7304 Concepts in Patient Care IV  P  1½
The fourth in a series of modules addressing concepts and skills that are essential components of exemplary patient care. This module focuses on learning the elements and process involved in Medication Therapy Management. The module also includes skill development of working in an Interprofessional environment as well as appropriate drug information response and medical literature citations.
Prereq: Enrollment in PharmD program.

7305 Concepts in Patient Care V  P  3
This is the last course in a series of courses addressing concepts and skills that are essential components of exemplary patient care. This module focuses on advancing professional practice skills and concepts related to nonprescription products and integrative medicine practices. Materials will be delivered via lectures, small group activities, and case-based discussions.
Prereq: Enrollment in PharmD program.

7350 Drug Discovery and Drug Design  G  2
A study of the discovery and design of new drugs; topics include natural products isolation, molecular modeling, molecular targets, and biosynthesis and metabolism.
Prereq: Grad standing, and permission of instructor.

7351 Special Topics in Medicinal Chemistry and Pharmacognosy  G  2
This course provides advanced training in specialized topics in medicinal chemistry relevant to research interests in the field. The course will enhance students’ problem-solving skills, and students will develop grant writing skills related to research topics in medicinal chemistry.
Prereq: 7350, or permission of instructor. Not open to students with credit for 8350, 8360, or 8370.

7370 Advanced Pharmaceutical Analysis  G  2
The use of NMR spectroscopy in the assay and control methods of drug preparations.
Prereq: Grad standing.

7403 Integrated Patient Care Laboratory III  P  3
This course is a series of authentic, hands-on experiences that enable students to master component skills that are essential for exemplary patient care and practice integrating those skills in simulated practice settings. Topics include sterile compounding, institutional pharmacy practice, and electronic health records. Students will also continue to develop skills introduced earlier in IPCL.
Prereq: Enrollment in PharmD program.

7404 Integrated Patient Care Laboratory IV  P  3
The fourth course in a series of authentic, hands-on experiences that enable students to master component skills that are essential for exemplary patient care. Students will practice integration of these patient care skills in simulated practice settings.
Prereq: A grade of D or above in 7403, and enrollment in PharmD program.

7405 Clinical Research Study and Site Management  G P  3
Fundamental principles of clinical research operations from study site selection to study closure from the perspective of sponsors and clinical research sites including an introduction to database design, management, quality assurance, and reporting for site and sponsor operations.
Prereq: Nursing 7770 or PharmD 7770, or permission of instructor. Cross-listed in Nursing.

7406 Integrated Patient Care Laboratory V  P  3
This is the fifth course in a series of authentic, hands-on experiences that enable students to master component skills that are essential for exemplary patient care. Students will practice integration of these patient care skills in simulated practice settings.
Prereq: A grade of D or above in 7405, and enrollment in PharmD program.

7407 Integrated Patient Care Laboratory VI  P  3
The sixth course in a series of authentic, hands-on experiences that enable students to master component skills that are essential for exemplary patient care. Students will practice integration of these patient care skills in simulated practice settings.
Prereq: A grade of D or above in 7406, and enrollment in PharmD program.

7460 Regulatory Strategy and Clinical Trial Reporting  G P  3
Explores regulatory strategy in new medical product development and lifecycle management. Develops scholarly and technical writing skills for regulatory professionals regarding new drug submissions to the Food and Drug Administration (FDA). Describes regulations and guidelines for clinical trial transparency.
Prereq: 7770, Nursing 7770, or permission of instructor.

7510 Teaching in Pharmacy  P  3
The intent of the course is the preparation of clinical educators who can inspire learners to advance the profession of pharmacy. The course provides exposure to the educational planning process and provides a mix of theory and application. Students will gain the knowledge and skills necessary to facilitate their own development as clinician educators.
Prereq: 2nd year standing or above in PharmD program. This course is graded S/U.
Pharmacy

7550  Research Applications of Clinical Pharmacology G 3
Application of basic and advanced concepts in pharmacology to contemporary research literature to solidify understanding of the pharmacologic principles underlying the individualization of drug therapy and contemporary drug development. Fundamentals of clinical pharmacology for the development, evaluation, and clinical use of pharmaceutical products. Prereq: 5010, BioPhrm 5600, HHTh/Soc 5510, or other general pharmacology course; or permission of instructor. Cross-listed in BioPhrm.

7560  Clinical Trials I: Design and Regulation G 3
This course provides a fundamental overview of clinical trial design, methods, and regulation with an emphasis on medical product development, clinical trial protocols, preclinical research requirements, and the appraisal of published clinical trials. Prereq: Enrollment in the MS Translational Pharmacology program, or permission of instructor. Not open to students with credit for Nursing 7770 or Phe 7770. Cross-listed in BioPhrm and Nursing.

7561  Clinical Trials II: Site Management and Study Leadership G 3
This course provides a fundamental overview of best practices of clinical trial study and site management, including an emphasis on data, safety, and quality management, and study team leadership. Prereq: 7560, BioPhrm 7560, or Nursing 7560, or permission of instructor. Not open to students with credit for 7405 or Nursing 7405. Cross-listed in BioPhrm and Nursing.

7562  Design and Management of Preclinical Studies G 3
Fundamental overview of preclinical study design, methods, and regulation with an introduction to the clinical development process. Provides a synopsis of best practices of preclinical trial site and study management, quality and data management, and leadership in the context of preclinical and translational research endeavors. Prereq: Admission to the MS Translational Pharmacology program, or permission of instructor.

7570  Pharmaceutical Safety and Risk Management G 3
Comprehensive investigation of pharmacovigilance initiatives and pharmaceutical safety regulation. Pharmaceutical risk management in premarket testing and development, recognition of safety signals, post-approval experience, drug production, risk mitigation, and administration of pharmaceutilicals. Prereq: 7770, Nursing 7770, or permission of instructor.

7572  Global Regulation of Medical Products G 3
Exploring legal issues related to clinical research and regulatory affairs. Examining the role of regulatory authorities, regulations and guidelines (US, EU and global) in new product development, including Good Manufacturing Practices (GMP) and Good Laboratory Practices (GLP). Prereq: 7770 or Nursing 7770, or permission of instructor.

7580  Principles of Safety Pharmacology G 3
Introduction to organ system studies of current experimental models, risk assessment, and regulatory guidelines for evaluating drug candidates in various organ systems. Prereq: Admission to the MS Translational Pharmacology or Master of Clinical Research program, or permission of instructor.

7582  Organ System Toxicology G 3
Principles of toxicology, physiology and pharmacology as they relate to adverse and unanticipated drug effects. Emphasis on cardiovascular, nervous, pulmonary, liver, and kidney systems. Open to students in MS Pharmacology program. Other students, including advanced undergraduate students, may enroll with permission of instructor. Completion of a basic pharmacology class useful but not required. Prereq: Admission to the MS Translational Pharmacology program, or permission of instructor.

7583  Advanced Organ Systems Toxicology and Risk Assessment G 3
Principles of risk assessment, toxicology, and physiology as they relate to effects of chemical and pharmacologic agents on the blood, immune, ocular, skin, reproductive, endocrine systems. Includes a review of chemical carcinogenesis, genotoxic, and developmental toxicity as they relate to chemical or drug exposure. Prereq: 7582, or permission of instructor.

7584  Applied Pharmacokinetics and Pharmacodynamics G 3
Introduction to basic and advanced concepts in pharmacokinetics, pharmacodynamics, and pharmacology for clinical investigators and other research professionals participating in the conduct of clinical trials. Prior coursework in pharmacology recommended. Prereq: Admission to the MS Translational Pharmacology program, or permission of instructor. Not open to students with credit for 8020, or 7310 and 7320.

7586  Integrative In Vivo Modeling for Drug Development: Application for Safety and Clinical Pharmacology G 3
Evaluating drug effects and animal models for safety and toxicity assessment. Prereq: 7562, or permission of instructor.

7588  Toxic Substances G 3
Survey the effects of toxic substances on biological systems including the mechanism of action for major toxicants, sources of toxicants, signs and symptoms associated with intoxication, and methods of treatment. Substances presented will include those that may be encountered occupationally, environmentally, medically, and in the context of substance abuse. Recommended prereq: 7582.

7595  Scientific Writing: Clinical Trial Protocol and Manuscript Development G 3
Best practices in scientific writing: development of an interventional clinical trial protocol (drug/device studies) and the generation of a manuscript for publication. Prereq: Admission to the MS Pharmacology program, or permission of instructor. Cross-listed in BioPhrm 7598.

7597  Scientific Writing: Preclinical Study Protocol and Manuscript Development G 3
Best practices in scientific writing: development of an interventional (drug/device) safety or efficacy preclinical study protocol and the generation of a manuscript for publication. Prereq: Enrollment in the MS Translational Pharmacology program, or permission of instructor.

7599  Culminating Project in Clinical Research G 3
The culminating project is an independent scholarly project that allows students to apply skills and competencies acquired across the master's program in clinical research. During the course, students will also complete their professional ePortfolio. Prereq: Enrollment in the Master of Clinical Research, or permission of the program director. Cross-listed in Nursing.

7601  Integrated Pharmacotherapy I P 9½
Teach Pharm.D. students pathophysiology, pharmacology, and pharmacotherapy using an integrated approach. This approach facilitates the development of a rigorous understanding of the scientific basis for preventing and managing human health disorders, and the ability to integrate and apply that knowledge while providing exemplary medication-related patient-centered and population-based care. Prereq: Enrollment in PharmD program.

7602  Integrated Pharmacotherapy II P 9½
This course is designed to help Pharm.D. students develop a rigorous understanding of the scientific basis for preventing and managing human health disorders, and the ability to integrate and apply that knowledge while providing exemplary medication-related patient-centered and population-based care. Prereq: Enrollment in PharmD program.

7603  Integrated Pharmacotherapy III P 8
This course is designed to help Pharm.D. students develop a rigorous understanding of the scientific basis for preventing and managing human health disorders, and the ability to integrate and apply that knowledge while providing exemplary medication-related patient-centered and population-based care. Prereq: Enrollment in PharmD program.

7604  Integrated Pharmacotherapy IV P 7½
This course is designed to help Pharm.D. students develop a rigorous understanding of the scientific basis for preventing and managing human health disorders, and the ability to integrate and apply that knowledge while providing exemplary medication-related patient-centered and population-based care. Prereq: Enrollment in PharmD program.

7620  Topics in Emergency Medicine Pharmacotherapy P 2
Introduction to the interdisciplinary processes of care in Emergency Medicine and the practice of pharmacy in the Emergency Department. Material will be collaboratively taught by faculty members from the Colleges of Pharmacy, Medicine and Nursing through lecture and roundtable discussion with active participation. Prereq: Third year standing in PharmD program, or permission of instructor. This course is graded S/U.

7650  Personal Finance for the Health, Law, and Public Policy Professionals G 3
This course is designed for the graduate student that wants to learn more about personal finance. The course will cover topics such as budgeting with significant student loan debt, the importance of insurance coverage, home and auto loan purchasing, credit card management, employee benefits, investing, retirement, income tax, and estate planning. Prereq: Enrollment in the health professions, law, or public policy programs. Repeatable to a maximum of 6 cr hrs. This course is graded S/U. Cross-listed in BusFin.

7702  Program Level Assessment II P ½
The purpose of the PLA is to assess students' competence with knowledge and skills delivered in the P2 year and readiness to proceed in the curriculum. Prereq: Enrollment in PharmD program. This course is graded S/U.

7703  Program Level Assessment III P ½
The profession of pharmacy requires pharmacists to use different aspects of their education to resolve problems and juggle multiple tasks at the same time. In order to provide a foundation for these skills, module-based assessments are supplemented in the P3 year with the annual program-level assessment or PLA. Prereq: Enrollment in PharmD program.

7770  Fundamentals of Medical Product Development and Regulation G 3
Function of clinical research in medical product development and the regulatory process of new medical products. Laws and regulations concerning the development, testing, commercialization, and total product life cycle for medical products. Regulations governing the conduct of clinical research, including study sponsors, investigators, and Institutional Review Boards. Prereq: Admission to the Master of Clinical Research program, or permission of instructor. Cross-listed in Nursing.
Clinical Research Design and Methods G P 3
Study of research design and methods used in clinical research. Measurement issues, bias and confounding, statistical considerations, evaluation of published clinical research designs, and protocol and proposal development. Prereq: Admission to the Master of Clinical Research program, or permission of instructor. Cross-listed in Nursing.

Data Analysis and Interpretation in Clinical and Preclinical Research G P 3
Introduction to the principles of biostatistical methods used in biomedical research. Analysis of clinical and preclinical research data and interpretation of statistical results in biomedical studies. Prereq: Enrollment in Master of Clinical Research program or MS Translational Pharmacology program, or permission of instructor. Not open to students with credit for PubHlBio 6210.

Interprofessional Education I P ½
This is the first of a four-course sequence designed to teach PharmD students how to advance collaboration and quality of patient care by providing interprofessional opportunities for students to learn about, from, and with other members of the healthcare team. Prereq: Enrollment in PharmD program. This course is graded S/U.

Interprofessional Education II P ½
This is the second of a four-course sequence designed to teach PharmD students how to advance collaboration and quality of patient care by providing interprofessional opportunities for students to learn about, from, and with other members of the healthcare team. This required course will have 3 interactive collaborations per semester. Prereq: Enrollment in PharmD program. This course is graded S/U.

Interprofessional Education III P ½
This is the third of a four-course sequence designed to teach PharmD students how to advance collaboration and quality of patient care by providing interprofessional opportunities for students to learn about, from, and with other members of the healthcare team. This required course will have 3 interactive collaborations per semester. Prereq: Enrollment in PharmD program. This course is graded S/U.

Interprofessional Education IV P ½
This is the fourth of a four-course sequence designed to teach PharmD students how to advance collaboration and quality of patient care by providing interprofessional opportunities for students to learn about, from, and with other members of the healthcare team. Prereq: Enrollment in PharmD program. This course is graded S/U.

Pharmacy Practice Management P 4
The medication use system, resource management, and the economic evaluation of pharmaceutical services and pharmacoepidemiology. Prereq: Enrollment in PharmD program, or permission of instructor. Not open to students with credit for Pharmacy 786 or 788.

Chromatographic Methods G 2
A study and application of selected chromatographic techniques for the purification of natural products or other organic mixtures. Prereq: Grad standing, and permission of instructor.

Phytochemical Analysis of Natural Products G 2
This course is intended to provide graduate students with the basic skills to be able to select and apply proper techniques to natural product samples for drug discovery, method design, and validation purposes. Prereq: Enrollment in PharmD program, or permission of instructor. Not open to students with credit for Pharmacy 790.

Fundamentals of Drug Disposition G 3
An introduction to concepts in drug disposition. Fundamental concepts in drug absorption, distribution, metabolism and excretion (i.e. pharmacokinetics) will be covered. Prereq: Enrollment in the College of Pharmacy.

Pharmaceutical Sciences Research and Communication G 1
An introduction to contemporary concepts in experimental design, data interpretation, and scientific writing in the pharmaceutical sciences. Students will begin to develop their skills in scientific writing, with a particular focus on manuscripts. Prereq: Enrollment in College of Pharmacy.

Pharmacometrics G 3
This is an advanced course focusing on population PK/PD modeling. The course comprises an intensive workshop with hands-on training in the application of pharmacometrics principles and use of statistical modeling software (NONMEM and R). Prereq: 8020 and Math 2415, or any differential equations course, or permission of instructor.

Advanced Drug Delivery Systems G 2
Topics on drug delivery systems with emphasis on tumor targeted delivery and nanovehicles. Prereq: Grad standing, or permission of instructor.

Health System Pharmacy Finance G 3
This course covers selected aspects of financial and managerial accounting as it relates to health systems and pharmacy. Learners will be introduced to financial concepts, issues, vocabulary, and tools that are needed by pharmacy leaders in the healthcare industry. Prereq: Enrollment in the MS in Health-System Pharmacy program, or permission of instructor.
368 Pharmacy

8520 Research Ethics G P 1
Basic concepts of integrity in the process of research. The course fulfills NIH requirement for research ethics. Repeatable to a maximum of 20 cr hrs. This course is progress graded (S/U).

8700 Theoretical and Experimental Pharmacology G 2
Theoretical basis of pharmacologic sciences including signal transduction, dose-response curves and drug-receptor interactions.

8730 Contemporary Pharmacology G 1
Presentation and discussion related to current topics in pharmacology. Repeatable to a maximum of 20 cr hrs.

8740 History of Pharmacology and Drug Discovery G P 1
Gain an understanding of the history of drugs and chemical and develop an essential breadth of knowledge in pharmacological sciences. Focus is on the historical key events, times, places and contributing scientists and provide a historical perspective essential for deeper analysis of scientific knowledge in therapeutics. Prereq: Enrollment in Graduate Program, or Rank 2 or Rank 3 in PharmD program.

8750 Molecular and Cellular Pharmacology I G 2
Relates to primary literature-based understanding of molecular and cellular basis of gene regulation, signal transduction, protein function and modifications, cell survival, intracellular trafficking and cytoskeletal dynamics. Importantly, the key pharmacological tools/techniques/drug actions employed in these fields will be discussed. Prereq: 8700; and enrollment in the College of Pharmacy or permission of instructor.

8760 Molecular and Cellular Pharmacology II G 2
This course relates to primary literature-based understanding of biochemistry and physiology of excitable tissues with an emphasis on mechanism of drug action. The content emphasis tools/techniques/drug actions relative to ion channels and excitability, heart rhythm, muscle contraction, learning and memory, and pain. Prereq: 8700; and enrollment in the College of Pharmacy; or permission of instructor.

8880.01 All College Seminar: Presentation G %
Presentation of oral and written reports dealing with recent advances in the pharmaceutical sciences. Repeatable to a maximum of 20 cr hrs.

8880.02 All College Seminar: Participation G %
Participation and discussion of research and recent advances in the pharmaceutical sciences. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

8881.01 Medicinal Chemistry: Seminar Presentation G %
Presentation of oral and written report dealing with recent advances in medicinal chemistry and pharmacognosy. Repeatable to a maximum of 20 cr hrs.

8881.02 Medicinal Chemistry: Seminar Participation G %
Participation in and discussion of research and recent advances in medicinal chemistry and pharmacognosy. Repeatable to a maximum of 20 cr hrs.

8882.01 Pharmacuetics: Seminar Presentation G %
Presentation of oral and written reports dealing with recent advances in pharmaceutics. Repeatable to a maximum of 20 cr hrs.

8882.02 Pharmacuetics: Seminar Participation G %
Participation and discussion of research and recent advances in the field of pharmaceutics. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

8894 Seminar: MS in Health-System Pharmacy G 1
Issues and new information for health system pharmacy will be presented by MS candidates, faculty and guest speakers covering therapeutic updates, project proposals and final results, and current topics. Prereq; Enrollment in MS Health-System Pharmacy program, or permission of instructor. Repeatable to a maximum of 20 cr hrs.

8895.01 Pharmacology Seminar: Presentation G %
Presentation of oral and written reports dealing with recent advances in pharmacology. Repeatable to a maximum of 20 cr hrs.

8895.02 Pharmacology Seminar: Participation G %
Participation and discussion of research and recent advances in the field of pharmacology. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

8993 Individual Study in the Pharmaceutical Sciences G 1 - 20
Initial research in the pharmaceutical sciences, pre-candidacy. Repeatable to a maximum of 20 cr hrs or 20 completions. This course is progress graded (S/U).

8999 Research in the Pharmaceutical Sciences G 1 - 20
Research for thesis or dissertation purposes only. Repeatable to a maximum of 20 cr hrs or 20 completions. This course is progress graded (S/U).
2450 Philosophical Problems in the Arts U 3
Introduction to major philosophical issues in the arts; examination of artistic intention, representation v. abstraction, the grounds and objectives of art criticism, the import of cultural differences and their application to specific works of art.
Prereq: Not open to students with credit for 240 or 240H. GE VPA course.

2455 Philosophy and Videogames U 3
Examination of the philosophical issues that accompany the creation, play, and critique of videogames.
GE VPA and cultures and ideas course.

2458 Animals and Philosophy U 3
Examination of philosophical questions about the status of nonhuman animals.
GE cultures and ideas course.

2465 Death and the Meaning of Life U 3
Explore the question of whether there is a relation between mortality and a meaningful life.
GE lit course.

2470H Honors Philosophy in Film U 3
An introduction to philosophical and aesthetic issues involved with film as an art and as an expressive medium.
Prereq: Honors standing, or permission of instructor. GE VPA course.

2500 Symbolic Logic U 3
A formal presentation of the elements of modern deductive logic; decision and proof procedures in sentential logic and functional logic.
Prereq: Math 1075 or equiv, or an ACT Math subscore of 22 or higher that is less than 2 years old. Not open to students with credit for 250. GE quant reason math and logical anly course.

2650 Introduction to the Philosophy of Science U 3
A survey of the main philosophical problems relating to the natural sciences.
Prereq: 3 or hrs in logic or Math above 1075, an ACT Math Subscore of 22 or higher, or Math Placement Level R or better, and 3 or hrs in natural science, or permission of instructor. Not open to students with credit for 255.

2660 Metaphysics, Religion, and Magic in the Scientific Revolution U 3
A philosophical examination and critical exploration of the interconnection between the natural scientific, religious and magical traditions in the emergence of the Scientific Revolution.
Prereq: Not open to students with credit for 250. GE historical study course.

2670 Science and Religion U 3
A philosophical examination of the relationship between science and religion, concentration on issues regarding the creation of the universe and the origins of life.
Prereq: Not open to students with credit for Comp/Std 2670 or Rel/Std 2670. GE cultures and ideas course. Cross-listed in Rel/Std.

2680 Scientific Controversies U 3
Modern science raises many difficult questions about the nature of the universe and our place in it. This class considers several controversies that arise within science and investigates their broader philosophical significance. How does science work in different domains and at different times, and what can science tell us about ourselves and the nature of the world?
GE cultures and ideas course.

2690 Genes and Society U 3
This team taught, interdisciplinary course (crosslisted as MOLGEN 2690) provides science-based exposure to topics in classical and modern genetics but with an emphasis on social and ethical issues. Together we will discuss what genes are, and how they work, and how your genome influences traits and behaviors in the context of social beliefs and philosophy.
Prereq: Not open to students with credit for MOLGEN 2690. Cross-listed in MolGen.

2850 Introduction to Philosophy of Religion U 3
A philosophical analysis of the nature of religion and the foundations of religious belief.
GE cultures and ideas course.

3000 Gateway Seminar U 3
The primary purpose of the gateway seminar is to give students intensive training in reading, researching, and writing about philosophy. Topics will vary.
Prereq: Philos major, or permission of instructor.

3001 Economy, Polity, and Community U 3
Examines how different ways of thinking about human nature shape our understanding of philosophy, politics, and economics.
Prereq: Econ 2001.XX or 2002.01 or 2002.03H; and Philos 2400 or PolSci 2400 or 2400H; and Econ 5001 or Philos 2500 or 5540 or PolSci 4653 or 4553H; and Philos 3300; and Econ 3400 or Int/Std 3400 or PolSci 3780 or 3780H; and PolSci 4280 or 4380. Not open to students with credit for Econ 3001 or PolSci 3001. Cross-listed in Econ and PolSci.

3002 Tradition, Progress, and Utopia U 3
Examines how different ways of thinking about social and political change shape our understanding of philosophy, politics, and economics.
Prereq: Econ 2001.XX or 2002.01 or 2002.03H; and Philos 2400 or PolSci 2400 or 2400H; and Econ 5001 or Philos 2500 or 5540 or PolSci 4653 or 4553H; and Philos 3300; and Econ 3400 or Int/Std 3400 or PolSci 3780 or 3780H; and PolSci 4280 or 4380. Not open to students with credit for Econ 3002 or PolSci 3002. Cross-listed in Econ and PolSci.

3111 Introduction to Jewish Philosophy U 3
A general introduction to major figures and trends in medieval, modern, and contemporary Jewish philosophy; emphasis on Philo, Saadiah, Maimonides, Spinoza, Mendelssohn, and Suber.
Prereq: Not open to students with credit for 321 and JewishSt 3111. GE cultures and ideas course. Cross-listed in JewishSt.

3120 Engaging Time: Philosophical Dimensions of Temporality U 3
This course introduces the philosophical concept of time. Topics may include: how we measure time; whether time is real or if it is the result of subjective perception; God's knowledge of the future; and, the coherence of 'time-travel'.
Prereq: Not open to students with credit for Hebrew 3120. GE cultures and ideas course.

3210 History of Ancient Philosophy U 3
Major figures and issues in Greek philosophy: pre-Socratics, Socrates, Plato, Aristotle.
Prereq: 3 cr hrs in Philos, or permission of instructor. GE lit and diversity global studies course.

3220 History of Medieval Philosophy U 3
Major figures in medieval philosophy, including Augustine, Aquinas, Duns Scotus, and Ockham.
Prereq: 3 cr hrs in Philos, or permission of instructor. GE lit and diversity global studies course.

3230 History of 17th-Century Philosophy U 3
Major figures in European philosophy in the 17th century.
Prereq: 3 cr hrs in Philos, or permission of instructor. GE lit and diversity global studies course.

3240 History of 18th-Century Philosophy U 3
Major figures in European philosophy in the 18th century. Background in 3230 recommended.
Prereq: 3 cr hrs in Philos, or permission of instructor. GE lit and diversity global studies course.

3250 History of 19th-Century Philosophy U 3
Major figures in 19th-century philosophy.
Prereq: 3 cr hrs in Philos, or permission of instructor. GE lit and diversity global studies course.

3260 Movements in 20th-Century Philosophy U 3
Major figures or movements in twentieth-century philosophy.
Prereq: 3 cr hrs in Philos, or permission of instructor.

3261 Fundamental Concepts of Existentialism U 3
Key concepts of the movement: commitment, absurdity, freedom, and death, as expressed in the works of Nietzsche, Sartre, Camus, Kierkegaard, and others.
Prereq: 3 cr hrs in Philos, or permission of instructor. GE lit course.

3300 Moral Philosophy U 3
A rigorous examination of major issues in moral philosophy, such as the basic moral value(s); the relation between value and obligation; justification of moral judgment.
Prereq: 6 cr hrs of Philos course work, or enrollment in Philosophy, Politics, and Economics Major, or permission of instructor.

3310 Morality and the Mind U 3
An introduction to issues in moral psychology including various interactions between moral philosophy and issues in psychology and cognitive science.
Prereq: 3 cr hrs in Philos, or permission of instructor.

3341H Ethical Conflicts in Health Care Research, Policy, and Practice U 3
An interdisciplinary approach to an analysis of central moral dilemmas in health care research, policy, and practice.
Prereq: Honors standing; Jr or Sr standing and permission of department or instructor. Not open to students with credit for 338H.

3410 Philosophical Problems in the Law U 3
Introduction to the nature of law and the philosophical and moral problems concerning law; justification of civil disobedience, criminal punishment, plea bargaining, and the enforcement of morality.
Prereq: Not open to students with credit for 338.

3420 Philosophical Perspectives on Issues of Gender U 3
An examination of metaphysical, epistemological, and ethical issues surrounding sex and gender, with issues chosen to represent both theoretical and practical controversies.
Prereq: 3 cr hrs in Philos, or permission of instructor. GE cultures and ideas and diversity soc div in the US course.

3430 The Philosophy of Sex and Love U 3
This course will explore both historical and contemporary philosophical perspectives on both sex and love.
Prereq: 3 cr hrs in Philos, or permission of instructor.

3440 Theorizing Race U 3
Introduction to issues of “race,” consideration of the historical emergence and development of ideas of “race” and of racist practices, along with their contemporary formations.
Prereq: GE second writing course or Philos 2400, or enrollment in Philosophy, Politics, and Economics Major, or permission of instructor. Not open to students with credit for AAmASt 3440. Cross-listed in AAmASt.
370 Philosophy

3530 Philosophy of Logic U 3
Introduction into a variety of distinctly philosophical issues related to logic and its formal development. Presupposes a background in formal logic.
Prereq: 2500 (250). Not open to students with credit for 450.

3600 Introduction to Philosophy of Language U 3
Survey of philosophical issues regarding the nature of linguistic representation and its role in thought and communication.
Prereq: 2500 and 6 cr hrs of Philos course work, or permission of instructor.

3650 Philosophy of Science U 3
A rigorous introduction to general methodological issues in the philosophy of science.
Prereq: 2500 and 6 cr hrs of Philos course work, or permission of instructor.

3680 Philosophy of Biology U 3
A survey of philosophical questions regarding the theoretical foundations and implications of research in biology.
Prereq: 6 cr hrs of Philos course work, or permission of instructor.

3700 Introduction to Metaphysics U 3
Survey of main philosophical positions concerning the nature of reality, persons, freedom, identity, and causation.
Prereq: 6 cr hrs of Philos course work, or permission of instructor.

3750 Introduction to Theory of Knowledge U 3
Survey of main philosophical positions concerning knowledge, justification, skepticism, and rationality.
Prereq: 6 cr hrs of Philos course work, or permission of instructor.

3800 Introduction to Philosophy of Mind U 3
General introduction to the philosophy of mind, the mind-body problem, intentionality, and the nature of consciousness.
Prereq: 6 cr hrs of Philos course work, or permission of instructor.

3810 Philosophy of Action U 3
Philosophical examination of the nature of human action. Topics include the nature of intention, practical rationality, issues in moral psychology, and the metaphysics of free will.
Prereq: 6 cr hrs of Philos course work, or enrollment in Philosophy, Politics, and Economics Major, or permission of instructor.

3830 Consciousness U 3
An introduction to consciousness with a focus on the interactions between philosophy, psychology, and neuroscience.
Prereq: 3 cr hrs of Philos course work, or permission of instructor.

4998 Undergraduate Research in Philosophy U 1 - 3
Undergraduate research in various topics; independent study.
Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

4998H Honors Undergraduate Research in Philosophy U 1 - 3
Undergraduate research in variable topics; independent study.
Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

4999 Thesis Research U 1 - 3
A program of reading arranged for each student, with individual conferences, reports, and papers.
Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

4999H Honors Thesis Research U 1 - 3
A program of reading arranged for each student, with individual conferences, reports, and papers. Failure to receive a mark of S in this course is a disqualification for special honors.
Prereq: Sr standing with a grade of A at least half of the Philos courses taken and with an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 1 semester is required of candidates for the BA with distinction in Philos. Repeatable to a maximum of 9 cr hrs and 3 completions. This course is graded S/U.

5010S Teaching Philosophy U G 3
Design a set of philosophy lessons and teach-teach some of these lessons to secondary school students. Background checks will be required; students may be responsible for associated fees.
Prereq: 6 cr hrs of Philos course work at the 2000-level or above, or Grad standing in Philos, or permission of instructor. GE service learning course.

5193 Individual Studies U G 1 - 6
Individual Studies. Students ordinarily earn from 1 to 3 cr hrs, but honors students may earn up to 6 cr hrs.
Prereq: Permission of dept chairperson. Repeatable to a maximum of 6 cr hrs or 2 completions. This course is graded S/U.

5194 Group Studies U G 1 - 9
Group Studies.
Prereq: Permission of chairperson. Repeatable to a maximum of 18 cr hrs or 6 completions.

5210 Studies in Ancient Philosophy U G 3
Variable content; special topics in ancient Greek philosophy, including value theory, logic, metaphysics and natural science in pre-Socratics Socrates, Plato, Aristotle the Hellenistic schools of neo-Platonism.
Prereq: 3210 or 6 cr hrs at the 2000 level or above in Philos coursework, Grad standing in Philos, or permission of instructor. Repeatable to a maximum of 6 cr hrs.

5211 Plato U G 3
A survey of central philosophical themes in one or more Platonic dialogues.
Prereq: 3210, or 6 cr hrs at the 2000 level or above in Philos coursework, or Grad standing in Philos; or permission of instructor. Not open to students with credit for 691.01.

5212 Aristotle U G 3
A survey of central philosophical themes in one or more Aristotelian treatises.
Prereq: 3210 or 6 cr hrs at the 2000 level or above in Philos coursework, or Grad standing in Philos, or permission of instructor.

5230 Studies in 17th-Century Philosophy U G 3
An intensive examination of a major philosopher or philosophical problem of the period; topics vary from semester to semester.
Prereq: 6 cr hrs of Philos course work at the 2000 level or above, one of which is 3210, 3220, 3230 or 3240; or Grad standing in Philos; or permission of instructor. Repeatable to a maximum of 9 cr hrs.

5240 Studies in 18th-Century Philosophy U G 3
An intensive examination of a major philosopher or philosophical problem of the period; topics vary from semester to semester.
Prereq: 6 cr hrs of Philos course work at the 2000 level or above, one of which is 3210, 3220, 3230 or 3240; or Grad standing in Philos; or permission of instructor. Repeatable to a maximum of 9 cr hrs.

5241 Studies in 18th Century Philosophy: Kant U G 3
An intensive examination of one or more important themes in Kant's philosophical writings.
Prereq: 3230 or 3240, and 6 cr hrs of Philos course work at the 2000 level or above; or Grad standing in Philos; or permission of instructor. Not open to students with credit for 604.01

5250 Studies in 19th-Century Philosophy U G 3
An intensive examination of a major philosopher or philosophical problem of the period; topics vary from semester to semester.
Prereq: 3250 or 6 cr hrs of Philos course work at the 2000 level or above; or Grad standing in Philos; or permission of instructor. Repeatable to a maximum of 9 cr hrs.

5260 Studies in 20th-Century Philosophy U G 3
An intensive examination of one or more central movement in 20th-century philosophy; topics vary.
Prereq: 6 cr hrs of Philos course work at the 2000 level or above; or Grad standing in Philos; or permission of instructor. Repeatable to a maximum of 9 cr hrs.

5261 Phenomenology and Existentialism U G 3
Early existentialist ideas of Kierkegaard and Nietzsche; Husserl's phenomenological method and critical analysis of works of philosophers such as Heidegger, Jaspers, Sartre, Beauvoir, and others.
Prereq: 6 cr hrs of Philos course work at the 2000 level or above; or Grad standing in Philos; or permission of instructor.

5300 Advanced Moral Philosophy U G 3
An intensive examination of major issues within moral philosophy such as the foundations of morality; objectivity in ethics; morality, reason and sentiment; virtues and vices.
Prereq: 3300, or 6 cr hrs in Philos at or above 3000-level; or Grad standing in Philos; or permission of instructor.

5310 Metaphysics U G 3
This course addresses abstract questions about the nature of moral thinking - such as whether moral facts exist, how to understand the contrast between moral and purely descriptive language and beliefs, and how moral judgments can be justified at all.
Prereq: 3300, or 6 cr hrs in Philos at or above 3000-level; or Grad standing in Philos; or permission of instructor.

5400 Advanced Political and Social Philosophy U G 3
An intensive examination of issues in political and social philosophy, including democracy, civil disobedience, anarchism, totalitarianism, and nature of the state.
Prereq: 3410, or 6 cr hrs in Philos at or above 2000-level; or enrollment in Philosophy, Politics, and Economics Major; or Grad standing in Philos; or permission of instructor.

5410 Advanced Philosophy of Law U G 3
An examination of the nature and function of law and of such problems as the relation of law to morality and the justification of punishment.
Prereq: 3410, and 6 cr hrs in Philos at or above 2000-level; or enrollment in Philosophy, Politics, and Economics Major; or Grad standing; or permission of instructor.

5420 Philosophical Topics in Feminist Theory U G 3
An analytical study of selected philosophical issues arising out of feminist theory, such as the nature of autonomy, or the relation between gender and knowledge.
Prereq: 6 cr hrs in Philos at or above 2000-level; or Grad standing; or permission of instructor. Repeatable to a maximum of 6 cr hrs or 2 completions.
Philosophical Perspectives on Race, Education, and Citizenship

This course allows participants to pursue philosophical questions at the intersection of race, education, and political life. These include: Does education play a very specific role in racialized patterns of benefit/detriment? What role does race play in understandings of educational policy & practice? How does race affect understandings of 'education for citizenship'? Prereq: Not open to students with credit for ESPHE 5440. Cross-listed in ESPHE.

5450 Advanced Aesthetic Theory

Basic issues in philosophy of art: the definition of art; meaning, truth, and representation in art; the nature and basis of criticism; the criteria of interpretation of works of art. Prereq: 6 cr hrs in Philos at or above 3000-level; or Grad standing in Philos; or permission of instructor.

5460 Philosophy in Literature

Philosophical problems as reflected in classic works of literature (e.g. Kafka, Sartre, Calvino, Borges, Woolf and others). Topics may include the nature of time and memory; personal identity; time travel; free will and determinism, and the nature of evil. Prereq: 6 cr hrs in Philos at or above 3000-level; or Grad standing, or permission of instructor.

5500 Advanced Symbolic Logic

Introduction to the metatheory of first-order logics and languages; axiomatic development of propositional and predicate logic; model theory; soundness, completeness, and Lowenheim-Skolem theorems. Prereq: 2500. Not open to students with credit for 650.

5510 Nonclassical Logic

Study of selected systems of nonclassical logic, such as entailment systems, modal, many-valued, epistemic deontic, imperative, erotetic, tense and free logics. Prereq: 5500. Repeatable to a maximum of 6 or hrs or 2 completions.

5530 Philosophy of Logic and Mathematics

Analysis of basic concepts used in logic and in philosophical claims about logic and mathematics, such as proposition, logical truth, mathematical objects, and necessity. Prereq: Not open to students with credit for 654.

5540 Theory of Rational Choice

Introduction to the principles and methods of the theory of rational choice with applications in the theory of knowledge, ethics, and social and political philosophy. Prereq: 2500; or enrollment in Philosophy, Politics, and Economics Major; or Grad standing in Philos; or permission of instructor.

5550 Advanced Logical Theory

Topics include formal arithmetic, recursive functions, Turing machines, Godel's incompleteness theorems, Church's thesis, arithmetical truth, logical paradoxes, and higher-order logic. Prereq: 2500 and 5500. Repeatable to a maximum of 9 cr hrs or 3 completions.

5600 Advanced Philosophy of Language

Basic problems and results in the philosophy of language, concentrating on theories of reference, theories of meaning, and theories of language-use (including speech-acts, implicature). Preferable to have credit for 3650 prior to enrollment. Prereq: 2500, and 6 cr hrs in Philos at or above 3000-level; or Grad standing in Philos; or permission of instructor. Not open to students with credit for 673.

5610 Natural Language Metaphysics

Natural languages seem to presuppose that the world is a certain way. In many cases, the presuppositions are philosophically (or scientifically) contentious. We will explore a variety of such cases, noting the ramifications for both metaphysics and for semantics. Taught course with faculty member in Linguistics. Prereq: Philos 2500, and 6 cr hrs in Philos at 3000-level or above; or Ling 5001 or 5401; or Grad standing in Philos; or permission of instructor. Ling 5410 and Philos 5610 repeatable to a maximum of 6 cr hrs. Cross-listed in Ling 5410.

5650 Advanced Philosophy of Science

A study of the nature and structure of scientific concepts, laws, and theories; appraisal of methodologies, presuppositions, and frames of reference in science. Preferable to have credit for 3650 prior to enrollment. Prereq: 2500, and 6 cr hrs in Philos at or above 3000-level; or 2500, and Grad standing in Philos; or permission of instructor. Not open to students with credit for 655.

5700 Advanced Metaphysics

An intensive examination of major metaphysical problems: categories, universals, substance and process, causality and law, space and time, metaphysical presuppositions of knowledge. Preferable to have credit for 3700 prior to enrollment. Prereq: 2500, and 6 cr hrs in Philos at or above 3000-level; or Grad standing in Philos; or permission of instructor.

5750 Advanced Theory of Knowledge

An intensive examination of major epistemological problems: the possibility, origin, foundation, structure, methods, limits, types, and validity of knowledge. Preferable to have credit for 3750 prior to enrollment. Prereq: 2500, and 6 cr hrs in Philos at or above 3000-level; or Grad standing; or permission of instructor. Not open to students with credit for 660.

5800 Advanced Philosophy of Mind

Classical and contemporary approaches to the nature of mind, mind-body, other minds, intentionality, and other problems. Preferable to have credit for 3800 prior to enrollment. Prereq: 6 cr hrs in Philos at or above 3000-level; or Grad standing in Philos; or permission of instructor.

5830 Introduction to Cognitive Science

Cognitive science is an interdisciplinary study of the nature of human thought; psychological, philosophical, linguistic, and artificial intelligence approaches to knowledge representation. Prereq: 9 cr hrs from at least two of these areas: CSE, Ling, Philos or Psych; or permission of instructor. Not open to students with credit for CSE 5511, Ling 5612, or Psych 5612 (612). Cross-listed in CSE, Ling, and Psych.

5840 Advanced Philosophy of Cognitive Science

In-depth examination of the influence of results in cognitive science upon the way in which philosophers approach fundamental issues about the nature of the mind. Prereq: 6 cr hrs in Philos at or above 2000-level; or Grad standing; or permission of instructor.

5850 Philosophy of Religion

A study of religious concepts and problems; the idea and nature of God, of humans, their relation to the world and human destiny. Prereq: 6 cr hrs in Philos at or above 3000-level; or Grad standing; or permission of instructor. Not open to students with credit for 676.

5891 Proseminar in Cognitive Science

Provides an in-depth examination of cognitive science from an interdisciplinary perspective. Prereq: Permission of instructor. Repeatable to a maximum of 4 cr hrs. Cross-listed in CSE, Ling, Psych, and SpHng.

7080 Engineering Ethics

Equip engineering grad students with skills for resolving moral issues that may arise in professional contexts. Includes an introduction to ethics, followed by contemporary issues in engineering ethics, such as the nature and moral status of technology; responsibility, privacy, honesty and integrity, safety and risk; environmental ethics; and the ethics of artificial intelligence. Prereq: Grad standing in ECE. This course is graded S/U.

8001 Graduate Training Seminar

This course is designed to provide professional training for all first- and second-year graduate students that will enable them to develop the skills required for success in research, teaching and service. Prereq: Grad standing in Philos. Repeatable to a maximum of 5 cr hrs or 2 completions. This course is graded S/U.

8100 First-Year Seminar

A topicaly variable introduction to advanced philosophical methodology. Prereq: First year of Grad standing. Not open to students with credit for 700.

8102 Seminar in East Asian Philosophy

Seminar focusing on a particular thinker, school of philosophy, or set of texts from the East Asian philosophical tradition. Topics vary. Prereq: Grad standing in Philos, or permission of instructor. Repeatable to a maximum of 9 cr hrs. Cross-listed in CompSt 8996 and EALL 8996.

8193 Individual Studies

Doctoral students may register for individual study in areas not normally covered by courses. Prereq: MA degree, or at least 30 cr hrs in Grad; and permission of dept chairperson. Repeatable to a maximum of 18 cr hrs or 6 completions. This course is graded S/U.

820 Seminar in History of Philosophy

Seminar in History of Philosophy. Prereq: Grad standing in Philos, or permission of instructor. Repeatable to a maximum of 18 cr hrs or 6 completions.

8300 Seminar in Value Theory

Seminar in Value Theory. Prereq: Grad standing in Philos, or permission of instructor. Repeatable to a maximum of 18 cr hrs or 6 completions.

8550 Seminar in Logic

Seminar in Logic. Prereq: Grad standing in Philos, or permission of instructor. Repeatable to a maximum of 18 cr hrs or 6 completions.

8570 Seminar in Topics in Logic

Selected topics in logic and philosophy of logic; topics vary. Prereq: Grad standing in Philos, or permission of instructor.

8600 Seminar in Philosophy of Language

Seminar in Philosophy of Language. Prereq: Grad standing in Philos, or permission of instructor. Repeatable to a maximum of 18 cr hrs or 6 completions.

8650 Seminar in Philosophy of Science

Seminar in Philosophy of Science. Prereq: Grad standing in Philos, or permission of instructor. Repeatable to a maximum of 18 cr hrs or 6 completions.
**Seminar in Metaphysics**

Seminar in Metaphysics.
Prereq: Grad standing in Philos, or permission of instructor. Repeatable to a maximum of 18 cr hrs or 6 completions.

**Seminar in Theory of Knowledge**

Seminar in Theory of Knowledge.
Prereq: Grad standing in Philos, or permission of instructor. Repeatable to a maximum of 18 cr hrs or 6 completions.

**Seminar in Philosophy of Mind**

Selected topics in philosophy of mind; topics vary.
Prereq: Grad standing in Philos, or permission of instructor. Repeatable to a maximum of 18 cr hrs or 6 completions.

**Placement Seminar**

This course helps to prepare graduate students in the penultimate or final year of their studies to seek employment, especially academic employment in philosophy departments.
Prereq: Grad standing in Philos. Repeatable to a maximum of 8 cr hrs or 3 completions. This course is graded S/U.

**Dissertation Research in Philosophy**

Research for dissertation purposes only.
Prereq: Repeatable to a maximum of 30 cr hrs or 30 completions. This course is graded S/U.

**Research in Physical Medicine and Rehabilitation**

Research for thesis purposes only.
Prereq: Grad or Prof standing, and permission of instructor. This course is graded S/U.

**Introduction to the Physical Therapy Profession**

Introduction to the profession of physical therapy. Information pertaining to professional development, teaching and learning, social responsibility and individual, cultural and age related variations pertaining to the practice of PT.
Prereq: Enrollment in the Doctorate in Physical Therapy program.

**Integrated Clinical Experience**

Part-time clinical experience assigned at an affiliated outpatient facility in central Ohio with the goal of practicing techniques from the musculoskeletal lab and documentation. Repeatable to a maximum of 2 cr hrs.

**Neural Basis of Movement**

Introduction to sensory and motor systems, basis of the neurologic screening examination and principles of motor control theory.
Prereq: Enrollment in Doctorate in Physical Therapy program.

**Pathology for Physical Therapists**

Introduction to pathology and medical management of disease and implications for the physical therapist.
Prereq: Enrollment in Doctorate in Physical Therapy program.

**Pediatric Integrated Clinical Experience**

Designed to provide pediatric focused clinical experiences with direct patient/client care supervised by a licensed physical therapist at a clinical site that has been approved by and has a contract of affiliation with the Physical Therapy Division. Expectations to develop and refine problem-solving, clinical decision-making, patient care and communication skills within the pediatric setting.
Prereq: Enrollment in the Doctorate in Physical Therapy program. This course is graded S/U.

**Principles and Procedures in Physical Therapy Practice I**

Introduction to basic patient handling skills and clinical measurement.
Prereq: Enrollment in Doctorate in Physical Therapy program.

**Principles and Procedures in Physical Therapy Practice II**

Advances the principles and skills for patient management and measurement acquired in Principles and Procedures in Physical Therapy Practice I.
Prereq: Enrollment in the Doctorate in Physical Therapy program.

**Acute Care Integrated Clinical Experience**

This course is designed to provide the student with an integrated clinical experience reflecting didactic preparation to date. This is a part time acute care clinical experience at an affiliated inpatient acute care facility with the goal of practicing techniques from the acute care components of the curriculum and documentation.
Prereq: Enrollment in the Doctorate in Physical Therapy program. This course is graded S/U.

**Service Based Clinical Experience**

In accordance with the mission and philosophy of the professional education program which is to prepare the student for entry-level competence in the practice of physical therapy, this course is designed to provide the student with a service based clinical experience reflecting didactic preparation to date. Clinical experiences with direct patient/client care are supervised by a licensed physical therapist at a clinical site that has been approved by and has a contract of affiliation with the Physical Therapy Division. This course is graded S/U.

**Performance Oriented Clinical Experience**

This course is designed to provide the student with individualized remediation activities to address identified clinical performance deficiencies.
Prereq: Permission of instructor. Repeatable to a maximum of 2 cr hrs or 2 completions. This course is graded S/U.

**Documentation and Reimbursement**

Clinical decision making and professional communication through documentation and reimbursement of clinical activities, including evaluation, goal setting and prognosis.
Prereq: Enrollment in the Doctorate in Physical Therapy program.

**Intermediate Clinical Internship I**

Full-time clinical rotation completed in an affiliated outpatient facility with the focus on patients with musculoskeletal impairments.
Repeatable to a maximum of 8 cr hrs.

**Musculoskeletal Diagnosis and Management I**

The scientific basis for management of the client with pathology of the musculoskeletal system.
Prereq: Enrollment in the Doctorate in Physical Therapy program.

**Biomechanics for Physical Therapy I**

Introduction the musculoskeletal structure and function, the biomechanical basis of human movement, and musculoskeletal disease and injury processes.
Prereq: Enrollment in the Doctorate in Physical Therapy program.

**Biomechanics for Physical Therapy II**

Introduction to musculoskeletal structure and function and the biomechanical basis of human movement focus on lower extremity and gait.
Prereq: Successful completion of all DPT program courses to date with a grade of C or better (except 6998), and in good academic standing.

**Neurologic Basis of Rehabilitation**

Analysis of normal and pathological neural systems for sensory and motor functions, mechanisms of recovery of function associated with rehabilitation, and introduction to neural development.
Prereq: Enrollment in the Doctorate in Physical Therapy program.

**Intermediate Clinical Internship II**

Full time clinical experience rotation completed in an affiliated outpatient facility with the focus on patients with acute or neurologic impairments.

**Advanced Pediatric Integrated Clinical Experience**

Designed to provide an intensive pediatric focused integrated clinical experience for the student enrolled in the pediatric specialization. Clinical experiences are supervised by a licensed physical therapist at a clinical site that has been approved by and has a contract of affiliation with the Physical Therapy Division.
Prereq: Enrollment in the Doctorate in Physical Therapy program. This course is graded S/U.

**Musculoskeletal Skills Laboratory I**

Clinical application and skill acquisition related to management of musculoskeletal conditions by physical therapists.
Prereq: Enrollment in the Doctorate in Physical Therapy program.

**Research Applications in Physical Therapy**

In order for students to understand the relationship between biomedical research and the clinical practice of physical therapy, this laboratory course will immerse students in faculty driven research. Students will be exposed to basic science, applied clinical and/or translational research within areas of faculty research in Physical Therapy.
Prereq: Enrollment in the Doctorate in Physical Therapy program, or permission of instructor.

**Elective Integrated Clinical Experience**

This course provides the student with an integrated clinical experience reflecting didactic preparation techniques in a specific area of practice in physical therapy in order to allow students an opportunity to advance their skills in the given area of practice.
Prereq: Permission of instructor. Repeatable to a maximum of 4 cr hrs or 2 completions. This course is graded S/U.

**Contemporary Practice**

Critical appraisal of current medical, ethical, political and legal topics impacting physical therapy practice.
Prereq: Enrollment in the Doctorate in Physical Therapy program.

**Topics in Pediatric Physical Therapy**

Critical topics related to health care and education systems delivery in pediatric practice and the role of family and culture in the therapeutic program of the child.
Prereq: Enrollment in the Doctorate in Physical Therapy program.
Expectations in Rehabilitation and Long-Term Care  
Healthcare systems and critical topics in rehabilitation and geriatric care. 
Prerequisite: Enrollment in the Doctorate in Physical Therapy program.

8060 Health Care in America and Its Impact on Physical Therapy I  
Analysis of the healthcare system in America and how working within this system impacts the practice of Physical Therapy.

8061 Director's Seminar: PT as a Profession  
Issues pertaining to leadership and professional responsibility in physical therapy as part of the healthcare system are discussed in a seminar format. Students will meet weekly for discussion with faculty and expert panels. Enrollment is limited to 3rd-year students in the doctoral program of physical therapy.

8065S Service Learning in Physical Therapy  
This course was designed to provide students with service-learning opportunities in physical therapy. Repeatable to a maximum of 16 credits or 6 completions. This course is graded S/U.

8070 Management: Administrative Skills  
Administrative skills for the management of PT practice in various settings, introduce basic principles of administration and management that are applicable to PT practice. 
Prerequisite: Enrollment in the Doctorate in Physical Therapy program.

8071 Management II: Administrative Skills  
Administrative skills for the management of PT practice in various settings, introduce basic principles of administration and management that are applicable to PT practices. 
Prerequisite: Enrollment in the Doctorate in Physical Therapy program.

8189 Terminal Clinical Internship I  
Develop entry-level competence in the clinic with patients of various diagnoses for examination, interventions, diagnosis, development of comprehensive plan of care, goal setting, documentation, consultation, delegation, and communication.

8193 Individual Studies in Physical Therapy  
Graduate study of a selected topic. 
Prerequisite: Permission of instructor. Repeatable to a maximum of 9 credits or 9 completions. This course is graded S/U.

8210 Musculoskeletal Diagnosis and Management II  
Region-specific application of the knowledge acquired in Musculoskeletal Diagnosis and Management I, gait analysis, and an introduction to acute care, integumentary system management, and oncology. 
Prerequisite: Enrollment in the Doctorate in Physical Therapy program.

8230 Clinical Applications in Pediatrics  
Physical therapy principles of examination, evaluation, diagnosis, prognosis, and intervention with children. 
Prerequisite: Enrollment in the Doctorate in Physical Therapy program.

8250 Adult Neurologic Rehabilitation  
Analysis of body function and structure, activity, and participation levels associated with injury to the nervous system. Evidence and rationale for examination, and interventions for adult neurologic rehabilitation. 
Prerequisite: Enrollment in the Doctorate in Physical Therapy program.

8270 Geriatric Management  
Critical issues in the management of geriatric clients. 
Prerequisite: Enrollment in the Doctorate in Physical Therapy program.

8272 Cardiopulmonary Rehabilitation  
Evidence and rationale for examination, evaluation, and interventions for prevention of cardiovascular disease and treatment of common cardiopulmonary system disorders. 
Prerequisite: Enrollment in the Doctorate in Physical Therapy program.

8274 Integumentary Systems and Rehabilitation  
Analysis of body function and structure, activity, and participation levels associated with the injury to the integumentary system. Evidence and rationale, and interventions for those with disorders related to the integumentary system. 
Prerequisite: Enrollment in the Doctorate in Physical Therapy program.

8276 Adaptive Equipment and Community Reintegration  
Analysis of the use of adaptive equipment such as orthotics and wheelchairs to augment rehabilitation. Evidence and rationale for the performance of functional capacity evaluations for community reintegration. 
Prerequisite: Enrollment in the Doctorate in Physical Therapy program.

8289 Terminal Clinical Internship II  
Develop entry-level competence in the clinic with patients of various diagnoses for examination, interventions, diagnosis, development of comprehensive plan of care, goal setting, documentation, consultation, delegation, and communication. 
Prerequisite: Enrollment in the Doctorate in Physical Therapy program.

8410 Musculoskeletal Skills Laboratory II  
Application of the knowledge and skills acquired in Musculoskeletal Diagnosis and Management I to specific regions of the musculoskeletal system, gait analysis, acute care, oncology, and wound care. 
Prerequisite: Enrollment in the Doctorate in Physical Therapy program.

8430 Pediatric Laboratory  
Applications and methods used in evaluation, diagnosis and intervention including neurological, musculoskeletal, cardiopulmonary and integumentary systems in children. 
Prerequisite: Enrollment in the Doctorate in Physical Therapy program.

8450 Adult Neurologic Laboratory  
Clinical decision making and techniques for examination, evaluation, and interventions for adult neurologic physical therapy. 
Prerequisite: Enrollment in the Doctorate in Physical Therapy program.

8474 Integumentary and Community Reintegration Laboratory  
Clinical decision making and techniques for examination, evaluation, and interventions for those with disorders related to the integumentary system, adaptive equipment and community reintegration. 
Prerequisite: Enrollment in the Doctorate in Physical Therapy program.

8610 Advanced Orthopedic Physical Therapy  
Critical analysis of the current literature and the application of advanced skills related to the orthopedic patient with an emphasis manual therapy techniques and evidence-based interventions. 
Prerequisite: Enrollment in the Doctorate in Physical Therapy program.

8612 Advanced Sports Physical Therapy  
Introduction to Sports Physical Therapy concepts with emphasis on prevention, acute injury management, differential diagnosis, sports-specific rehabilitation and wellness. 
Prerequisite: Enrollment in the Doctorate in Physical Therapy program.

8620 Entrepreneurial Leadership in PT  
Develop leadership skills and integrate leadership theory in running a physical therapy private practice. This seminar progresses the learner from basic administrative and supervisory principles and theory to the application of higher level skills. 
Prerequisite: Must be enrolled in Physical Therapy, or permission of instructor. This course is graded S/U.

8625 Private Practice Management in PT  
Develop leadership skills and integrate leadership theory in running a physical therapy private practice. This seminar progresses the learner from basic administrative and supervisory principles and theory to the application of higher level skills. 
Prerequisite: Enrollment in Physical Therapy, or permission of instructor. This course is graded S/U.

8630 Clinical Science in Pediatrics  
Typical and atypical development including the effects of disease and damage to the nervous, musculoskeletal, cardiopulmonary and integumentary systems in pediatrics. 
Prerequisite: Enrollment in the Doctorate in Physical Therapy program.

8635 Advanced Pediatric Elective  
To enhance clinical knowledge and skills to facilitate best practice in pediatric care settings. The course is designed to give students exposure to the diversity of pediatric care including clinical decision making, and multidisciplinary team care. Students will be provided the opportunity to learn various assessment skills, develop appropriate plans of care, expand critical thinking. 
Prerequisite: Enrollment in the Doctorate in Physical Therapy program, or permission of instructor. This course is graded S/U.

8640 Complex Scenarios in Physical Therapy  
Critical issues in managing complex scenarios in physical therapy. Repeatable to a maximum of 2 credits.

8645 Advanced Acute Care Practice  
This course enhances knowledge and skills to facilitate best practice and early mobilization in the acute care and ICU settings. It gives students exposure to the diversity of acute care including integrated clinical decision making, pathophysiology, respiratory, electrocardiograms, nutrition, and technology as part of a multidisciplinary team. Simulated experiences are included. 
Prerequisite: Enrollment in the Doctorate in Physical Therapy program.

8650 Advanced Neurologic Rehabilitation  
Critical analysis of the current literature and the application of advanced skills related to the neurologic patient with an emphasis on evidence-based assessment. 
Prerequisite: Enrollment in the Doctorate in Physical Therapy program.

8670 Imaging in Physical Therapy Practice  
Develop an understanding of the basic principles and interpretation of musculoskeletal and neuromuscular imaging. The course will focus on the application of radiographic, CT and MRI images into physical therapy practice. 
Prerequisite: Enrollment in the Doctorate in Physical Therapy program.

8674 Advanced Therapeutic Interventions and Progressions  
Case-based analysis, skill acquisition, and patient-centered clinical interventions. 
Prerequisite: Enrollment in the Doctorate in Physical Therapy program.

8676 Differential Diagnosis for Physical Therapists  
Clinical decision making related to systemic disease that can present as neuromuscular or musculoskeletal conditions. Related literature will be utilized to explore systemic origins of disorders related to PT practice. 
Prerequisite: Enrollment in the Doctorate in Physical Therapy program.
Clinical decision making related to systemic disease that can present as neuromuscular or musculoskeletal conditions. Case studies and related literature will be used to explore systemic origins of musculoskeletal or neuromuscular signs and symptoms. Prereq: Enrollment in the Doctorate in Physical Therapy program.

The purpose of this Experimental Methods in Biomechanics course is to introduce you to the wide variety of equipment that is used to make biomechanical measurements in clinical and research settings. We will discuss the technology/theory that was used to develop each measurement technique, how it is typically used, and its advantages and limitations.

Full-time individualized experience focusing on an aspect of physical therapy such as specialty clinical practice, administration or management, teaching, research, service or advocacy. It must include the development of a related project. Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

Experience within a faculty members research laboratory. Includes exposure to and practice in all aspects of the research process. Repeatable to a maximum of 21 cr hrs or 12 completions. This course is graded S/U.

Repeatable to a maximum of 45 cr hrs or 8 completions. This course is graded S/U.

Prereq: Enrollment in the Doctorate in Physical Therapy program.

An examination of the physical concepts related to energy, including force, electricity, magnetism, and motors. Uses the hands-on discovery mode of instruction. Intended for non-science majors. Prereq: Not open to students with credit for 103. GE nat sci phys course. NS Admis Cond course.

An examination of the various forms of energy and energy production with its personal and global impact. Uses the hands-on discovery mode of instruction. Intended for non-science majors. Prereq: Not open to students with credit for 104. GE nat sci phys course. NS Admis Cond course.

Investigation of the properties of matter, motion and thermodynamics using the inquiry technique. Intended for non-science majors. Prereq: Not open to students with credit for Physics 106 and 107. GE nat sci phys course. NS Admis Cond course.

Investigation of the properties of electricity and circuits, light, optics with applications to real-world phenomena such as astronomy using the inquiry technique. Intended for non-science majors. Prereq: Not open to students with credit for 107 and 108. GE nat sci phys course. NS Admis Cond course.

Examines the physics of motion set in the context of sports. Prereq: Math 1050 (75) or equiv. Not open to students with credit for 110. GE nat sci phys course. NS Admis Cond course.

Algebra-based introduction to classical physics: standard Newtonian physics, for physics and engineering majors. Prereq: A grade of C- or above in Math 1148 (148), or Math Placement Level M. Not open to students with credit for 111. This course is available for EM credit. GE nat sci phys course. NS Admis Cond course.

Algebra-based introduction to electricity and magnetism, simple optics, overview of modern physics including special relativity and quantum mechanics. Prereq: 1200 (111). Not open to students with credit for 112. This course is available for EM credit. GE nat sci phys course. NS Admis Cond course.

Algebra-based introduction to classical physics: fluids and waves; for students having credit for Physics 111 needing equivalent of credit for Physics 1200. Prereq: 111. Not open to students with credit for 1200 (113). This course is available for EM credit. GE nat sci phys course. NS Admis Cond course.

Algebra-based introduction to classical physics: fluids and waves; for students having credit for Physics 111 needing equivalent of credit for Physics 1200. Prereq: 112. Prereq or concur: 1210. Not open to students with credit for 1201 (113). This course is available for EM credit. GE nat sci phys course. NS Admis Cond course.

Calculus-based introduction to electricity and magnetism, for students in Engineering Technology. Prereq: 1250, 1250H, or 1260; and Math 1141, 1151, or 1154 or above; or permission of instructor. Concur: Math 1152, 1158, 1161, 1172, 1181H, or 4181H. Not open to students with credit for 1251. This course is available for EM credit. GE nat sci phys course.

Calculus-based introduction to classical physics: fluids, thermodynamics, waves, for students having credit for Physics 131 needing equivalent of credit for Physics 1250. Prereq: 131. Not open to students with credit for 1250 (133). This course is available for EM credit. GE nat sci phys course. NS Admis Cond course.

Calculus-based introduction to simple optics, modern physics including special relativity and quantum mechanics; for students having credit for Physics 132 needing equivalent of credit for Physics 1251. Prereq: 132. Prereq or concur: 1340. Not open to students with credit for 1251 (133). This course is available for EM credit. GE nat sci phys course. NS Admis Cond course.

In depth study of classical mechanics including Newton's laws, conservation laws, and introduction to special relativity. Prereq: Honors standing, or permission of instructor. Concur: Math 1151 (152), 1161 (161), 1181H, or 4181H. Not open to students with credit for 131. GE nat sci phys course. NS Admis Cond course.

Calculus-based introduction to electricity and magnetism, waves, simple optics, and quantum mechanics; for students in physical sciences, mathematics, engineering. Prereq: 1250, 1250H or 1260; and Math 1141 or 1151 or above; or permission of instructor. Concur: Math 1152, 1161, 1172, 1181H, or 4181H. This course is available for EM credit. GE nat sci phys course.

In depth introduction to: electricity and magnetism including Maxwell's equations, thermodynamics, quantum mechanics. Prereq: Honors standing, and 1250H and Math 1151 or above; or permission of instructor. Concur: Math 1152, 1161, 1172, 1181H, or 4181H. Not open to students with credit for 132. GE nat sci phys course. NS Admis Cond course.

Calculus-based introduction to classical physics: Newton's laws, fluids, thermodynamics, waves. Emphasizes group work; for students in Fundamentals of Engineering Honors. Prereq: Honors standing in Engineering, and 1 entrance unit of Physics or Chem. Concur: Math 1151 (152), 1161 (161), 1181H (161H), or 4181H (191H). Not open to students with credit for 131. This course is available for EM credit. GE nat sci phys course. NS Admis Cond course.

Calculus-based introduction to classical physics: Newton's laws, fluids, thermodynamics, waves. Emphasizes group work; for students in Fundamentals of Engineering Honors. Prereq: 1250 (131) and Math 1151 (152) or above, or permission of instructor. Concur: Math 1152 (153), 1161, 1172, 1181H, or 4181H. Not open to students with credit for 132. GE nat sci phys course. NS Admis Cond course.

The Polaris Mentorship Class will teach students about issues surrounding diversity and inclusion in STEM, provide time to meet with a near-peer mentor, and introduce students to Physics/Astronomy research at OSU. Prereq: Enrollment in Astronomy & Astrophysics major. Engineering Physics major, Physics major, or University Exploration program; or permission of instructor. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

The Polaris Mentorship Class will teach students about issues surrounding diversity and inclusion in STEM, provide time to meet with a near-peer mentor, and introduce students to Physics/Astronomy research at OSU. This is the second and last course of the program. Prereq: 2050.01, or permission of instructor. This course is graded S/U.
2095 Introduction to departmental research programs and to selected topics of interest in contemporary physics. Prereq: 1251 (132), 1251H (132H), or 1261. Not open to students with credit for 295. This course is graded S/U.

2193 Individual Studies U 1 - 5

2194 Group Studies U 1 - 5

2300 Intermediate Mechanics I U 4

2301 Intermediate Mechanics II U 4

2367 Uses of Science in Solving Problems of Society U 3

2998 Undergraduate Research in Physics U 1 - 5

3201H Honors Holography U 3

3470 Optics U 3

4193 Individual Studies U 1 - 5

4194 Group Studies U 1 - 5

4700 Introductory Electronics for Physicists U 3

4998H Honors Undergraduate Research in Physics U 1 - 5

4999 Thesis Undergraduate Research in Physics U 1 - 5

4999H Honors Thesis Undergraduate Research in Physics U 1 - 5

5100 Physics for In-Service Teachers U G 1 - 10

5300 Theoretical Mechanics U G 4

5400 Intermediate Electricity and Magnetism U G 4

5401H Honors Intermediate Electricity and Magnetism I U G 4

5500 Quantum Mechanics U G 4

5501 Quantum Mechanics II U G 4

5501H Honors Quantum Mechanics II U G 4

5502H Honors Quantum Mechanics I U G 4

5600 Statistical Mechanics U G 4

5700 Advanced Physics Laboratory U G 3

5710 Advanced Engineering Physics Laboratory U G 3

Prereq: 1251 (132), 1251H (132H), or 1261. Not open to students with credit for 295. 

Designed to give a properly qualified student opportunity for independent reading, study, or laboratory work in a specialized field of interest. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs or 5 completions. This course is graded S/U.

Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs or 4 completions.

Vectors and kinematics; foundations of Newtonian mechanics; momentum, work, and energy; conservative and nonconservative forces; potentials; angular momentum; rotation about a fixed axis; rigid body motion; nonrotational systems and fictitious forces. Prereq: A grade of C+ or above in 1251, 1251H, or 1261. Concur: Math 2133, 2162.01, 2162.02, 2173, 2162H, or 4162H.

The special theory of relativity; relativistic kinematics; relativistic momentum and energy; introduction to quantum systems; photons; the Bohr atom; matter waves. Prereq: Math 2153 or 2173 (254) or above, and a grade of C+ or above in 2300 (261). Not open to students with credit for 262 or 263.

Energie, environment, and the arms race are examined using the methods of science; focuses on interaction of science and technology; and social and ethical implications of choices. Prereq: Math Placement S or higher; 1 5 on interaction of science and technology; and social and ethical implications of choices. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 3 completions. Undergraduate research or creative activities in various topics.

Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 3 completions.

Undergraduate research or creative activities in various topics; no thesis. Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 15 cr hrs or 3 completions.

Undergraduate research or creative activities in various topics; culminating in a thesis. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 3 completions.

Undergraduate research or creative activities in various topics; culminating in a thesis. Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 15 cr hrs or 3 completions.

2095 Introductory Physics Seminar

4999 Thesis Undergraduate Research in Physics

5100 Physics for In-Service Teachers

5300 Theoretical Mechanics

5400 Intermediate Electricity and Magnetism

5401H Honors Intermediate Electricity and Magnetism I

5500 Quantum Mechanics

5501 Quantum Mechanics II

5501H Honors Quantum Mechanics II

5502H Honors Quantum Mechanics I

5600 Statistical Mechanics

5700 Advanced Physics Laboratory

5710 Advanced Engineering Physics Laboratory

Prereq: A grade of C+ or above in 2301 (263), and a grade of C+ or above in Math 2174 (415) or 2568 (668). Not open to students with credit for 664.

Introduction to the description of electrostatic fields; dielectrics; boundary-value problems; magnetic fields of steady currents; induction; Maxwell's equations; plane waves. Prereq: A grade of C+ or above in 2301 (263), and Math 2174, 2415 (415), 2255 (255), or 5520H (521H); or permission of instructor. Not open to students with credit for 5400H, 555, or 656.

Advanced treatment of electrostatic fields; dielectrics; boundary-value problems; magnetic fields of steady currents; induction; Maxwell's equations; plane waves. Prereq: Honors standing, Math 2174, 2415 (415), 2255 (255), or 5520H (521H), and a grade of C+ or above in Physics 2301 (263); or permission of instructor. Not open to students with credit for 5400, 555, or 666.

Plane waves, plane waves in matter: physical optics; coherence, interference, diffraction, and dispersion. Prereq: Honors standing or permission of instructor; (B+ or better in 5400) or (C+ or better in 5401H) or (B+ or better in 555). Not open to students with credit for 666 or 657.

Introduction to quantum mechanics, including its historical background, the Schrodinger equation, solutions of one-dimensional scattering and bound state problems. Uses Dirac notation. Prereq: Honors status, a grade of B or above in 2301, and a grade of B- or above in Math 2174, 2415, 2255 or 5520H; or permission of instructor. Not open to students with credit for 5500H, 631, or 632.

Advanced treatment of quantum mechanics, including its historical background, the Schrodinger equation, solutions of one-dimensional scattering and bound state problems. Uses Dirac notation. Prereq: Honors status, a grade of B or above in 2301, and a grade of B- or above in Math 2174, 2415, 2255 or 5520H; or permission of instructor. Not open to students with credit for 5501H or 633.

The Schrodinger equation in three dimensions, angular momentum, the hydrogen atom; time-independent perturbation theory, addition of angular momenta, fine and hyperfine structure of hydrogen, identical particles, periodic systems, modern physics applications of quantum mechanics. Prereq: 5500, and Math 2174, 2415, 2255, or 5520H; or permission of instructor. Not open to students with credit for 5501H or 633.

The Schrodinger equation, solutions of one-dimensional scattering and bound state problems. Uses Dirac notation. Prereq: Honors status, or permission of instructor; and B+ or above in 5500, or B- or above in 5500H. Not open to students with credit for 5501.

undergraduate research or creative activities in various topics; culminating in a thesis. Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 15 cr hrs or 3 completions.

Lab course for physics majors. Three advanced experiments from a variety of physics disciplines are carried out. Emphasis is on experimental techniques, analysis of collected data, and formal presentation of experimental results. Prereq: 2301 (263); and 3700 (416); and 5400 (555) or 5400H, and 5500 (631) or 5500H. Not open to students with credit for 616.

Lab course for eng physics majors. Experiments in optics, materials, and nuclear physics are carried out in a team approach, emphasizing DAQ methods and experimental design, analysis of collected data, and formal presentation of experimental results. Prereq: 3700 (416) and 2301 (263), and 5400 (555) or 5400H, and 5500 (631) or 5500H. Not open to students with credit for 616.
376 Physics

5800 Engineering Physics Design I U G 3
Presents fundamentals of engineering-physics design and leads to skills development relevant to a specific design proposal. Technical communication skills, both written and oral, are employed throughout.
Prereq: 2301 (263) and a Second Writing course, and Sr standing in Engineering Physics.

5801 Engineering Physics Design II U G 3
Continues training in engineering-physics design. Preliminary designs are refined and prototypes are fabricated and tested. Technical communication skills, both written and oral, are employed throughout.
Prereq: 5800, and Sr standing in Engineering Physics.

6201 Grad Holography I G 3
Introduction to the theory and basic technique of 3D image making. Students will construct a diode laser and use it to make holograms. For grad students in the grad specialization "Analysis of Material Culture".
Prereq: Grad standing.

6780 Special Topics Seminar G 1
A survey of current research problems in physics.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

6802 Topics in Elementary Particle Physics G 4
Experimental and theoretical aspects of areas of current interest in physics. Elementary Particle Physics.
Prereq: 5501 or grad standing or permission of instructor.

6804 Topics in Atomic and Molecular Physics G 4
Experimental and theoretical aspects of areas of current interest in physics. Atomic and Molecular Physics.
Prereq: 5501 or grad standing or permission of instructor.

6805 Topics in Nuclear Physics G 4
Experimental and theoretical aspects of areas of current interest in physics. Nuclear Physics.
Prereq: 5501 or grad standing or permission of instructor.

6806 Topics in Condensed Matter Physics G 4
Experimental and theoretical aspects of areas of current interest in physics. Condensed Matter Physics.
Prereq: 5501 or grad standing or permission of instructor.

6809 Topics in Biophysics G 4
Experimental and theoretical aspects of areas of current interest in Biophysics.
Prereq: 5501 or grad standing or permission of instructor.

6810 Topics in Computational Physics G 4
Experimental and theoretical aspects of areas of current interest in Computational Physics.
Prereq: 5501 or grad standing or permission of instructor.

6820 Special Topics G 4
Experimental and theoretical aspects of areas of current interest in physics. Special Topics.
Prereq: Prereq: 5501 or grad standing. Repeatable to a maximum of 24 cr hrs.

7193 Individual Studies G 1 - 6
Designed to give a properly qualified student opportunity for independent reading, study, or laboratory work in a specialized field of interest.
Prereq: Permission of Instructor. Repeatable to a maximum of 20 cr hrs or 6 completions. This course is graded S/U.

7194 Group Studies G 1 - 5
Group Studies.
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs or 6 completions.

7401 Electromagnetic Field Theory G 3
Electric and magnetic fields in material media, Maxwell's equations, electromagnetic waves, radiation by simple systems and by moving charges. Special theory of relativity.
Prereq: 5401 and 7701, or permission of instructor.

7501 Quantum Mechanics 1 G 3
Postulates and Schroedinger eq., linear vector spaces, path-integral formulation; symmetry, orbital angular momentum, central potentials, spin angular momentum.
Prereq: 5501 or equivalent, or permission of instructor.

7502 Quantum Mechanics 2 G 3
Variational method; perturbation theory, semiclassical treatment of electromagnetic radiation, quantized electromagnetic radiation, scattering theory; density matrix; Dirac equation.
Prereq: 7501.

7601 Classical and Statistical Physics I G 3
Lagrangian dynamics, variational principles, Hamilton's equations, canonical transformations, symmetries and conservation laws. Introduction to statistical physics; fundamental postulates.
Prereq: 5300 or grad standing in Physics or permission of instructor.

7602 Classical and Statistical Physics II G 3
Entropy, therm. potentials and changes of phase; microscopic expression for entropy and basis of classical ensemble theory. Canonical and grand ensembles; Quantum statistical mechanics.
Prereq: 5603 or equiv. or 7601.

7603 Advanced Statistical Physics G 3
Interacting systems; Ising and Heisenberg models of magnetism, theory of dense gases and liquids, phase transitions and critical phenomena; non-equilibrium statistical physics, Boltzmann equation.
Prereq: 7502 and 7602, or permission of instructor.

8802.01 Topics in Elementary Particle Physics 1 G 3
A systematic advanced treatment of areas of current interest in physics; topics will be announced each semester. Elementary Particle Physics.
Prereq: 7501 or permission of instructor. Repeatable to a maximum of 6 cr hrs.

8802.02 Topics in Elementary Particle Physics 2 G 3
A (continued) systematic advanced treatment of areas of current interest in physics; topics will be announced each semester. Elementary Particle Physics.
Prereq: 8802.01 or permission of instructor. Repeatable to a maximum of 6 cr hrs.

8803.01 Topics in Astroparticle Physics 1 G 3
A systematic advanced treatment of areas of current interest in physics; topics will be announced each semester. Astroparticle Physics.
Prereq: 7501 or permission of instructor. Repeatable to a maximum of 6 cr hrs.

8804.01 Topics in Atomic and Molecular Physics 1 G 3
A systematic advanced treatment of areas of current interest in physics; topics will be announced each semester. Atomic and Molecular Physics.
Prereq: 7501, or permission of instructor. Repeatable to a maximum of 6 cr hrs.

8805.01 Topics in Nuclear Physics 1 G 3
A systematic advanced treatment of areas of current interest in physics; topics will be announced each semester. Nuclear Physics.
Prereq: 7501 or permission of instructor. Repeatable to a maximum of 6 cr hrs.

8806.01 Topics in Condensed Matter Physics 1 G 3
A systematic advanced treatment of areas of current interest in physics; topics will be announced each semester. Condensed Matter Physics.
Prereq: 7501 or permission of instructor. Repeatable to a maximum of 6 cr hrs.

8806.02 Topics in Condensed Matter Physics 2 G 3
A (continued) systematic advanced treatment of areas of current interest in physics; topics will be announced each semester. Condensed Matter Physics.
Prereq: 8806.01 or permission of instructor. Repeatable to a maximum of 6 cr hrs.

8808.01 Topics in the Theory of Quantized Fields I G 3
A systematic advanced treatment of areas of current interest in physics; topics will be announced each semester. Theory of Quantized Fields.
Prereq: 7501 or permission of instructor. Repeatable to a maximum of 6 cr hrs.

8808.02 Topics in the Theory of Quantized Fields II G 3
A (continued) systematic advanced treatment of areas of current interest in physics; topics will be announced each semester. Theory of Quantized Fields.
Prereq: 8808.01 or permission of instructor. Repeatable to a maximum of 6 cr hrs.

8809.01 Topics in Biophysics G 3
A systematic advanced treatment of areas of current interest in physics; topics will be announced each semester. Biophysics.
Prereq: 7501 or permission of instructor. Repeatable to a maximum of 6 cr hrs.

8820 Special Topics G 3
A systematic advanced treatment of areas of current interest in physics; topics will be announced each quarter. Special Topics.
Prereq: 7501 or permission of instructor. Repeatable to a maximum of 12 cr hrs.

8999 Research in Physics G 1 - 12
Research for thesis or dissertation purposes only.
Au, Sp, Sum Semesters. Prereq: Permission of Instructor. Repeatable. This course is graded S/U.
First of a two-semester sequence. In this course the following areas of physiology are covered: cell membrane, neurophysiology, muscle and gastrointestinal physiology.

Au Sem. Prereq: Two semesters of Chem.

Second of a two-semester sequence. In this course the following areas of physiology are covered: cardiovascular, respiration, renal, endocrine physiology and reproduction.

Sp Sem. Prereq: Physio 3101 (PhysioCB 311).

3200 Human Physiology

Teaches the physiology of human organ systems, including the following: nervous system, muscle, gastrointestinal, cardiovascular, respiratory, renal, endocrine, and reproductive systems. This course is designed for students who are planning careers in the health sciences. This is a one-semester course.

Prereq: 6 sem cr hrs in the biological sciences.

4998 Research - Independent Study

Students will conduct hands-on laboratory research in the areas of cell biology and physiology under the direction of a faculty member in the department of Physiology and Cell Biology. This will involve learning specific laboratory techniques related to the area of the faculty member's biomedical research program, which may include biochemical, physiological, and genetic methods.

Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 4 completions. This course is graded S/U.

6101 Advanced Human Physiology I

First in two semester graduate course sequence covering Cell, Neuro, Muscle, Cardiovascular, GI, Respiratory, Renal & Endocrine Physiology.

Au Sem. Prereq: Enrollment in one of the following graduate programs: IBGP, BiomedE, Sport & Exercise Science, Pharm, Anatomy, Pathology Associate, or permission of course director. Not open to students with credit for PhysioCB 601.

6102 Advanced Human Physiology II

Second in two semester graduate course sequence covering Cell, Neuro, Muscle, Cardiovascular, GI, Respiratory, Renal & Endocrine Physiology.

Au Sem. Prereq: A grade of C- or above in Physio 6101 (PhysioCB 6101); and enrollment in IBGP, BiomedE, Sport & Exercise Science, Pharm, Anatomy, or Pathol; or permission of course director. Not open to students with credit for PhysioCB 602.

7931 Individual Studies in Physiology and Cell Biology

Reading, conferences, and laboratory work by individual arrangement with qualified students who desire more intensive and specialized study than is available in other courses. Repeatable to a maximum of 18 completions. This course is progress graded (S/U).

8101 Advanced Cardiac Physiology

Advanced presentation of cardiovascular physiology. 1hr journal club and 2hr class.

Au Sem. Prereq: Physio 6101 or 6102, or equiv, and permission of instructor.

8501 Cardiovascular Journal Club

Journal Club - presentation and discussion of pertinent research articles.

Au, Sp Sems. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

8999 Research (Independent Study)

Research for thesis or dissertation purposes only. Repeatable to a maximum of 18 completions. This course is progress graded (S/U).

Plant Pathology

1100 Exploring Plant Pathology

Basic understanding of the global trends within plant pathology, the diversity of career opportunities within the industry, planning for a career and opportunities for professional development.

2000 Molds, Mushrooms, and Mankind

Fungi have influenced human health, migration, and nutrition for thousands of years. This course studies fungal biology and the impact of fungi in society both historically and currently.

Sp Sem. GE nat sci bio course.

2001 Sick Plants and a Hungry World

Review of the interactions of plants with plant pathogens and the social, economic, and historic consequences for civilization. Entirely online course.

Au, Sp Sems. Prereq: Not open to students with credit for 201.

3001 General Plant Pathology Lecture

An introduction to plant diseases caused by fungi, bacteria, viruses, nematodes and parasitic higher plants. Video-linked to Wooster.

Au Sem. Prereq: Biology 1101 (101), 1113 (113), 1115H (115H), or Entmgy 1101 (Entomol 101). Not open to students with credit for 401 or 6001.

3002 General Plant Pathology Lab

The lab portion of general plant pathology. Lab work will include experiments involving fungi, bacteria, viruses, nematodes and parasitic higher plants. Video-linked to Wooster.

Au Sem. Prereq: Biology 1101 (101), 1113 (113), 1115H (115H), or Entmgy 1101 (Entomol 101). Concurr. 3001 (401). Not open to students with credit for 6001 or 401.

3797 Study at a Foreign Institution

Study abroad opportunities for students in plant pathology, plant health management, etc. and receive Ohio State credit for that work.

Prereq: Pre-departure course, and permission of instructor.

3920 Psychedelic Studies: Neurochemistry, Plants, Fungi, and Society

A comprehensive examination of the growing psychedelic studies field, including the relevant chemistry, ethnobotany, history, neurobiology, psychology, and emerging policy options.

4191 Internship Experiences in Plant Health Management

Individualized experiential learning opportunity designed to link theoretical classroom knowledge with practical application.

Prereq: 3001 and 3002, and permission of instructor. Prereq or concur: FAES 3191. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

4193 Undergraduate Individual Studies

Problems may be selected in the various areas of plant pathology.

Prereq: CPhR 2.5 or above, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 3 completions. This course is graded S/U.

4597 Contemporary Issues: Pesticides, Genetic Engineering, and the Environment

Contemporary, cultural, and social issues related to pesticide use, genetic engineering and sustainable plant management.

Au, Sp Sems. Prereq: Jr or Sr standing. Not open to students with credit for 597. GE cross-disciplinary seminar course.

4998 Undergraduate Research

Conducting research.

Prereq: CPhR 3.0 or above, and GPA 3.0 or above in major, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

4999 Research with Distinction

Conducting and reporting Research with Distinction (non-Honors).

Prereq: CPhR 3.0 or above, and GPA 3.0 or above in major, and submission of Research Plan to College Office, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

4999H Honors Research with Distinction

Conducting and reporting Research with Distinction Honors. Students are expected to present at the CFAES Undergraduate Research Forum and the Denman Undergraduate Research Forum.

Prereq: Honors Standing, and FAES 4590.01H, and CPhR 3.4 or above, and GPA 3.5 or above in major, and submission of Research Plan to College Office, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 3 completions. This course is graded S/U.

5003 Principles of Molecular Plant-Microbe Interactions

Molecular bases of plant-microbe interactions ranging from how microbes cause disease to how plants defend themselves. Emphasis will be given to principles of pathogen virulence, recognition of pathogen, host target proteins, defense activation and signaling.

Prereq: 3001 or Microbio 4000.01 or MolGen 4500, or permission of instructor.

5004 Current Topics Molecular Plant Microbe Interactions

Examination of current and historical literature defining the molecular aspects that drive host-microbe-environment interactions. Students will participate in journal article discussions, evaluation of literature, and grant proposal writing and peer review.

Prereq: 3001 or Microbio 4000.01 or MolGen 4500, or permission of instructor.

5010 Phytopathology

Taxonomy, molecular biology, physiology, and ecology of plant-associated bacteria that interact with plants, especially those that cause disease and affect plant health. Video-linked to Wooster.

Prereq: 3001 and 3002, or 6001 (401), or permission of instructor. Not open to students with credit for 600.01.

5020 Introductory Plant Virology

Plant virus structures, genome organizations and replication strategies. Symptoms and diagnosis of virus diseases of plants. Video-linked to Wooster.

Prereq: 3001 and 3002, or 6001 (401), and at least one course taken in Biochem, MolBiol, MolGen, or Micro; or permission of instructor. Not open to students with credit for 600.02.

5030 Plant Nematology

Introduction to plant-parasitic nematodes, with emphasis on identification, epidemiology and host interactions. Video-linked to Wooster.

Prereq: 3001 and 3002, or 6001 (401), or permission of instructor. Not open to students with credit for 636.

5040 Science of Fungi: Mycology Lecture

Fungi are some of the most important organisms on the planet. This course covers the diversity, biology, and genetics of fungi. Video-linked to Wooster.

Au Sem. Prereq: A course in the Biological Sciences, or permission of instructor. Not open to students with credit for 660.
378 Plant Pathology

5041 Science of Fungi: Mycology Lab U G 1
Fungi are some of the most important organisms on the planet. This lab covers the diversity, biology and genetics of fungi. Video-linked to Wooster.
Au Sem. Prereq: A course in the Biological Sciences, or permission of instructor. Concur: 5040. Not open to students with credit for 660.

5050 Plant Pathogenic Fungi U G 3
This course is designed to provide a more in-depth look at the filamentous plant pathogens, fungi, to better prepare graduate students planning on constructing careers in plant pathology. This course will cover the different groups of fungal pathogens with examples, their biology, and their impact in society both historically and currently.
Prereq: 3001 or 6001, or permission of instructor.

5060 Practical Experiences in Plant Health: Insects & Diseases of Plants U G 2
Plants can be attacked by a multitude of pathogens and insects. Each plant within a production region has documented pests that can negatively impact plant health. Environment and production practices can influence the outcome of interactions between pathogens and pests. This is a beginning course for students to learn how to recognize symptoms of economically important pathogens and insects.
Prereq: 5603 or Entmlgy 5603, or permission of instructor. Not open to students with credit for Entmlgy 5606. Cross-listed in Entmgy.

5110 Ecology and Management of Pathogens and Insects Affecting Trees in Forest and Urban Environments U G 3
Overview of major pathogens and insects affecting health of forest and shade trees with emphasis on diagnosis, ecology, and management. Video-linked to Wooster. Offered odd years.
Sp Sem. Prereq: Not open to students with credit for 610 or Entmgy 5110 (Entomol 461). Cross-listed in Entmgy.

5120 Diseases of Ornamental Plants U G 2
Biology and integrated control of important diseases of ornamental plants.
Sp Sem. Prereq: 3001 (401) and 3002, or 6001, or permission of instructor. Not open to students with credit for 501.

5130 Turf Diseases and Integrated Turf Health Management U G 4
A detailed study of the diseases of turfgrass, factors influencing disease severity, and specific measures for disease control such as genetic, cultural, biological, and chemical.
Prereq: 3001 (401) or 6001, HCS 3470, and Jr or Sr standing; or permission of instructor. Another option includes HCS 3470, and Jr or Sr standing; or permission of instructor. Concur: PLNTPTH 3001. Not open to students with credit for 612 and 613.

5140 Diseases of Field Crops U G 2
Key diseases that impact crop plants with emphasis on identification, management and field evaluations of management strategies. Video-linked to Wooster.
Sp Sem. Prereq: Two courses in the Biological Sciences, or permission of instructor. Not open to students with credit for 614.

5150 Fruit and Vegetable Diseases U G 2
Study the major diseases of fruit and vegetable crops with emphasis on disease diagnosis and management. Video-linked to Wooster.
Sp Sem. Prereq: 3001 (401) and 3002, or 6001, or permission of instructor. Not open to students with credit for 615.

5603 Plant Disease Management U G 3
Theory and practice of plant disease management; emphasis on integration of cultural, biological, chemical methods and plant disease resistance. Video-linked to Wooster.
Au Sem. Prereq: 3001 (401) and 3002, or 6001, or permission of instructor. Not open to students with credit for 603.

5604 Capstone Course: Problem-Based Studies in Plant Health U G 2
Students will be presented with a current plant health problem from the industry. They will gather diverse information from consultants, synthesize novel solutions, and develop implementation plans.
Prereq: Jr, Sr, or Grad standing in PlntPhl, Entmgy, or Plant Health Management. Not open to students with credit for Entmgy 5604. Cross-listed in Entmgy.

5685 Plant Disease Diagnosis U G 2
Study of field and laboratory procedures for diagnosis of plant diseases.
Su Sem, May Term. Prereq: 3001 (401) and 3002, or 6001, or permission of instructor. Not open to students with credit for 685. Repeatable to a maximum of 4 cr hrs.

6001 Advanced Plant Pathology U G 2
An advanced level of study in plant diseases caused by fungi, bacteria, viruses, nematodes and parasitic higher plants. For graduate students.
Prereq: A course in Biological Sciences, and Grad standing; or permission of instructor. Not open to students with credit for 3001 or 3002.

6002.01 Advanced Plant Pathology Lab - Viruses and Bacteria U G 1
This course is intended to prepare students to be able to implement techniques used by virologists and bacteriologists in both lab and field settings.
Prereq or concur: 5010 and 5020.

6002.02 Advanced Plant Pathology Lab - Plant Pathogenic Fungi and Nematodes U G 1
This graduate course is intended to prepare students to be able to implement techniques used by nematologists and mycologists in both lab and field settings.
Prereq or concur: 5030 and 5050.

6193 Individual Studies G 0 - 6
Projects may be selected in various areas of plant pathology or plant health management.
Prereq: CPHRT 3.0 or above, and permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

7002 Plant Disease Epidemiology G 3
Study of the dynamics of plant diseases; statistical modeling of plant disease epidemics. Video-linked to Wooster.
Sp Sem. Prereq: 3001 (401) and 3002, or 6001, and an introductory Stat course; or permission of instructor. Not open to students with credit for 702.

7003.01 Agricultural Genomics: Principles and Applications G 2
Reviews the principles of most genomic technologies, new developments in the field and emphasize their application in agriculture. Video-linked to Wooster.
Sp Sem. Prereq: MolGen 4500 (500) or Biochem 5613 (613); or permission of instructor. Concur: HCS 7003.02. Not open to students with credit for 7003 (703), or HCS 7003.

7004 Functional Biochemistry of Plant Defense G 3
This course will focus on the basis of biochemical processes as well as signaling pathways and networks involved in plant defense against microbial pathogens. Emphasis will be given to defense hormones and their signaling networks. Basic knowledge of plant physiology, microbiology, and biochemistry; or permission of the instructor required to enroll.

7300 Plant Health Management Seminar G 1
This course is designed to cover current topics in plant health management for students in the Master in Plant Health Management program. Topics and guest speakers may differ from semester to semester and will depend on student interest.
Repeatable to a maximum of 6 cr hrs. Cross-listed in Entmgy.

8300 Current Topics in Plant Pathology G 1 - 2
Readings from the current literature will be examined in detail for both technical and conceptual content. Video-linked to Wooster.
Au, Sp, Su Sem. Prereq: Grad standing. Repeatable to a maximum of 6 cr hrs.

8300.01 Molecular Fungal Biology, Genetics, and Genomics G 2
Designed to explore the biology and genetics of fungal microorganisms. Topics include: fungal reproduction for the major clades, molecular underpinnings of growth, development, and interactions with diverse hosts and whole-genome based studies of fungi, including proteomic and systems biology analyses. Primarily literature based.
Prereq: 5040.

8300.02 Host Resistance: History and Future Implications for Deployment G 2
Focuses on the development and knowledge of host resistance and pathogenic diversity in determining what type of resistance should be deployed and explore factors that may impact future success of new genetically modified techniques.
Prereq: 5603 or 5140; or permission of instructor.

8400 Molecular Bases of Plant Host-Microbe Interactions G 3
Introduction to plant-host-pathogen interactions, with emphasis on molecular bases of pathogen virulence and host resistance. Video-linked to Wooster.
Sp Sem. Prereq: 5010 (600.01), 5020 (600.02), 5030 (630), and 5040 (660); or permission of instructor. Not open to students with credit for 602, 841, 842 and 843.

8899 Plant Pathology Seminar G 1
Covers various ongoing research topics presented by current graduate students and invited speakers. Video-linked to Wooster.
Au, Sp Sem. Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

8901 Mentored Teaching in Plant Pathology G 1 - 3
Students work with faculty members to gain intensive hands-on and mentored experiences focused on direct interaction with students and on the scholarly aspects of teaching.
Prereq: Grad standing and completion of OSU Orientation on Teaching. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

8902 Mentored Extension/Outreach Teaching in Plant Pathology G 1 - 3
Provides graduate students interested in Extension/Outreach programs with hands-on experience in developing and delivering extension educational programs and materials.
Prereq: Grad standing. Repeatable to a maximum of 5 cr hrs or 5 completions. This course is graded S/U.

8999 Plant Pathology Research G 1 - 15
Research for thesis of dissertation purposes only.
Prereq: Grad standing. Repeatable. This course is graded S/U.

Polish
1101 Elementary Polish I
Introduction to Polish; development of speaking, listening, reading, and writing skills in cultural context. Not open to native speakers of this language through regular course enrollment or EM credit, or to students with 2 or more years of study in this language in high school. Prereq: Not open to students with credit for 101. This course is available for EM credit. GE for lang course. FL Admis Cond course.

1102 Elementary Polish II
Continued development of speaking, listening, reading, and writing skills in cultural context. Not open to native speakers of this language through regular course enrollment or EM credit. Prereq: 1101 (101.01). Not open to students with credit for 102. This course is available for EM credit. GE for lang course. FL Admis Cond course.

1103 Intermediate Polish I
Continued development of speaking, listening, reading, and writing skills in cultural context. Closed to native speakers of this language. Prereq: 1102 (102.01). Not open to students with credit for 103. This course is available for EM credit. GE for lang course.

2104 Intermediate Polish II
Increasing functional ability in speaking, listening, reading, and writing practice, vocabulary-building; new grammar structures; start developing higher-level language skills in Polish. Not open to native speakers of this language. Prereq: 1103 (104.01). Not open to students with credit for 407.01.

3101 Advanced Polish I
Further develop speaking, listening, reading, and writing skills and grammar competence. Prereq: 2104. Not open to students with credit for Slavic 5194 (Au13, Cretu).

3102 Advanced Polish II
Further develop speaking, listening, reading, and writing skills and grammar competence. Prereq: 3101. Not open to students with credit for Slavic 5194 (Sp15, Advanced Polish).

Political Science

1100 Introduction to American Politics
Introduction to American politics, the institutions and processes which create public policy, the strengths and weaknesses of the American political systems. Not open to students with credit for 3100 (300), 101, or 101H. This course is available for EM credit. GE soc sci orgs and polities course. SS Admis Cond course.

1100H Introduction to American Politics
Introduction to American politics, the institutions and processes which create public policy, and the strengths and weaknesses of the American political systems. Prereq: Honors standing, or permission of instructor. Not open to students with credit for 3100 (300), 101, or 101H. GE soc sci orgs and polities course. SS Admis Cond course.

1165 Introduction to Politics
Introduction to politics and political science: power, democracy and authoritarianism, political participation, the state, political institutions, subfields of the discipline, and political research methodology. Prereq: Not open to students with credit for 165 or 165H. GE soc sci orgs and polities course. SS Admis Cond course.

1200 Introduction to Comparative Politics
Introduction to modern nation-states outside the United States: problems of state- and nation-building, representation, conflict, and making of government policy in selected countries. Prereq: Not open to students with credit for 100 or 100H. This course is available for EM credit. GE soc sci orgs and polities and diversity global studies course.

1300 Global Politics
Cooperation and conflict in world politics. Covers basic theories of international relations and key issues, including security, political economy, international organizations, and the environment. Prereq: Not open to students with credit for 145 or 145H. GE soc sci human, nat, and econ resources and diversity global studies course.

2150 Voters and Elections
Study of US elections, focusing on voter attitudes, group behavior, and political participation. Prereq: Not open to students with credit for 201 or 201H. GE soc sci indivs and groups course. SS Admis Cond course.

2194.01 Group Studies in American Politics
Group studies in American politics. Repeatable to a maximum of 6 cr hrs or 2 completions.

2194.02 Group Studies in Comparative Politics
Group studies in comparative politics. Repeatable to a maximum of 6 cr hrs or 2 completions.

2194.03 Group Studies in International Politics
Group studies in international politics. Repeatable to a maximum of 6 cr hrs or 2 completions.

2194.04 Group Studies in Political Theory
Group studies in political theory. Repeatable to a maximum of 6 cr hrs or 2 completions.

2194.05 Group Studies in Public Policy
Group studies in public policy. Repeatable to a maximum of 6 cr hrs or 2 completions.

2300 American Foreign Policy
The role of the United States in world politics since the Second World War, emphasizing structural change in economic and political-military relations. Prereq: Not open to students with credit for 245 or 245H. GE soc sci orgs and polities and diversity global studies course.

2367 Contemporary Issues in American Politics
Discussion of and critical writing about controversies in contemporary American politics; aimed at fostering analytical abilities in reading comprehension, oral, and written expression. Prereq: 101 or 300, and English 110 or 111, and Soph standing; or permission of instructor. Not open to students with credit for 367.01 or 367.01H. GE writing and comm course: level 2 and soc sci orgs and polities course.

2400 Introduction to Political Theory
An introduction to the field of political theory through classic and contemporary texts and selected case studies. Prereq: Not open to students with credit for 210 or 210H. GE soc sci orgs and polities course. SS Admis Cond course.

2400H Introduction to Political Theory
An introduction to the field of political theory through classic and contemporary texts and selected case studies. Prereq: Honors standing, or permission of instructor. Not open to students with credit for 210 or 210H. GE soc sci orgs and polities course.

3001 Economy, Polity, and Community
Examines how different ways of thinking about human nature shape our understanding of philosophy, politics, and economics. Prereq: Econ 2001.XX or 2002.01 or 2002.03H; and Philos 2400 or PoliSci 2400 or 2400H; and Econ 5001 or PoliSci 2500 or 5540 or 4553 or 4553H; and Philos 3000; and Econ 3400 or IntSects 3400 or PoliSci 3780 or 3780H; and PoliSci 4280 or 4380. Not open to students with credit for Econ 3001 or Philos 3001. Cross-listed in Econ and Philos.

3002 Tradition, Progress, and Utopia
Examines how different ways of thinking about social and political change shape our understanding of philosophy, politics, and economics. Prereq: Econ 2001.XX or 2002.01 or 2002.03H; and Philos 2400 or PoliSci 2400 or 2400H; and Econ 5001 or PoliSci 2500 or 5540 or 4553 or 4553H; and Philos 3000; and Econ 3400 or IntSects 3400 or PoliSci 3780 or 3780H; and PoliSci 4280 or 4380. Not open to students with credit for Econ 3002 or Philos 3002. Cross-listed in Econ and Philos.

3115 Introduction to the Policy Process
Introduction to the workings of policy-making processes within governments, and the use of social science reasoning to evaluate and improve the content of policies. Prereq: Not open to students with credit for 305.

3170 Political Psychology
Introduces students to political psychology, its development from parent disciplines, its topics and problems, its research results and methods, and their applications to current affairs. Prereq: Not open to students with credit for 403 or Psych 403.

3191 Political Science Internship
Combines experience in political institutions or policy processes with analysis of that experience. Prereq: Permission of the department. Repeatable to a maximum of 4 cr hrs. This course is graded S/U.

3220 Politics of the Developing World
A general introduction to the theoretical and substantive literature dealing with the historical development and contemporary characteristics of the new states of Asia and Africa. Prereq: Not open to students with credit for 541. GE soc sci human, nat, and econ resources and diversity global studies course.

3225 Post-Conflict Reconstruction
Examines why some countries recover quickly from war while other countries remain poor and undeveloped. Examines current explanations of post-conflict development; provides background knowledge and tools to evaluated explanations. GE soc sci human, nat, and econ resources and diversity global studies course.

3240 Political Violence
This course will expose students to major theoretical debates and broad empirical patterns of interstate conflict during the post-World War II era.

3245 Radicalization, Deradicalization, Countering Violent Extremism
Students will gain in-depth knowledge about the multifaceted processes of radicalization and deradicalization and the various approaches to both that have been developed in countering violent extremism policies.

3280 Politics of Markets
Introduction to the interaction between politics and markets, in theory and in practice. We study how markets are embedded in political and social institutions, and how political systems and markets are organized across time and space. Prereq: Not open to students with credit for 4280.
### 380 Political Science

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<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Prerequisites</th>
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</thead>
<tbody>
<tr>
<td>3290</td>
<td>Comparative Public Policy</td>
<td>U 3</td>
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<td>3310</td>
<td>Defense Policy and National Security</td>
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<td>Honors Defense Policy and National Security</td>
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<td>3380</td>
<td>Political Analysis of International Economic Relations</td>
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<td>3420</td>
<td>Political Theories of Democracy</td>
<td>U 3</td>
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<td>3430</td>
<td>Political Theories of Freedom</td>
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<td>3440</td>
<td>Political Theories of Justice</td>
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<td>3450</td>
<td>Ethics and Public Policy</td>
<td>U 3</td>
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<td>3500</td>
<td>Political Games: Rational Choice Theory and the Study of Politics</td>
<td>U 3</td>
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<td>3549</td>
<td>Survey Research in Political Science</td>
<td>U 3</td>
<td></td>
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<tr>
<td>3596</td>
<td>Nationalism and Ethnicity</td>
<td>U 3</td>
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<td>3780</td>
<td>Data Literacy and Data Visualization</td>
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<td>3785</td>
<td>Data Science for the Social and Behavioral Sciences</td>
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<td>3798</td>
<td>Field Research Methods for Politics &amp; Development in Africa: Education Abroad in Malawi</td>
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<td>Political Manipulation</td>
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<td>Identity Politics</td>
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<td>American State Politics</td>
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<td>U.S. Congress</td>
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<td>Bureaucracy and Public Policy</td>
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<td>Governing Urban America</td>
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<td>Law and Politics</td>
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<td>American Supreme Court</td>
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<td>Supreme Court Decision Making</td>
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<td>3925</td>
<td>American Constitutional Law</td>
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This course serves as an introduction to public policy in comparative perspective; its focus is on wealthy democracies. The first part of the course explores broad theories about how and why public policy differs so dramatically across countries. The second part of the course focuses on cross-national differences across specific policy domains.

This course addresses some of the basic issues surrounding national security policy. The primary focus is on policy issues related to the use of force between and within countries. The goal of the course is to provide the analytical tools and factual knowledge that are necessary to identify and assess current and future threats to national security.

This course addresses some of the basic issues surrounding national security policy. The primary focus is on policy issues related to the use of force between and within countries. The goal of the course is to provide the student with the analytical tools and factual knowledge that they will need to identify and assess current and future threats to national security.

Examine the relationship between political and economic events in the international system; topics include global interdependence, inequality, scarce resources, and periphery nation strategies.

An examination of theories of democracy, focusing on normative and descriptive dilemmas such as participation versus liberty in democratic societies.

Provides an overview of the various ways in which the value of human freedom has been understood and pursued in political life.

Focuses on debates among political theorists about the meaning of justice; "What is justice?" and "How might we order our world fairly?"

The conducting of public opinion polls.

Explores socio-political identities, especially ethnicity and nationality, from a comparative perspective. Drawing upon theories from political science, psychology, anthropology, sociology, and economics, we will study the origins and characteristics of these identities, as well as their consequences for democracy, economic development, and violent conflict.

Introduction to the tools of data analysis in political science, with an emphasis on data visualization.

Most social science debates can be addressed with data, and sources of data are growing exponentially. This course introduces students to tools of data analysis and principles behind their use in the context of social-science applications.

Introduction to new issues in data science, including big data, machine learning, network interdependencies, and automated extraction of meaning from widely varied sources of data.

This education abroad course focuses on research methodologies used to understand political and economic outcomes in Africa. The course will be especially useful for undergraduate students who plan to conduct research or design programs and interventions in the developing world.

Examines how political actors manipulate the rules and the salience and availability of information to shift political outcomes in their favor.

Explores who controls the meaning of identity in society; examining identity from the perspective of liberal, sociological, and social psychological, structuralist, and institutionalist theories.

Establishment of a working definition of political leadership, investigation of recruitment of leaders, analysis of major functions political leaders perform, and assessment of consequences of political leadership.

An examination of the American presidency, emphasizing the contemporary role of the president, the institutionalized presidency, and theories of presidential behavior.

Analysis of legislators and legislators, with a focus on the U.S. Congress and some attention to state legislatures and representative assemblies in other countries.

An examination of the American presidency, emphasizing the contemporary role of the president, the institutionalized presidency, and theories of presidential behavior.

An examination of political identities, especially ethnicity and nationality, from a comparative perspective.

An examination of the American presidency, emphasizing the contemporary role of the president, the institutionalized presidency, and theories of presidential behavior.

A survey of previous episodes of major reform in American politics, focusing on strategies used by reformers, evaluating the policy and political impact of their reforms, and applying lessons from these cases to contemporary political problems.

Comparative analysis of politics in the American states.

Examination of state politics with special reference to Ohio.

This course will examine the major problems facing urban communities in the 21st Century; the economic, social, and political forces that have historically shaped - and continue to influence - their development; the role of government in addressing urban problems; and the major participants and stakeholders in city politics.

This course will examine the major problems facing urban communities in the 21st Century; the economic, social, and political forces that have historically shaped – and continue to influence – their development; the role of government in addressing urban problems; and the major participants and stakeholders in city politics. Prereq: Honors standing. Not open to students with credit for 4127 (505).

This course focuses on the U.S. Supreme Court as an institution and emphasizes the ways in which its formal and informal norms and structures shape the nature and content of the law the Court makes.

Study of explanations for Supreme Court decisions; use of those explanations and independent research to predict justices’ positions in current cases.

Assessment of the contemporary realities of U.S. governmental authority as interpreted by the judiciary; emphasis on judicial review, case and controversy requirements, and legislative and executive power.
4136 Civil Liberties U 3
An examination of civil liberties decisions by American courts, their legal and political bases, and their effects on government and society.
Prereq: Not open to students with credit for 519.

4137 The Politics of Legal Decision Making U 3
An examination of the literature relating social-scientific theories and research to the law, focusing on the criminal justice system.
Prereq: Not open to students with credit for 515.

4138 Women and the Law U 3
An examination of the legal status of women and the ways in which law affects the situation of women in American society.
Prereq: Not open to students with credit for 514.

4139 Gun Politics U 3
Examination of the arguments and issues surrounding gun control in the United States.
Prereq: Not open to students with credit for 516.

4139E Gun Politics U 3
Examination of the arguments and issues surrounding gun control in the United States.
Prereq: Not open to students with credit for 4139 (516).

4140 Black Politics U 3
Economic, political, and social constraints on the development of black political power; the efforts made by black people in recent times to organize for effective political action.
Prereq: Not open to students with credit for 504 or AFAnASt 4504 (504). Cross-listed in AFAnASt 4504.

4143 Race, Ethnicity, and American Politics U 3
The goal of this course is to explore, discuss, and better understand the relationship between perceptions of racial identity, attributions of racial difference, and politics, broadly defined.

4150 American Political Parties U 3
Theories of political parties, party organization, individual voting behavior, nomination and electoral politics, the party in government.
Prereq: Not open to students with credit for 575. GE soc sci orgs and polities course.

4152 Campaign Politics U 3
The organization and strategy of American political campaigns; practical politics seen in the light of knowledge about political behavior and public opinion.
Prereq: Not open to students with credit for 502.

4160 Public Opinion U 3
Origins and nature of political attitudes; the content of public opinion; the public's influence on policy-making.
Prereq: Not open to students with credit for 503.

4164 Political Participation and Voting Behavior U 3
A study of political participation and its correlates, determinants of the vote decision, and analysis of recent American elections.
Prereq: Not open to students with credit for 574.

4165 Media and American Politics U 3
This course presents the modern study of the media and its role in the American political system, including supply and demand pressures and how they affect media content, its effects on citizens, and the emerging role of social media in politics.
Prereq: Not open to students with credit for 509.

4191 Internship U 0 - 10
Combines experience in political institutions or policy processes with analysis of that experience in light of relevant scholarly literature.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 3 completions.

4193 Individual Studies U 1 - 10
Students will devote their time to special projects including papers, exams and practical political experience.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

4200 Politics of Modern Democracies U 3
A survey of the basic institutions and politics of modern democracies, with emphasis on representationalism and democratic, stability.
Prereq: Not open to students with credit for 535.

4210 Politics of European Integration U 3
A survey of the politics of European integration since the Second World War; topics include theories of political integration, institutions of the EU, its policies and decision making, common currency, and internal and external relations.
Prereq: Not open to students with credit for 528.

4218 Russian Politics U 3
Survey of the politics of Russia and the former soviet states with emphasis on democratization, economic reform, institutional development, elites, mass behavior, and ideology.
Prereq: Not open to students with credit for 533.

4231 China: State and Society U 3
The 21st-century rise of China and its effects on Chinese politics and society.
Prereq: Not open to students with credit for 536.

4240 Latin American Politics U 3
A study of political processes, institutions, and groups in Latin America, with emphasis on constitutional, geographical, social, and economic environments in which they operate.
Prereq: Not open to students with credit for 540.01.

4242Incomplete Democracies U 3
Explores various forms of violence including electoral violence and political assassination, organized crime, police brutality, and other human rights abuses in Latin America.
Prereq: Soph standing or above. Not open to students with credit for 542 or IntStds 4242 (542). Cross-listed in IntStds.

4245H Democratic Erosion U 3
How do democracies become less democratic? This course will explore the causes and consequences of democratic breakdown in countries around the world and over time.
Prereq: Honors standing, or permission of instructor.

4250 African Politics U 3
An introductory survey of Sub-Saharan African politics from the pre-colonial period to the contemporary era. It will examine the common themes, issues, and trends that shape politics and development across forty-nine countries. Students will gain an understanding of how context shapes political behavior and how historical and political forces have influenced African politics.
Prereq: Not open to students with credit for 4597.02 (Au13, African Politics), 4250H, or AFAnASt 4250. GE soc sci orgs and polities and diversity global studies course. Cross-listed in AFAnASt.

4270 The Canadian Political System U 3
The Canadian political system, including institutional, behavioral, socio-economic, cultural, and ideological components, often in comparison with the United States' political system.
Prereq: Not open to students with credit for 527.

4285 The Comparative Politics of the Welfare State U 3
An examination of the arguments and issues surrounding welfare capitalism including social, economic, and institutional considerations shaping welfare policy; and contemporary welfare reform as an exercise in reallocation, reorganization, and budget-cutting.
Prereq: Not open to students with credit for 578.

4300 Theories of International Relations U 3
Various theories of world politics, such as realism, liberalism, long cycles, domestic and bureaucratic politics, and decision-making level theory.
Prereq: 1300 (145). Not open to students with credit for 550.

4305 International Theory U 3
Various theories of world politics, such as realism, liberalism, long cycles, domestic and bureaucratic politics, and decision-making level theory.
Prereq: 1300 (145).

4310 Security Policy U 3
National security and military policy issues and trends since 1945; covers containment, deterrence, Vietnam, nuclear weapons, terrorism, and globalization.
Prereq: Not open to students with credit for 552.

4315 International Security and the Causes of War U 3
Examines various issues regarding international conflict and cooperation, including theories of strategic interaction and the causes of war.
Prereq: Not open to students with credit for 544.

4318 The Politics of International Terrorism U 3
Examines international terrorism's concepts and actors, the motivations and causes of terrorism, the experience of the United States, and tensions between freedoms and security.
Prereq: Not open to students with credit for 548.

4320 Strategies for War and Peace U 3
Examination of how political leaders make decisions, emphasizing such issues as leaders' reasoning processes and the impact of public opinion and foreign policy bureaucracies.
Prereq: Not open to students with credit for 545.

4326 Russian Foreign Policy U 3
Basic concepts about, and choices in, Russian foreign policy; development and presentation of patterns of relations with key nations; major problems in future relationships.
Prereq: Not open to students with credit for 555.

4327 Politics in the Middle East U 3
Politics of Arab-Israeli relations, Persian Gulf, Islamic fundamentalism, and oil; processes of change and their effects on governments and international relations.
Prereq: Not open to students with credit for 546.

4330 Global Governance U 3
Examination of emergence and form of global governance, including questions of legitimation, democratization, and enforcement; as well as collective security, humanitarian intervention, and proliferation.
Prereq: Not open to students with credit for 556.
382 Political Science

4331 The United Nations System U 3
Activities and potential of the United Nations system in promoting economic well-being, environmental management, resource sharing, social justice, and control of violence. Prereq: Not open to students with credit for 551.

4332 Politics of Globalization U 3
Examines globalization's origins, impacts on human welfare, and political conflicts that arise from it, including actions of governments, multinational corporations, and the anti-globalization movement. Prereq: Not open to students with credit for 557.

4335 International Environmental Politics U 3
Theories and debates over sustainable development, environment, and security, and effectiveness of international regimes with a focus on international fisheries management and global climate change. Prereq: Not open to students with credit for 559.

4381 Comparative International Political Economy U 3
A survey of foreign economic policies followed by European and other advanced industrial economies since the Napoleonic Wars, with a special emphasis on Britain, France, Germany, the United States, and Japan. Prereq: Not open to students with credit for 554.

4385 Quantitative Studies of International Conflict U 3
Acquaints students with the quantitative literature on conflict and war. Prereq: 4781 or equiv. Not open to students with credit for 4385E.

4385E Quantitative Studies of International Conflict U 3
Acquaints students with the quantitative literature on conflict and war. Prereq: 4781 or equiv. Not open to students with credit for 4385.

4455 Human Rights U 3
Examines human rights, including the United Nations Declaration on Human Rights; coercive enforcement of rights; as well as hunger, violence, persecution, and economic rights. Prereq: Not open to students with credit for 564.

4465 Feminist Political Theory U 3
Examines concepts in feminist political theory including the articulation of feminism, the subjects of feminist theory, the relation of race, class and sexuality to gender experience, and the use of feminist theory to transform conceptions of justice. Prereq: Not open to students with credit for WGSSt 4465. Cross-listed in WGSSt.

4553 Game Theory for Political Scientists U 3
Provides entry-level understanding of the basic concepts of game theory and how these concepts are applied to the study of political phenomena. Prereq: Not open to students with credit for 587.

4553H Game Theory for Political Scientists U 3
Provides entry-level understanding of the basic concepts of game theory and how these concepts are applied to the study of political phenomena. Prereq: Not open to students with credit for 4553 (587).

4597.01 International Cooperation and Conflict U 3
An examination of the relationships industrialized countries have with each other and developing nations; focus on potential for cooperation and conflict. Prereq: Jr or Sr standing. Not open to students with credit for 597.01 or 597.01H. GE cross-disciplinary seminar.

4597.02 Political Problems of the Contemporary World U 3
Critical political problems of industrialized and developing societies, including governmental legitimacy, conflict and violence, social welfare, equality, and economic development. Prereq: Jr or Sr standing. Not open to students with credit for 597.02, 597.02E, or 597.02H. GE cross-disciplinary seminar course.

4597.02H Political Problems of the Contemporary World U 3
Critical political problems of industrialized and developing societies, including governmental legitimacy, conflict and violence, social welfare, equality, and economic development. Prereq: Honors standing or permission of instructor; and Jr or Sr standing. Not open to students with credit for 597.02, 597.02H, or 597.02E. GE cross-disciplinary seminar course.

4780 Thesis Research Colloquium U 3
Designed for Political Science majors writing senior theses. We will study the elements of a successful research paper including how to formulate a question, how to identify the right method for investigating it, and how to conduct research. Concur: Second semester Jr standing, or permission of instructor.

4781 Data Analysis in Political Science I U 3
Covers basic techniques for analyzing data in political science. Prereq: Math 1151 and one course in PolitSc at the 3000 level or above; or permission of instructor. Not open to students with credit for 485, 4781H (485H), 585, or 585H. GE data analysis course.

4782 Data Analysis in Political Science II U 3
Covers advanced techniques for analyzing data in political science. Prereq: Math 1151 and 4781 (485), or permission of instructor. Not open to students with credit for 586.

4784 Complexity Science and the Study of Politics U 3
Familiarizes students with agent-based models and complexity science to better understand political behavior. Prereq: 3780 or 4781, or permission of instructor. Not open to students with credit for 4784E.

4784E Complexity Science and the Study of Politics U 3
Familiarizes students with agent-based models and complexity science to better understand political behavior. Prereq: 3780 or 4781, or permission of instructor. Not open to students with credit for 4784.

4891 Topics in American Politics U 3
Selected topics in American politics; topics vary by section and instructor. Repeatable to a maximum of 6 cr hrs.

4892 Topics in Comparative Politics U 3
Selected topics in comparative politics; topics vary by section and instructor. Repeatable to a maximum of 6 cr hrs.

4893 Topics in International Politics U 3
Selected topics in international politics; topics vary by section and instructor. Repeatable to a maximum of 6 cr hrs.

4893H Honors Seminar in International Politics U 3
Intensive study of selected political science topics and issues in a seminar format; topics vary. Prereq: Honors standing or permission of instructor. Repeatable to a maximum of 12 cr hrs.

4894 Topics in Political Theory U 3
Selected topics in political theory; topics vary by section and instructor. Repeatable to a maximum of 6 cr hrs.

4894H Honors Seminar in Political Theory U 3
Intensive study of selected political science topics and issues in a seminar format; topics vary. Prereq: Honors standing or permission of instructor. Repeatable to a maximum of 12 cr hrs.

4920H Politics in Film and Television U 3
Political films and TV shows often convey an understanding of the political world. How films portray the political process may influence society's attitudes toward politicians and government institutions. Students will compare the portrayal of politics in films and TV to the reality as understood through political science. This is not part of the FilmStd major and does not count toward requirements. Prereq: Honors standing. Not open to students with credit for 4920.

4940 The Politics of Immigration U 3
Provides overview of international migration phenomenon: patterns of international migration, reasons for immigration, acceptance of immigrants by governments and public, dynamics of anti-immigrant sentiment. Prereq: Not open to students with credit for 543.

4998 Undergraduate Research in Political Science U 1 - 10
Undergraduate research in variable topics. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

4999 Undergraduate Thesis Research U 2 - 4
Thesis research with thesis adviser. Minimum of two semesters required of candidates for BA with research distinction in political science. Must meet standards for graduation with research distinction. Prereq: Sr standing, and enrollment in PolitSc major, and permission of instructor. Repeatable to a maximum of 12 cr hrs or 4 completions. This course is graded S/U.

4999H Honors Thesis Research U 2 - 4
Honors thesis research with thesis adviser. Minimum of two semesters required of candidates for BA with distinction in political science. Prereq: Honors standing, and Sr standing, and enrollment in Political Science major, and permission of instructor. Repeatable to a maximum of 12 cr hrs or 4 completions. This course is graded S/U.

5000 Quantum Mind and Social Science U G 3
Examines the growing, if still speculative, possibility that consciousness and therefore society are macroscopic quantum mechanical phenomena. If that's right, today's social sciences are based upon a fundamental mistake since they assume that human beings are classical machines. Replacing classical assumptions in social science with quantum ones would be a revolution in thought. Prereq: Permission of instructor.

5411 Justice, Sin, and Virtue: Ancient & Medieval Political U G 3
Thought

This course focuses on foundational texts in western political thought. From ancient Athens, republican and imperial Rome, the Christian middle ages, and the Italian Renaissance. These works deal with themes that remain central in modern political life, including social justice, political action and religious faith, and the struggle between civic virtue and self-interest. Prereq: Not open to students with credit for 4411 (470), or 6411 (670).
5412 Life, Liberty, and Property: Early Modern Political Thought

Why do we have government? What are the proper limits of its authority? What should we do when its demands conflict with our moral or religious beliefs? These questions lie at the center of early modern political thought, and gave rise to the idea of the social contract.
Prereq: Not open to students with credit for 4412 (471) or 6412 (671).

5413 Democracy, Equality & Revolution: 19th Century Political Thought

This course examines some of the earliest and most influential attempts to wrestle with the practical implications of living in a world where people were not only considered equal in theory, but were becoming equal in fact. Topics of discussion will include the relationship between liberty and equality, individualism and conformity, alienation and exploitation, and morality and power.
Not open to students with credit for 6413 (672) or 4413 (472).

5414 Liberalism, Totalitarianism, and Empire: 20th Century Political Thought

The 20th century was a time of unprecedented transformations: world wars, genocide, the collapse of colonialism and the spread of capitalism. This course examines the political theories that contributed to these developments as well as efforts to understand these changes.
Prereq: Not open to students with credit for 4414 (473) or 6414 (673).

5797 Study at a Foreign Institution

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Repeatable to a maximum of 30 cr hrs or 15 completions. This course is progress graded.

6194.01 Contemporary Political Problems

Contemporary political problems.
Repeatable to a maximum of 18 cr hrs or 6 completions.

6194.02 Contemporary American Political Problems

Contemporary political problems.
Repeatable to a maximum of 18 cr hrs or 6 completions.

6194.03 Contemporary Comparative Political Problems

Contemporary political problems.
Repeatable to a maximum of 18 cr hrs or 6 completions.

6194.04 Contemporary International Political Problems

Contemporary political problems.
Repeatable to a maximum of 18 cr hrs or 6 completions.

6194.05 Contemporary Theoretical Political Problems

Contemporary political problems.
Repeatable to a maximum of 18 cr hrs or 6 completions.

6350 Politics of Global Climate Change

Climate change is among the most important challenges of our time and is the subject of heated political debate within and across countries. This course provides an advanced overview of the politics of climate change, with an emphasis on its international and global dimensions.
Prereq: Grad standing.

7000 Foundations of Political Science

Introductory study of diverse efforts to ground knowledge of politics, positivist, and post-positivist views of science, sources of formal rigor, and interpretation and evaluation.
Prereq: Not open to students with credit for 790.

7095.01 Teaching Political Science

Examination of issues in teaching political science in colleges and universities, and preparation for teaching careers.

7095.02 Prospectus and Professional Development

Advanced course to prepare graduate students to write dissertation prospectus.

7100 Foundations of American Politics

Introduction to central research areas and literature of the field of American politics.
Prereq: Not open to students with credit for 709.

7120 Legislative Politics

Analysis of the functioning and policy product of American legislatures; intensive reviews of selected aspects of the legislative literature to be conducted.
Prereq: Not open to students with credit for 717.

7125 Federalism

Examination of how multi-level governance shapes the incentives of political elites and affects the ability of voters to hold officials accountable. Covers both American and comparative politics topics and substantive questions dealing with political institutions and mass behaviors.
Prereq: Not open to students with credit for 704.

7140 Race and Ethnicity

An examination of the role of race and ethnicity in American politics, including public opinion, political incorporation, electoral behavior, and minority representation.
Prereq: Not open to students with credit for 707.01 or 707.02.

7160 Public Opinion

Intensive analysis of literature on selected topics in public opinion.
Prereq: Not open to students with credit for 703.

7193.01 American Politics

Individual studies in political science; student work is evaluated by papers and/or special examinations.
Repeatable to a maximum of 36 cr hrs or 36 completions. This course is graded S/U.

7193.02 Comparative Politics

Individual studies in political science; student work is evaluated by papers and/or special examinations.
Repeatable to a maximum of 36 cr hrs or 36 completions. This course is graded S/U.

7193.03 International Politics

Individual studies in political science; student work is evaluated by papers and/or special examinations.
Repeatable to a maximum of 36 cr hrs or 36 completions. This course is graded S/U.

7193.04 Political Theory

Individual studies in political science; student work is evaluated by papers and/or special examinations.
Repeatable to a maximum of 36 cr hrs or 36 completions. This course is graded S/U.

7193.05 Political Methodology

Individual studies in political science; student work is evaluated by papers and/or special examinations.
Repeatable to a maximum of 36 cr hrs or 36 completions. This course is graded S/U.

7200 Basic Theories in the Study of Comparative Politics

Examination of such concepts and theories as structural-functional analysis, general systems theory, and sociocultural systems as determinants of governmental structures.
Prereq: Not open to students with credit for 725.

7205 Democratic Transitions

Theoretical examination of the dynamics of the transition from authoritarian to democratic regimes, with special attention to southern Europe and South America.
Prereq: Not open to students with credit for 744.

7206 Comparative Political Institutions

Study of state building process, regime types, and contemporary governmental institutions from a broad cross-national perspective.
Prereq: Not open to students with credit for 776.

7208 State-Building

Where do national states come from? How strong are they? Course surveys contemporary answers to both questions, examining political, military-strategic, ecological, and cultural explanations for formation and development of national states in Europe.
Prereq: Not open to students with credit for 728.

7220 The Politics of the Developing World

Theories, approaches, and methods in the analysis of political life in Asia, Africa, and Latin America; discussion of selected case and cross-national studies with theoretical importance.
Prereq: Not open to students with credit for 741.

7260 Authoritarian Politics

Familiarizes students with basic theoretical and empirical approaches to the study of authoritarian politics; introduces classic and cutting edge research.

7280 Comparative Political Economy

A graduate-level course designed to survey contemporary theories on the interaction between economic policies, domestic institutions, the international economy, and their consequences on the macroeconomy.
Prereq: Not open to students with 1 completion for 7280 (735). Repeatable to a maximum of 6 cr hrs. Cross-listed in Econ 6745.

7281 The Political Economy of Income Inequality, Volatility, and Mobility

Examines patterns, political and institutional foundations, and consequences of income inequality, volatility, and mobility, plus dynamic aspects of income distributions.
Prereq: Not open to students with credit for 781.

7300 Theories of International Relations

Examination of such basic concepts and theories as equilibrium models, balance of power, national interest, geopolitical configurations.
Prereq: Not open to students with credit for 745.

7310 Security Policy

Theories of conflict and war causation and an assessment of their durability in a new era of world politics.
Prereq: Not open to students with credit for 752.

7312 Critical Security Studies

Introduces students to the Political Science subfield of Critical Security Studies (CSS).
Prereq: Not open to students with credit for 6194.03 (Sp15, Critical Security).
384 Political Science

7315 Conflict and Peace  G  3
Sources and types of social conflict with special attention to international violence; causes of war; their avoidance and control.
Prereq: Not open to students with credit for 751.

7317 Consequences of War  G  3
Examines theoretical and empirical literature in Political Science on war, peace, and security with focus on the legacies of war.

7334 International Organization: Rationalist Approaches  G  3
Comprehensive view of international governmental, non-governmental, and business organizations; their roles in solving problems such as poverty, war, pollution; particular attention to the United Nations system.
Prereq: Not open to students with credit for 759.

7336 International Order  G  3
Discussion of the leading books written on the subject of international order.

7340 Social Theories of International Relations  G  3
An examination of the main themes, debates, and social theories of world politics.
Prereq: Not open to students with credit for 748.

7375 Quantitative Studies of International Security  G  3
Survey of quantitative empirical studies of war, civil war, militarized disputes, and conflict.
Prereq: 7553 (786). Not open to students with credit for 849.

7380 Theories of International Political Economy  G  3
Contemporary literature in international political economy; its ties to classical schools of thought in international relations and political economy; points of contention between them.
Prereq: Not open to students with credit for 753.

7400 Fundamental Concepts in Political Theory  G  3
A graduate survey of the scope, concepts, and methods of political theory, examining important debates throughout political science through works of both canonical and contemporary thinkers.
Prereq: Not open to students with credit for 763.

7410 Radical Cosmopolitanism  G  3
The notion of cosmopolitanism has enjoyed renewed interest among political and critical theorists. This course engages critically with Immanuel Kant’s classic account and examines its roots and anthropological commitments seriously and puts it in dialogue with colonial and post-colonial intellectuals, including W. E. B. Du Bois who thought systematically about justice beyond the nation.
Prereq: Not open to students with credit for 7499 (Au 2015).

7499 Selected Topics in Political Theory  G  3
Intensive joint readings and discussions concentrating upon one of the major themes, problems, or movements in political theory; topic information available from instructor.
Prereq: Not open to students with credit for 706.

7551 Quantitative Political Analysis: I  G  3
Explication, interpretation, and application of techniques for quantitative analysis of political data; descriptive and inferential statistics, with emphasis on bi-variate analysis.
Prereq: Not open to students with credit for 685.

7552 Quantitative Political Analysis: II  G  3
Descriptive and inferential statistics with emphasis on multivariate analysis; additional topics offered as desired and possible: scaling, index construction, sampling, measurement reliability.
Prereq: 7551. Not open to students with credit for 668.

7553 Quantitative Political Analysis: III  G  3
A continuation of subjects begun in 7552, including such topics as scaling, index construction, sampling, and measurement reliability.
Prereq: 7561 and 7562. Not open to students with credit for 786.

7555 Causal Mechanisms  G  3
A survey of causal mechanisms in political science, including models of processes, equilibration, optimization, learning, integration, aggregation, evolution, complexity, and universal, contextual, and synthetic models.

7560 Inferential Network Analysis  G  3
This course presents inferential statistical models for network data in detail. The course will integrate theoretical discussions with practical examples and software code to perform analyses.

7681 Formal Theories of Politics I  G  3
Major approaches used in modeling politics, including social choice, game theory, and probability models.
Prereq: Not open to students with credit for 680.

7700 Foundations of Political Psychology  G  3
Overview of the field of political psychology: causes, dynamics, and consequences of human thinking and action in politics.
Prereq: Not open to students with credit for 806.

7702 Survey and Questionnaire Design  G  3
Theories of the survey research response process and their implications for question wording and question order effects.
Prereq: Not open to students with credit for 702.

7720 Political Psychology and International Relations  G  3
A seminar introducing students to theories of international relations that employ psychological perspectives; cognitive world views and political identity, especially nationalism, receive special attention.
Prereq: Not open to students with credit for 761.

7780 Political Science Research Methods  G  3
Introduction to political science research with emphasis on survey and experimental designs, data generation techniques, data processing, and computer utilization.
Prereq: Not open to students with credit for 694.

7781 Text as Data  G  3
Social interaction and conflict comprises the articul (and sometimes painfully in-artful) use of language. This course explores emerging statistical methods for extracting important signals from language stored as text. Topics include text collection and processing; dictionary methods; topic modeling; document clustering; deep learning; and concomitant computational and mathematical challenges.

7785 Experimental Design  G  3
Experimental methods appropriate for research in political psychology.
Prereq: Not open to students with credit for 805.

7788 Selected Topics in Political Methodology  G  3
An intensive examination of special topics in political methodology.
Repeatable to a maximum of 12 cr hrs.

7788 Field Research Methods  G  3
This seminar introduces students to various field methods for developing and testing theories in political science.

7905 Political Institutions  G  3
This class is an entry-level graduate class into the study of political institutions. The class aims to provide an overview of the field and a foundation upon which students can begin to teach themselves additional works in this literature.

8000 Writing and Publishing in Political Science  G  3
Students work on a pre-existing draft of a paper and develop a polished piece of research suitable for journal submission.

8194.01 Contemporary Political Problems: US  G  3
Group studies to examine specific contemporary problems in American politics. Repeatable to a maximum of 21 cr hrs.

8194.02 Contemporary Political Problems: Comparative  G  3
Group studies to examine specific contemporary problems in comparative politics.
Repeatable to a maximum of 21 cr hrs.

8194.03 Contemporary Political Problems: International  G  3
Group studies to examine specific contemporary problems in international politics.
Repeatable to a maximum of 21 cr hrs.

8194.04 Contemporary Political Problems: Political Theory  G  3
Group studies to examine specific contemporary problems in political theory.
Repeatable to a maximum of 21 cr hrs.

8194.05 Contemporary Political Problems: Methodology  G  3
Group studies to examine specific contemporary problems in political-science methodology.
Repeatable to a maximum of 21 cr hrs.

8194.06 Contemporary Political Problems  G  3
Group studies to examine specific contemporary political problems.
Repeatable to a maximum of 21 cr hrs.

8781 Research in American Politics  G  3
Development and execution of a research design on a selected topic in American politics; consultation on substantive and methodological problems offered by faculty.
Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

8782 Comparative Politics Research Seminar  G  3
Research seminar on various topics in comparative politics.
Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

8783 Research in International Politics  G  3
Research seminar on various topics in international politics.
Prereq: Not open to students with 12 cr hrs for 846. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

8784 Research in Political Theory  G  3
Research seminar in political theory.
Prereq: Not open to students with 12 cr hrs for 846. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.
**Portuguese**

**1101.01 Portuguese I**
U 4
Development of listening, reading, speaking, and writing skills in cultural contexts. Both classroom-based and 100% online sections available each semester. Not open to native speakers of this language through regular course enrollment or EM credit. Prereq: Not open to students with credit for 1102.01 or 1103.01 or equiv. This course is available for EM credit. GE for lang course.

**1102.01 Portuguese II**
U 4
Development of listening, reading, speaking, and writing skills in cultural contexts. Both classroom-based and 100% online sections available each semester. Not open to native speakers of this language through regular course enrollment or EM credit. Prereq: 1101.01 or 1101.51. Not open to students with credit for 1102.51 or 5501. This course is available for EM credit. GE for lang course.

**1103 Portuguese III**
U 4
Continued development of listening, reading, speaking, and writing skills in cultural contexts. Both classroom-based and 100% online sections available. Not open to native speakers of this language through regular course enrollment or EM credit. Prereq: 1102.01. Not open to students with credit for 5501 or 5502. This course is available for EM credit. GE for lang course.

**219 Individual Studies**
U 1 - 9
Independent study for subject matter not covered in regularly offered courses. Prereq: Permission of instructor. Repeatable to a maximum of 59 cr hrs or 59 completions. This course is graded S/U.

**2194 Group Studies**
U 1 - 9
Group Studies. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs or 18 completions. This course is graded S/U.

**2330 Introduction to Brazilian Culture**
U 3
Integrated, multidisciplinary overview of modern Brazilian culture in terms of its visual, plastic, musical, literary, dramatic, and popular arts within socio-economic and political context. Prereq: Not open to students with credit for Portgese 330. GE cultures and ideas and diversity global studies course.

**2331 Portuguese Culture and Society**
U 3
Examines Portuguese culture, taking into account intersections with other cultural contexts (e.g., in Europe, Africa, Asia, and the Americas). Taught in English. Prereq: Not open to students with credit for Portgese 331. GE cultures and ideas and diversity global studies course.

**2335 Cannibal Brazil: Cultural Encounters and Negotiations of Identity in Literature and Culture**
U 3
Explores a fundamental topic within Brazilian culture, from colonial times to present; cannibalism as cultural practice in both literal and discursive realms. Prereq: Not open to students with credit for 335. GE VPA course.

**2797 Topics in Foreign Study**
U 1 - 9
Credit from study abroad for courses not offered by department at the GE level. Courses may be taught in Portuguese or English. Prereq: Permission of departmental study abroad advisor. Repeatable.

**2798.10 Contemporary Issues in Brazil: Cultural, Environmental, & Racial Politics in the SE & NE Regions**
U 3
Consists of lectures on special topics by the faculty of University of the UNESP-SJRJP, and of ACBEU/Salvador, fieldtrips, and survival Portuguese classes. In Salvador, the course will explore some of the contemporary advances and challenges of the people of Bahia Brazil socially, culturally and environmentally. GE education abroad course.

**3401 Advanced Portuguese Grammar**
U 3
In-depth examination of different points of Portuguese grammar; emphasis on comprehension of key grammatical concepts in the language. Not open to native speakers of this language through regular course enrollment or EM credit. Prereq: Portgese 1103.01 (Portgese 103.01 and 104.01) or 5502 (502), or equiv, or permission of instructor. Not open to students with credit for Portgese 401.

**3402 Portuguese Reading and Listening**
U 3
Development of students' reading and listening skills through newspapers, magazines, radio and TV stories, and newscasts. Not open to native speakers of this language through regular course enrollment or EM credit. Prereq: Portgese 1103.01 (Portgese 104) or 5502 (502), or permission of instructor. Not open to students with credit for Portgese 402.
386 Portuguese
499H Research for Honors Thesis U 1 - 9
Topics vary based on research interests.
Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 59 cr hrs or 16 completions. This course is graded S/U.
5501 Portuguese for Spanish Speakers I U G 3
Rapid introduction to Portuguese language intended for students with at least high intermediate-level Spanish skills. Undergraduate and Graduate students with high-intermediate to advanced language skills in other Romance Languages may seek instructor permission to enroll.
Prereq or concour: Spanish 3401, 3403, 3404, or 3413, or equiv. or permission of instructor. Not open to students with credit for Portuguese 1101.01, 1102.01, 1103.01, or equiv. GE for language course.
5502 Portuguese for Spanish Speakers II U G 3
Continuation of 501; Portuguese language for students with at least intermediate-level Spanish skills.
Prereq: 5501 (501). Not open to students with credit for 1101.01 (101.01), 1102.01 (102.01), 1103.01 (103.01) and 104.01, or equiv.
5510 Literatures and Cultures in Portuguese, From the Middle Ages to Neoclassicism U G 3
Overview of literature and culture in the Portuguese-speaking world from the twelfth to the eighteenth centuries.
Prereq: 3450 (450) with a C- or better, or Grad standing; or permission of instructor.
5520 Literatures and Cultures in Portuguese, from Romanticism to Modernism U G 3
Overview of literatures and cultures of the Portuguese-speaking world in the nineteenth to the early twentieth centuries.
Prereq: 3450 (Portgese 450) with a C- or better, or Grad standing; or permission of instructor.
5611 The Portuguese Language U G 3
Focus on the diversity of Portuguese. Examines the principal areas of linguistic variation in Portuguese and the main dialect differences between Brazil and Portugal. Students conduct basic analyses of linguistic data using computerized corpus tools for hypothesis-testing. Taught in Portuguese.
Prereq: 3401 (401); or 5502 (502) and Grad standing; or permission of instructor. Not open to students with credit for Portuguese 611.
5650 Studies in Literatures and Cultures of the Portuguese-Speaking World U G 3
Intensive exploration of a specific topic or problem; topic varies, for example: modern Brazilian novel, Luso-African literature, Portuguese poetry since 1974.
Prereq: 3450 (Portgese 450) and one 4500 (500) level literature and/or culture course; or 5502 (502) and Grad standing; or permission of instructor. Not open to students with credit for 650. Repeatable to a maximum of 9 cr hrs.
5797 Study at a Foreign Institution U G 1 - 9
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Repeatable.
6193 Individual Studies U 1 - 9
Individual studies.
Prereq: Permission of instructor. Repeatable to a maximum of 59 cr hrs or 16 completions. This course is graded S/U.
6194 Group Studies U 1 - 9
Group studies.
Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs or 6 completions. This course is graded S/U.
6999 Research for Thesis U G 1 - 9
Research for thesis.
Prereq: Permission of instructor. Repeatable to a maximum of 59 cr hrs or 16 completions. This course is graded S/U.
7440 Cinema of the Portuguese-Speaking World G 3
In-depth study of a major topic or problem in the cinema of the Portuguese-speaking world (Portugal, Brazil, Lusophone Africa, and Lusophone Asia).
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 12 cr hrs.
7500 Studies in Literatures and Cultures of the Portuguese-Speaking World G 3
In-depth study of topics in the literatures and cultures of Brazil, Portugal, Lusophone Africa, and Lusophone Asia.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 9 hrs.
8193.01 Individual Studies G 1 - 9
Independent Study of a focused problem or topic in the literatures and cultures of the Portuguese-speaking world.
Prereq: Permission of instructor. Repeatable. This course is progress graded S/U.
8193.02 PhD Exam Preparation G 1 - 9
Independent Study to prepare for upcoming PhD examination.
Prereq: Permission of instructor. Repeatable to a maximum of 99 cr hrs. This course is graded S/U.
8194 Group Studies G 1 - 3
Group study of focused problems and topics in the literatures and cultures of the Portuguese-speaking world.
Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs or 18 completions.
8500 Seminar in Literatures and Cultures of the Portuguese-Speaking World G 3
Detailed exploration of advanced issues in the literatures and cultures of Brazil, Portugal, Lusophone Africa and Lusophone Asia.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 9 cr hrs.
8999 Research for Dissertation (Post-candidacy) G 1 - 12
Research for dissertation (post-candidacy).
Prereq: Post-candidacy status, and permission of faculty advisor. Repeatable to a maximum of 59 cr hrs or 16 completions. This course is graded S/U.

Psychiatry and Behavioral Health
2000 Introduction to Psychiatry in Healthcare U 3
This course will introduce you to a variety of behavioral health professions within the context of the broader healthcare system, and cultivate your understanding of the unique and interdisciplinary functions that professionals play.
8193 Research Study in Clinical Neuropsychology U 1 - 10
This course provides for individualized study in the field of clinical neuropsychology. This independent study course will allow the opportunity to obtain research skills & knowledge by working in a laboratory setting within a neuropsychology clinic.
Prereq: Psych 2220 and 2300, or permission of instructor. This course is graded S/U.
4998 Undergraduate Research in Psychiatry and Behavioral Health U 1 - 10
This course provides an opportunity for research in the fields of psychiatry, behavioral neurosciences, psychoneuromimmunology, and cancer. This course will allow students the opportunity to obtain research skills and knowledge by working in a laboratory setting.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

Psychology
1100 Introduction to Psychology U 3
A prerequisite to advanced courses; a broad survey of psychological science. Application of the scientific method to the empirical study of behavior with emphasis on individual and cultural differences.
Prereq: Not open to students with credit for 100, 1100H (100H) or 1100E (100E). This course is available for EM credit. GE soc sci indivs and groups and diversity soc div in the US course.
1100E Introduction to Psychology U 3
A prerequisite to advanced courses; a broad survey of psychological science. Application of the scientific method to the empirical study of behavior with emphasis on individual and cultural differences.
Prereq: Honors standing, or permission of instructor. Not open to students with credit for 1100 (100), 1100H (100H), or 100E. GE soc sci indivs and groups and diversity soc div in the US course.
1100H Introduction to Psychology U 3
A prerequisite to advanced courses; a broad survey of psychological science. Application of the scientific method to the empirical study of behavior with emphasis on individual and cultural differences.
Prereq: Honors standing, or permission of instructor. Not open to students with credit for 1100 (100), 1100E (100E), or 100H. GE soc sci indivs and groups and diversity soc div in the US course.
1300 Professional Development in Psychology U 1
Professional Development in Psychology will provide students with information and skills to be successful as a psychology major and plan a career in psychology or a psychology-related field. Students will learn about the various resources available at the university to support their success in psychology and the options available to them following their undergraduate education.
Prereq: Psych major.
2220 Data Analysis in Psychology U 3
Discussion of statistical analysis of psychological data - random samples, graphical and numerical techniques of descriptive statistics, correlation, regression, probability, sampling distribution, and hypothesis testing.
Prereq: 1100 or 1100H, and Stat 1450, Math 1130, 1148, 1149, 1150, or 1151, or equiv, or Math Placement Level M or higher; or permission of instructor.
2220E Data Analysis in Psychology  
U  3
Discussion of statistical analysis of psychological data - random samples, graphical and numerical techniques of descriptive statistics, correlation, regression, probability, sampling distribution, and hypothesis testing. Prereq: Honors standing, and 1100 or 1100H, and Stat 1450, Math 1130, Math 1148, 1149, 1150, 1151, or equiv, or Math Placement Level M or higher; or permission of instructor. Not open to students with credit for 2220 or 2220H.

2220H Data Analysis in Psychology  
U  3
Discussion of statistical analysis of psychological data - random samples, graphical and numerical techniques of descriptive statistics, correlation, regression, probability, sampling distribution, and hypothesis testing. Prereq: Honors standing, and 1100 (100) or 1100H (100H), and Stat 1450 (145), Math 1130, Math 1148 (148), Math 1149, 1150 (150), 1151 (151), or 152, or equiv, or Math Placement Level M or higher; or permission of instructor. Not open to students with credit for 2220 (220), 220H, 320, or 320H.

2300 Research Methods in Psychology  
U  3
An overview of issues, methods, and techniques of scientific psychological research. Students must be pursuing majors or minors in Psychology. Prereq: 1100 (100) or 1100H (100H). Not open to students with credit for 300.

2301 Psychology of Extraordinary Beliefs  
U  3
Considers beliefs in extraordinary phenomena through the application of the findings and principles of psychological science. Prereq: Not open to students with credit for 301.

2303 Positive Psychology  
U  3
Introduction to the field of positive psychology. Topics include positive affect, subjective well-being, optimism, psychological strengths, emotional intelligence, compassion, humor, and spirituality. Prereq: Not open to students with credit for Psych 303.

2311 Psychology of Motivation  
U  3
A survey of major approaches to motivation and the study of important concepts in motivation, with emphasis on everyday applications. Prereq: 1100 (100) or 1100H (100H). Not open to students with credit for 311.

2333 Psychology of Human Sexuality  
U  3
Overview of the psychology of human sexuality including the nature and variety of human sexual experience, theories and therapies regarding sexual issues. Prereq: 1100 (100) or 1100H (100H). Not open to students with credit for 333.02.

2350 Contemporary Developmental Psychology  
U  3
A survey course acquainting students with issues resulting from the social changes of the past decade and from an increased interest in the life span. Prereq: 1100 (100) or 1100H (100H). Not open to students with credit for 350.

2367.01 Social Psychology  
U  3
Survey of group processes as they affect individual behavior; topics include individual motivation, group behavior, attitudes, and perception of self and others. Prereq: 1100 (100) or 1100H (100H), and English 1110.01H, 1110.01H, 1110.02H, 1110.03H, 110, or 111, or equiv, and Soph standing or above. Not open to students with credit for 3235 (325), 3325H (325H), or 387.01. GE writing and comm: level 2 and soci sci indivs and groups course.

2367.02 Abnormal Psychology Analysis  
U  3
Major psychological disorders, such as anxiety, mood, & personality disorders, will be clinically described & diagnostically defined. Students will compare & contrast symptoms of psychological disorders with non-disordered behaviors, cognitions, & affects. The emphasis is on critical thinking & analysis of theories, research methods, & empirical findings regarding psychopathology & its treatment. Prereq: 1100 (100) or 1100H (100H), and English 1110.01, 1110.01H, 1110.02, 1110.02H, 1110.03, 110, 111, or equiv; and Soph standing or above. Not open to students with credit for 3331 (331) or 3331H (331H). GE writing and comm course: level 2.

2376 Interpersonal Relationships  
U  3
Surveys the scientific literature on interpersonal relationships, including family, friends, and romantic partnerships.

2389 Career Exploration in Psychology  
U  3
Designed for psychology majors to explore career paths of interest, as well as facilitate vocational development and acquisition of career search skills. Credit does not apply to hours in the psychology major. Prereq: 1100 (100) or 1100H (100H), and enrollment in Psych major. Not open to students with credit for 339."
3329H Introduction to Social Psychology U 3
An in-depth, empirically based introduction to research in social psychology; topics include individual motivation, group behavior, attitudes, and perception of self and others.
Prereq: Honors standing, and 1100 (100) or 1100H (100H); or permission of instructor. Not open to students with credit for 2367.01 (367.01), 3325 (325), or 325H.

3331 Abnormal Psychology U 3
Examination of current theories and empirical findings regarding the major forms of psychopathology and treatment.
Prereq: 1100 or 1100H. Not open to students with credit for 2367.02, 3331H, or 3331E.

3331E Abnormal Psychology U 3
Examination of current theories and empirical findings regarding the major forms of psychopathology.
Prereq: Honors standing, and 1100 (100) or 1100H (100H); or permission of instructor. Not open to students with credit for 2367.02, 3331 (331), 3331H (331H), or 331E.

3331H Abnormal Psychology U 3
Examination of current theories and empirical findings regarding the major forms of psychopathology.
Prereq: Honors standing, and 1100 (100) or 1100H (100H); or permission of instructor. Not open to students with credit for 2367.02, 3331 (331), 3331E (331E), or 331H.

3335 Psychology of Adjustment U 3
Examination of psychological concepts and theories related to individual adjustment and adaptation.
Prereq: 1100 (100) or 1100H (100H). Not open to students with credit for 335.

3335E Psychology of Adjustment U 3
Examination of psychological concepts and theories related to individual adjustment and adaptation.
Prereq: 1100 (100) or 1100H (100H). Not open to students with credit for 335 (335).

3340 Introduction to Life Span Developmental Psychology U 3
Consideration of theories and research on psychological development across the lifespan; includes consideration of social policies that influence developmental outcomes.
Prereq: 1100 (100) or 1100H (100H). Not open to students with credit for 340, 340H, or 340E.

3340E Introduction to Life Span Developmental Psychology U 3
A survey of developmental psychology including some phylogenetic perspective.
Prereq: Honors standing, and 1100 (100) or 1100H (100H); or permission of instructor. Not open to students with credit for 340, 340H, or 340E.

3340H Introduction to Life Span Developmental Psychology U 3
Consideration of theories and research on psychological development across the lifespan; includes consideration of social policies that influence developmental outcomes.
Prereq: Honors standing, and 1100 (100) or 1100H (100H); or permission of instructor. Not open to students with credit for 340, 340H, or 340E.

3371 Language and the Mind U 3
Introduction to psychological processes for producing and understanding speech, the means by which these processes arise in the child, and their bases in the brain.
Prereq: 1100, Ling 2000, or 5000. Not open to students with credit for 3371H, Ling 3701, or 3701H. GE soc sci indvs and groups course. Cross-listed in Ling 3701.

3371E Language and the Mind U 3
Introduction to psychological processes for producing and understanding speech, the means by which these processes arise in the child, and their bases in the brain.
Prereq: Honors standing, and 1100 or Ling 2000. Not open to students with credit for 3371, 3371H, Ling 3701, 3701E, or 3701H. GE soc sci indvs and groups course. Cross-listed in Ling 3701E.

3371H Language and the Mind U 3
Introduction to psychological processes for producing and understanding speech, the means by which these processes arise in the child, and their bases in the brain.
Prereq: Honors standing, and 1100 (100), 1100H (100H), Ling 2000 (Linguist 201), 2000H (200H), or 4000 (401); or permission of instructor. Not open to students with credit for 3371 (371), 371H, Ling 3701 (Linguist 371), or 3701H (371H). GE soc sci indvs and groups course. Cross-listed in Ling 3701H.

3375 Stereotyping and Prejudice U 3
Lectures address experimental research in stereotyping and prejudice; readings focus on historical, cultural, and sociological perspectives on issues related to gender, ethnicity, and social class.
Prereq: 1100 or 1100H. GE diversity soc div in the US course.

3513 Introduction to Cognitive Neuroscience U 3
Examination of the neuroscientific approach to the study of cognition; primary focus on the psychobiology of memory, attention, language, and spatial orientation.
Prereq: 1100 or 1100H.

3530 Theories of Personality U 3
Major theoretical and research orientations in the study of normal and abnormal personality development, with a focus on personality processes.
Prereq: 1100 (100) or 1100H (100H). Not open to students with credit for 530.

3550 Psychology of Childhood U 3
Introduction to the major phenomena, methods, theories, and findings of developmental psychology, especially as they apply to infancy and childhood.
Prereq: 1100 (100) or 1100H (100H). Not open to students with credit for 550 or 550H.

3550H Psychology of Childhood U 3
Introduction to the major phenomena, methods, theories, and findings of developmental psychology, especially as they apply to infancy and childhood.
Prereq: Honors standing, and 1100 (100) or 1100H (100H); or permission of instructor. Not open to students with credit for 550 or 550H.

3551 Psychology of Adolescence U 3
An examination of the biological, psychological, and social aspects of normal adolescent development.
Prereq: 1100 (100) or 1100H (100H). Not open to students with credit for 551.

3551H Psychology of Adolescence U 3
An examination of the biological, psychological, and social aspects of normal adolescent development.
Prereq: Honors standing, and 1100 (100) or 1100H (100H). Not open to students with credit for 3551 (551).

3624 Primate Cognition U 3
Research about monkeys and apes with emphasis on their learning, arts, memory, curiosity, language, and neuropsychological problems.
Prereq: 1100 (100) or 1100H (100H); or permission of instructor. Not open to students with credit for 624.

4305 Introduction to Psychopharmacology U 3
Introduction to the effects of drugs upon brain function.
Prereq: A grade of C- or above in 2220, 2300, and 3313; or a grade of B or above in 3313 and Neuroc 3000, and Neuroscience major. Not open to students with credit for 3305, 305, or 597.01.

4320 Psychological Science of Addiction U 3
Addiction is studied at many levels, from how drugs affect neurological systems to how psychosocial factors play a role in drug addiction. Likewise, accumulating evidence suggests that we need to consider addiction as a brain disease like other medical conditions. Students will learn neurological systems and cognitive neuroscience underlying drug addictions.
Prereq: A grade of C- or above in 2367.02, 3331, or 3331.

4475 The Self U 3
Survey of classic and contemporary theory and research on social psychological study of the self; diverse approaches, and various gender, ethnic, and cross-cultural perspectives.
Prereq: A grade of C- or above in 2220, 2300, and 2367 prior to SU13, 2367.01, 3325, 3325H, or 3375. Not open to students with credit for 475.

4485 Psychology and the Law U 3
Contributions of psychological theories to the legal system and the role of mental health professionals in this system.
Prereq: A grade of C- or above in 2220 and 2300. Not open to students with credit for 485.

4501 Advanced Behavioral Neuroscience U 3
Advanced discussion of contemporary issues in behavioral neuroscience, including: synaptic pharmacology, drugs, and behavior, neurodegenerative diseases and the biological bases of psychopathology.
Prereq: A grade of C- or above in 2220 and 2300, and a grade of B or above in 3313; or a grade of B or above in 3313 and Neuroc 3000, and Neuroscience major. Not open to students with credit for 501.

4508 Psychology of Judgment and Decision-Making U 3
An overview of current models and empirical research on cognitive processes in human decision-making and judgment under risk or uncertainty.
Prereq: A grade of C+ or above in 2220 and 2000. Not open to students with credit for 508 or 4508H (508H).

4508H Psychology of Judgment and Decision-Making U 3
An overview of current models and empirical research on cognitive processes in human decision-making and judgment under risk or uncertainty.
Prereq: Honors standing, and a grade of C- or above in 2220 and 2300. Not open to students with credit for 4508 (508) or 508H.

4509 Perception of Space and Motion in Sports U 3
Discussion of cognitive, perceptual, and statistical issues that have special application to performance in sports.
Prereq: A grade of C- or above in 2220, 2300, and 3310.

4510 Cognitive Psychology Laboratory U 3
Training in experimental and quantitative methods in cognitive psychology; laboratory experiments include topics such as memory, perception, and attention.
Prereq: A grade of C- or above in 2220 and 2300; and a grade of C- or above in 3302, 3310, or 3312; and enrollment in Psych major. Not open to students with credit for 4520.
4511 Psychological Testing U 3
An overview of theoretical and practical aspects of the assessment and prediction of human behavior; topics include achievement, intelligence, personality, attitudes, interests, and interpersonal relations.
Prereq: A grade of C- or above in 2220 and 2300. Not open to students with credit for 511 or 597.02.

4515 Psychology of Emotion U 3
An examination of emotion focusing on how emotions are interconnected to other basic psychological processes such as cognition, motivation, decision making, and well-being.
Prereq: A grade of C- or above in 2220 and 2300.

4518 Attitudes: Structure, Function, and Consequences U 3
Survey of theory and evidence related to the structure and functional value of attitudes and their effects on information processing, judgments, and behavior.
Prereq: A grade of C- or above in 2220, 2300, and 2367 prior to SU13, 2367.01, 3325, 3325H, or 3375. Not open to students with credit for 518.

4520 Social Psychology Laboratory U 3
Training in experimental and quantitative methods in social psychology. Experiments include topics such as attitudes, persuasion, social cognition, and group processes.
Prereq: A grade of C- or above in 2220, 2300, and 2367 prior to SU13, 2367.01, 3325, 3325H, or 3375, and enrollment in Psych major. Not open to students with credit for 4510.

4521 Personnel Psychology U 3
Overview of theory, method, and practices of personnel psychology: job analysis, recruiting, personnel selection, performance appraisal, and training.
Prereq: A grade of C- or above in 2220 and 2300. Not open to students with credit for 521.

4522 Organizational Psychology U 3
Overview of theory, method, and practice of organizational psychology: motivation, job attitudes, leadership, groups, organizational design.
Prereq: A grade of C- or above in 2220 and 2300. Not open to students with credit for 522.

4525 Psychology of Personal Security: Global and Local Perspectives U 3
Surveys the diverse psychological literature on personal security, a key ingredient in psychological well-being.
Prereq: 1100. Not open to students with credit for 525.

4531 Health Psychology U 3
Introduction to health psychology; health-promoting and health-damaging behaviors; modification of health behaviors; stress and coping; management of illness; stress management strategies.
Prereq: A grade of C- or above in 2220 and 2300. Not open to students with credit for 531.

4531S Health Psychology-Service Learning U 3
Introduction to health psychology; health-promoting and health-damaging behaviors; modification of health behaviors; stress and coping; management of illness; stress management strategies. Includes service learning component, applying course material within a local community agency. Offered on Lima campus only.
Prereq: A grade of C- or above in 2220 and 2300. Not open to students with credit for 4531.

4532 Clinical Psychological Science U 3
Surveys the scientific foundations of clinical psychological interventions and assessment techniques and considers their implications for the profession of clinical psychology.
Prereq: A grade of C- or above in 2220 and 2300; and a grade of C- or above in 2367.02 or 3331.

4540 Counseling Psychology U 3
Issues within the field of counseling psychology including assessment, counseling skills, multicultural issues, career, professional, and ethical issues.
Prereq: A grade of C- or above in 2220 and 2300; and a grade of C- or above in 2367.02, 3331, 3335, or 3336.

4543 Psychology of Gender U 3
An examination of the origins and implications of gender differences and similarities and the role that gender plays in the interpretation of behavior.
Prereq: A grade of C- or above in 2220 and 2300. Not open to students with credit for 4543E.

4543E Psychology of Gender U 3
An examination of the origins and implications of gender differences and similarities and the role that gender plays in the interpretation of behavior.
Prereq: Honors standing, and 2220 and 2300. Not open to students with credit for 4543 (543) or 543E.

4545 Cross-Cultural Psychology U 3
Introduction to cross-cultural theories and research in various specialties in psychology (e.g., social, developmental, and counseling psychology).
Prereq: A grade of C- or above in 2220 and 2300.

4552 Psychology of Adult Years U 3
Theory and research related to adulthood as a sequence of psychological stages involving adjustment and coping behaviors; relationship of adulthood to other life-span stages.
Prereq: A grade of C- or above in 2220 and 2300.
390 Psychology

5089 Cognitive Aging, Neurodegeneration, and Neuroplasticity U G 3
This course will cover changes in adult cognition (emphasis on memory) and the brain (structural and functional MRI) as a result of normal aging and age-related neurodegenerative diseases (such as Alzheimer's disease). The course will also cover factors that contribute to neuroplasticity and may attenuate decline, such as nutrition, fitness, physical activity, exercise, and videogames.
Prereq: A grade of C- or above in 2220, 2300, and 3313 or 3513; or a grade of B or above in 3313 and Neurosc 3000, and Neuroscience major; or Grad standing.

5194 Group Studies U G 2 - 3
Topics vary from semester to semester and will be announced at least one month in advance. Prereq: 1100. Repeatable to a maximum of 12 cr hrs or 4 completions.

5250 Mood Disorders: Classification, Etiology, and Treatment U G 3
A survey of the mood disorders, including depression, bipolar disorder, and several variants of these disorders. The course examines the mood disorders in depth, covering historical, cross-cultural, diagnostic, developmental, neuroscientific, etiological, and therapeutic issues.
Prereq: Grade of C- or higher in 2220 and 2300, and a grade of C- or higher in one of the following: 2367.02, 3331, 3331H, 3331E, 3335, or 3530; or Grad standing.

5270 Personality Disorders: Classification, Etiology, and Treatment U G 3
A survey of research on the classification, etiology, and treatment of personality disorders. In the class, personality disorders will be considered in historical, cross-cultural, developmental, and neuroscientific contexts and current debates will be discussed.
Prereq: A grade of C- or above in 2220 and 2300; and a grade of C- or above in 2367.02 or 3331 or 3335 or 3530.

5309 Human Motor Control and Learning U G 3
Processes underlying the performance, learning, and adaptation of motor skills such as walking, running, driving, drumming, golfing, catching, text editing, and social communication. Selective perception, attention, and memory in the context of action. Multi-limb coordination and multi-tasking.
Prereq: A grade of C- or above in 2220 and 2300; or Grad standing; or permission of instructor. Not open to students with credit for 4309.

5425 Introduction to Functional Magnetic Resonance Imaging U G 3
A general introduction to the physical bases of Magnetic Resonance Imaging (MRI), the physiological bases and principles of functional MRI, MRI related safety issues, design and analysis of MRI experiments, and the operation of the Siemens 3T Trio system with hands-on experience.
Prereq: Grad standing, or permission of instructor.

5505 History of Psychology U G 3
An introduction to major historical figures, important systems of thought within psychology, historical contexts of the field from surrealism to philosophy to the present status as a science and profession. This course will examine the forces and theories influencing methods of investigation, society's relationship to the mentally ill, and key historical and social events that shaped the field.
Prereq: A grade of C- or above in 2220 and 2300, or Grad standing. Not open to students with credit for 4505 or 6809.

5600 Psychobiology of Learning & Memory U G 3
Integrate coverage of animal learning and human memory, focusing on three key components of the field: behavioral processes, brain systems, and clinical perspectives.
Prereq: A grade of C- or above in 2220, 2300, and 3313; or a grade of B or above in 3313 and Neurosc 3000, and Neuroscience major; or Grad standing.

5601 Comparative Psychology U G 3
Research on animal behavior by psychologists and ethologists; behavioral differences between species; emphasis on evolutionary and adaptive significance of the mechanisms underlying behavior.
Prereq: A grade of C- or above in 2220, 2300, and 3313; or Grad standing.

5602 Behavioral Genetics U G 3
Behavioral genetics is the field of study that examines the role of genetics in animal (including human) behavior. It is highly interdisciplinary, involving contributions from biology, genetics, epigenetics, ethology, psychology, & statistics. The goal is to provide knowledge concerning the interrelationship of genetics & behavior, & its implications for health & human development & education.
Prereq: A grade of C- or above in 2220, 2300, and 3313; or a grade of B or above in 3313 and Neurosc 3000, and Neuroscience major; or Grad standing.

5603 Stem Cells and the Brain U G 3
This course will explore the biology, function and relevance of stem cells for brain and behavior from development through aging. Through lectures and primary research literature, we will discuss what it means to be a neural stem cell, how stem cells shape the brain, and what the role of stem cells might be in brain disorders and mental health.
Prereq: A grade of C- or above in 3313, or Grad standing.

5604 Sex Differences in the Brain and Behavior U G 3
Explores sex differences in the brain and behavior. Students will learn the importance of studying both males and females in neuroscience research and critical research and methodological issues in the study of sex differences. The goal of this course is to understand sex differences in a range of cognitive, emotional and social behaviors as well as sex differences in neurobiology of disease and mental disorders.
Prereq: A grade of C- or above in 2220, 2300, and 3313; or a grade of B or above in 3313 and Neurosc 3000, and Neuroscience major; or Grad standing.

5606 High-Level Vision U G 3
Examines the perceptual processes by which humans and other animals are able to obtain knowledge about the three-dimensional environment.
Prereq: A grade of C- or above in 2220, 2300, and 3313; or a grade of C- or above in 3313; a grade of B or above in 3313 and Neurosc 3000; and Neuroscience major; or Grad standing.

5608 Introduction to Mathematical Psychology U G 3
Survey of mathematical and computational modeling in psychology. Topics include psychophysical scaling, information processing, probabilistic choice, signal detection theory, model comparison, and Bayesian graphical modeling.
Prereq: A grade of C- or above in 2300 and 3313; or a grade of C- or above in 3313 and a grade of B or above in 3313 and Neurosc 3000, and Neuroscience major; or Grad standing.

5612 Introduction to Cognitive Science U G 3
Cognitive science is an interdisciplinary study of the nature of human thought: psychological, philosophical, linguistic, and artificial intelligence approaches to knowledge representation. Prereq: A total of 12 or hrs from any of the following areas: CSE, Ling, Philos, or Psych; or Grad standing; or permission of instructor. Not open to students with credit for 412, CSE 5531 (612), Ling 5612 (Linguist 612), or Philos 5830 (612). Cross-listed in CSE 5531, Ling 5612, and Philos 5830.

5613H Biological Psychiatry U G 3
Provides a contemporary overview of the biological bases of several significant psychopathologies, including mood disorders, schizophrenia, and PTSD/dissociative identity disorders.
Prereq: Honors standing; and a grade of C- or higher in Psych 2220, and Psych 2300; and Psych 3313 or Psych 3513, or a grade of B or above in Psych 3313 and Neurosc 3000 and Neuroscience major; or Grad standing.

5614 Cognitive Neuroscience U G 3
Neuronal mechanisms of information processing.
Prereq: A grade of C- or above in 2220 and 2300, and 3313 or 3513; or a grade of B or above in 3313 and Neurosc 3000; and Neuroscience major; or Grad standing.

5618 Introduction to Computational Cognitive Neuroscience U G 3
Introductory survey of neural-network models, emphasizing their neural foundations and applications to perceptions, memory, and language. Hands-on explorations with simulation software. Intended for students with prior programming experience and prior programming experience is required.
Prereq: A grade of C- or above in 2220 and 2300; or a grade of B or above in 3313 and Neurosc 3000, and Neuroscience major; or Grad standing.

5620 Technology, Efficiency, and Happiness U G 3
Considers various dimensions for evaluating the behavioral effects of any technology: efficiency, safety, cost, complexity, environmental impact, social impact. Prereq: 1100, or Grad standing.

5621 Introduction to Event-Related-Potentials U G 3
Training to become an independent event-related-potential researcher. Develop skills in experimental programming, application of electrode nets, artifact detection, filtering and component analysis, and localization.
Prereq: A grade of C- or above in 2220 and 2300, and permission of instructor; or Grad standing.

5622 The Development of Brain and Behavior U G 3
This course explores the process of brain development from conception through adulthood. The course will cover the basic processes of central nervous system differentiation, how the brain continues to change in infancy, childhood and adolescence, and how environmental variables and experiences shape brain development and program behavior throughout life, in human and animal models.
Prereq: A grade of C- or above in 2220, 2300, and 3313; or a grade of B or above in 3313 and Neurosc 3000, and Neuroscience major; or Grad standing.

5628 Developmental Cognitive Neuroscience U G 3
How does the brain change over the first few years of life and how do these changes support changes in cognition? What brain architecture is present when you are born, and how does it change with maturation vs. experience? How does early brain structure and function constrain later learning and plasticity? We will have lectures on foundational studies and discussions of current empirical papers.
Prereq: 3313 or 3513.

5681 Development and Psychopathology U G 3
Examines theories and research on psychopathology (e.g., autism) during infancy, childhood, and adolescence from a developmental-contextual perspective; emphasis on description, prevalence, etiology, prognosis, and assessment.
Prereq: A grade of C- or above in 2220, 2300, and 3560; or Grad standing.
Psychology of Delinquency
Characterization, risk and protective factors, and treatment of delinquency with emphasis on current theories and research practices.
Prereq: A grade of C- or above in 2220, 2300, and 3551; or Grad standing.

5700 Training in Informal Science Outreach
The purpose of this course is to provide students with hands-on training in informal science education at the COSI museum. All students will learn to provide outreach education at the museum; advanced students will develop outreach materials, assist in the visible research operations, and mentor other students.
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. Cross-listed in Ling and Edu/TL.

5797 Study at a Foreign Institution
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Prereq: 1100 (100) and written permission of dept chairperson. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs. Repeatable to a maximum of 30 cr hrs or 10 completions. This course is progress graded.

5800 Family Psychology
This course serves as an advanced introduction to the field of family psychology, including theories, methods, and key findings. Although many topics will be covered throughout the semester, a primary focus will be on parent-child relationships, couple (romantic) relationships, and how family relationships contribute to children's social and emotional development in diverse families.
Prereq: A grade of C- or better in 2220 and 2300; or Grad standing.

5832 Lifespan Sociocultural Development
Cognitive, emotional and cross-cultural aspects of moral development and social behavior across the life span. Emphasis on current findings, basic theoretical issues and applied topics (e.g. treatment of antisocial behavior).
Prereq: A grade of C- or above in 2220 and 2300; or Grad standing.

5870 Neuroeconomics and Decision Neuroscience
The focus of this course will be on the psychology and neuroscience underlying economic behavior. Discussion will cover various domains of economic decision making and what Neuroeconomics has taught us about them.
Prereq: AED/Econ 2005, Stats 1450, 2450, Psych 2220, or Econ 3400; and Math 1148 or higher; and Econ 4001.01, 4001.02, 4001.03, AED/Econ 4001, Psych 3313, 3513, or 4508. Not open to students with credit for 5870. Cross-listed in Econ.

5891 Proseminar in Cognitive Science
Provides an in-depth examination of cognitive science from an interdisciplinary perspective.

5898 Seminar in Behavioral Neuroscience
Team-taught seminar on selected topics from contemporary research areas in the field of behavioral neuroscience.
Prereq: A grade of C- or above in 4501, and permission of instructor; or Grad standing, and permission of instructor.

6193.01 Individual Studies: Clinical Psychology
Individual reading or research projects by special agreement between instructor and student.
Prereq: Permission of instructor. Repeatable to a maximum of 27 cr hrs or 15 completions. This course is graded S/U.

6193.03 Individual Studies: Developmental Psychology
Individual reading or research projects by special agreement between instructor and student.
Prereq: Permission of instructor. Repeatable to a maximum of 27 cr hrs or 15 completions. This course is graded S/U.

6193.04 Individual Studies: Cognitive Psychology
Individual reading or research projects by special agreement between instructor and student.
Prereq: Permission of instructor. Repeatable to a maximum of 27 cr hrs or 15 completions. This course is graded S/U.

6193.06 Individual Studies: Quantitative Psychology
Individual reading or research projects by special agreement between instructor and student.
Prereq: Permission of instructor. Repeatable to a maximum of 27 cr hrs or 15 completions. This course is graded S/U.

6193.07 Individual Studies: Social Psychology
Individual reading or research projects by special agreement between instructor and student.
Prereq: Permission of instructor. Repeatable to a maximum of 27 cr hrs or 15 completions. This course is graded S/U.

6193.08 Individual Studies: Behavioral Neuroscience
Individual reading or research projects by special agreement between instructor and student.
Prereq: Permission of instructor. Repeatable to a maximum of 27 cr hrs or 15 completions. This course is graded S/U.

6193.09 Individual Studies: Intellectual and Developmental Disabilities
Individual reading or research projects by special agreement between instructor and student.
Prereq: Permission of instructor. Repeatable to a maximum of 27 cr hrs or 15 completions. This course is graded S/U.

6609 Introduction to Mathematical Models in Experimental Psychology
An introduction to cognition with a focus on the application of mathematical models. Topic areas include memory, decision making, categorization, word recognition, priming, and reaction time.
Prereq: Not open to students with credit for 609.

6650 Seminar in Advanced fMRI Analysis Techniques
For students who have already completed the intro-level fMRI course. We will discuss techniques such as fMR-adaptation, retinotopic mapping, multi-voxel pattern analysis, functional connectivity, representational similarity analysis, real-time fMRI, etc. We will discuss journal articles and experiment ideas applying these techniques. This course is intended for students with prior fMRI experience.
Prereq: 5425, or permission of instructor. Repeatable to a maximum of 15 cr hrs.

6652 Empirically Supported Therapies for Children with Developmental Disabilities
The course will cover empirically-supported treatments from a variety of theoretical orientations, including behavioral, cognitive behavioral, and developmental approaches, as well as process by which therapies gain empirical support and standards by which a therapy is considered empirically supported. Various formats (e.g., individual, group, parent training) interventions will also be covered.

6700 Introduction to the Language Sciences
A core course that provides students with a general overview of linguistics and surveys the areas covered by the specialization: Language and Cognition, Language and Brain Function, Language and Society, Language and Technology, and Language Description and Fieldwork. Guest faculty will present in their areas of expertise and students will read and prepare assignments in multiple areas.
Prereq: Not open to students with credit for German 6700. Cross-listed in German.

6809 Historical Development of Psychology
Development of psychology from the philosophical antecedents to its present status as a science and a profession; assignments in original sources as far as possible.
Prereq: Not open to students with credit for 809.

6810 Statistical Methods in Psychology I
Basic concepts of descriptive and inferential statistics; includes estimation, hypothesis testing, non-parametric techniques, and analysis of variance.
Prereq: 2220 (229), or Grad standing, or permission of instructor. Not open to students with credit for 624 and 627.

6811 Statistical Methods in Psychology II
Simple linear regression and correlation, multiple linear regression, interactions; introduction to other related methods such as nonlinear regression and random effects models.
Prereq: 6810 (628 and 627), or equiv. Not open to students with credit for 628.

6820 Introduction to Bayesian Statistics for Psychological Data
An introduction to Bayesian statistics & data analysis for graduate students in the Dept of Psychology. It reviews basic probability theory & Bayes theorem, provides a broad introduction to inference from the modern Bayesian perspective & contrasts that to more traditional frequentist inference. Topics covered include analysis of proportions & means, interval estimates, regression, & Bayes factors.
Prereq: 6810 (628), and enrollment in Psychology.

6822 Statistical Mediation, Moderation, and Conditional Process Analysis
The application of principles of linear modeling to exploring questions about mediated (mechanisms) and moderated (conditional) effects. Topics include classic and contemporary approaches to testing mediation and moderation hypotheses, path analysis, indirect and direct effects, probing and plotting interactions, and analytically integrating mediation and moderation analysis.
Prereq: 6811 (628) or equiv, or permission of instructor.

6835 Child Development
Major developmental aspects of childhood; review of theory, methodology, research studies, and historical and contemporary writing about children; consideration of interdisciplinary approaches.
Prereq: Not open to students with credit for 835.

6849 Research Methods in Developmental Psychology
A critical survey and evaluation of concepts and techniques in study of developmental psychology.
Prereq: Not open to students with credit for 849.

6850 Ethics and Professional Issues in Psychology
Consider ethical questions and dilemmas that psychologists encounter in their everyday practice, research, and teaching. It will take a problem-solving approach to ethical decision-making with students working toward consensus around constructive means for preventing problems, recognizing, approaching, and resolving ethical predicaments in the field of IDD Psychology.

6851 Seminar on the Teaching of Psychology
Designed for first-time teachers of psychology; theory, philosophy, ethics, research, course planning and delivery, and practical strategies to promote teaching excellence.
Prereq: Grad standing. Not open to students with credit for both 651 and 652.
Psychology

6853 Lifespan Developmental Psychopathology I G 3
Part one of a two-course sequence surveying the major psychopathological disorders across the lifespan from a developmental psychopathology perspective.
Prereq: Permission of instructor. Not open to students with credit for 844.01.

6854 Lifespan Developmental Psychopathology II G 3
Part two of a two-course sequence surveying the major psychopathological disorders across the lifespan from a developmental psychopathology perspective.
Prereq: Not open to students with credit for 854.

6861 Research Design and Methods in Clinical Psychology G 3
Introduction to the theory and use of clinical methods in psychology, designed for first-year graduate students in clinical psychology.
Prereq: Permission of instructor. Not open to students with credit for 861.

6863 Psychometrics G 3
In-depth coverage of classic and contemporary topics in psychological measurement including test construction, reliability, validity, Item Response Theory, and computerized adaptive testing.
Prereq: Permission of instructor. Not open to students with credit for 864.06.

6866 Empirically Supported Treatments G 2
Examination of current theories and empirical findings regarding the major forms of psychopathology and treatment.
Prereq: Permission of instructor. Not open to students with credit for 866.02.

6867.01 Behavioral Medicine G 3
Behavioral medicine is an interdisciplinary field that examines health, disease prevention, illness, and disease progression. This course surveys the contributions by health psychologists to behavioral medicine. Topics include prevention, psychological responses to diagnosis and treatment, biobehavioral mechanisms of illnesses/disease, response to chronic illness, health behaviors, and emerging issues.
Prereq: Grad standing in any health related discipline.

6867.02 Behavioral Medicine-Cancer G 3
This course provides follow-up to the general offering with a focus on cancer prevention & control. Topics include overview of cancer as an illness, cancer screening, biobehavioral responses to diagnosis & treatment, factors which place patients at risk for poor psychological/health outcomes, psychological interventions, issues relevant to diverse patient groups, & late effects complicating survivorship.
Prereq: Grad standing in Psych or any health related discipline.

6870 Basic Principles of Social Psychology G 3
An overview of theory and research in experimental social psychology, emphasizing the basic motivational and information processing principles underlying the discipline.
Prereq: Grad standing. Not open to students with credit for 570.

6880 Techniques and Topics in Cognitive Neuroscience G 3
This course is required for all Cognitive Neuroscience graduate students and for Cognitive Neuroscience concentration students. Students will attend talks given by internal faculty and engage in group discussions about relevant topics and techniques in the field of cognitive neuroscience.
Prereq: Permission of instructor.

7187 Introduction to Clinical Practice G 3
Overview of important topics relevant to the practice of psychology, with the goal of preparing clinical psychology graduate students for their first practicum experience. Topics include ethics and legal statutes, diversity factors, concepts relevant to supervision and consultation, professional development, and common techniques used in therapy and assessment.
Prereq: Permission of instructor.

7188 Practicum in Clinical Psychology G 1 - 9
Supervised practice in psychological assessment and intervention in the department's psychological services center. Open only to students in clinical psychology.
Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs or 6 completions.

7189 Supervised Field Experience in Psychology G 1 - 9
Supervised experience, either research or operational, in any agency doing professional psychological work such as a school system, a psychological clinic, an industrial personnel department, or a counseling center.
Prereq: Soph standing in Psych, and approval of local staff of area in which student is specializing. Supervised by member of local staff and, in the case of an external placement, some member of the outside agency approved by the Dept of Psychology. Repeatable to a maximum of 18 cr hrs or 15 completions. This course is graded S/U.

7695.01 Seminar in Clinical Psychology G 1 - 3
Seminar in clinical psychology.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions.

7695.02 Health Psychology G 1 - 3
Seminar in health psychology.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions.

7695.04 Cognitive G 1 - 3
Seminar in cognitive psychology.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions.

7695.06 Quantitative G 1 - 3
Seminar in quantitative psychology.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions.

7708 Psychology of Judgment and Decision Making G 3
Introductory graduate course in the psychology of judgment and decision making, including applications to health, law, economics, environmental issues, and social, cognitive, and clinical psychology.
Prereq or concur: Grad level course in statistical methods. Not open to students with credit for 708.

7717 Interdisciplinary Perspective on Developmental Disabilities G 3
Introduction to the psychosocial, medical, and educational implications of developmental disabilities.
Prereq: Permission of instructor. Not open to students with credit for 717.01 or 717.03. Cross-listed in HthRhSc, EduSc, SocWork, Nursing, and SpHrng.

7718 Interdisciplinary Perspective on Autism Spectrum Disorders G 3
Teaches the analytical skills necessary to comprehend and formulate an interdisciplinary framework relating to major scientific and theoretical perspectives in autism spectrum disorders.
Prereq: Permission of instructor. Not open to students with credit for 717.01 and 717.02. Cross-listed in EduSc, HthRhSc, SocWork, Nursing, and SpHrng.

7816 Action and Decision Making G 3
Considers theories of decision making in static and dynamic environments, and theories of action control in dynamic systems (e.g., those involved in driving, sports and music performance). Includes experience with simple dynamic simulations.
Prereq: Not open to students with credit for both 815 and 816.

7820 Fundamentals of Factor Analysis G 3
Basic Common Factor Model and its application in psychology, model, communality estimation, factor extraction, orthogonal and oblique rotation, factor scores, confirmatory factor analysis, use of computer programs.
Prereq: Permission of instructor. Not open to students with credit for 820.

7821 Covariance Structure Models G 3
Theory and methods of testing models of covariance structures; general mathematical model, identification, parameter estimation, goodness of fit, model modification, and the use of computer programs such as LISREL.
Prereq: 6811 (828) and 7820 (820), or permission of instructor. Not open to students with credit for 830.

7822 Fundamentals of Item Response Theory G 3
Basic concepts underlying item response theory; overview of more advanced topics.
Prereq: 6811 (828), or permission of instructor. Not open to students with credit for 821.

7823 Analysis of Repeated Measures and Longitudinal Data G 3
Review statistical methods for the analysis of repeated measures experiments and longitudinal studies, and investigate the way that participants change over time.
Prereq: Permission of instructor. Not open to students with credit for 831.07.

7840 Practicum I/DD Psychology G 3 - 6
Observation of children in a representative variety of clinical settings with particular reference to developmental phenomena of growth and behavior; application of research, diagnostic and intervention methodology.
Prereq: 2nd yr Grad standing, and permission of instructor. Repeatable to a maximum of 18 cr hrs or 8 completions. This course is graded S/U.

7845 Cognitive Development G 3
Intensive survey of theory and research in cognitive development, including development of perception, language, memory, concepts, reasoning, academic skills, and social cognition.
Prereq: Not open to students with credit for 845.

7847 Language Development G 3
Survey of language acquisition, including phonemes, words, morphology, syntax.
Prereq: Not open to students with credit for 847.

7855 Seminar in the Assessment of Developmental Disabilities G 3
Exposes students to relevant issues in the assessment of developmental disabilities. An emphasis is placed on intellectual disability and autism spectrum disorders.
Prereq: Permission of instructor. Not open to students with credit for 859.01.

7864 Psychological Appraisal G 3
Theories and methods of psychological appraisal; integration of different theories and approaches.
Prereq: Permission of instructor. Not open to students with credit for 864.01.

7871 Social Cognition G 3
Introduces research in social cognition: the study of the cognitive underpinnings of social behavior and the ways individuals think about our social world.
Prereq: 6870 (870), or Grad standing in Psych, or permission of instructor. Not open to students with credit for 871.01.
Survey of Social Psychology. Prereq: 8670 (870), or Grad standing in Psych, or permission of instructor. Not open to students with credit for 871.02.

Coverage of key psychological theories and research on attitudes and persuasion - how opinions, beliefs, and evaluations are formed and modified, and how they influence thinking and behavior. Prereq: Grad standing. Not open to students with credit for 630.

Overview of issues in designing and conducting research in social psychology with emphasis on the statistical, internal, external, and construct validity of social psychological research. Prereq: Permission of instructor. Not open to students with credit for both 876.01 and 876.02.

Topics in developmental psychology. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions. This course is graded S/U.

Topics in cognitive psychology. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs.

Special topics in quantitative psychology. Repeatable to a maximum of 36 cr hrs or 12 completions.

A seminar offering in-depth analysis of a topic of current interest in social psychology. Enrollment is repeatable when the topic changes. Prereq: 8670 (870) or 8877 (875.01), or permission of instructor. Repeatable to a maximum of 16 cr hrs.

Advanced topics in behavioral neuroscience. Prereq: Permission of instructor. Repeatable to a maximum of 36 cr hrs or 12 completions.

This seminar course will provide students in the doctoral program in intellectual and developmental disabilities psychology with an overview of applied research and policy initiatives conducted by OSU-affiliated faculty and visiting scholars in the field. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

Research for masters thesis purposes only. Repeatable to a maximum of 60 cr hrs or 8 completions. This course is graded S/U.

Full-time supervised training in an approved predoctoral internship agency; supervision and directed experiences coordinated by student's advisor, program training director, and internship training director. Prereq: PhD candidacy in clinical psychology, an approved dissertation proposal, and written permission of advisor. Repeatable to a maximum of 36 cr hrs or 4 completions. This course is graded S/U.

Full or part-time supervised training in an approved predoctoral internship agency; applied setting serving children or adults with ID; supervision and directed experiences coordinated by student's advisor, program training director, and internship training director. Prereq: PhD candidacy in IDD Psychology, an approved dissertation proposal, and written permission of advisor. Repeatable to a maximum of 36 cr hrs or 4 completions. This course is graded S/U.

This course is required for all Cognitive Neuroscience graduate students and for Cognitive Neuroscience concentration students. Students will attend talks by internal/external faculty, workshops given by the invited speaker's students/postdocs, and professional development workshops; students will also be required to give a talk about their research. Prereq: Permission of instructor. Repeatable to a maximum of 36 cr hrs or 4 completions. This course is graded S/U.

Overview of professional issues facing the social psychologist seeking an academic career - focus on review of journal articles and grants as well as broader issues. Prereq: Permission of instructor. Not open to students with credit for 876.03.

Advanced training in the conduct, evaluation, and presentation of research related to attitudes, attitude change, and the consequences of attitudes for judgments and behavior. Cannot be taken concurrently with 8877. Prereq: Admission to Psychology's Social Psychology doctoral program. Repeatable to a maximum of 24 cr hrs.

Advanced training in the conduct, evaluation, and presentation of research related to social cognition. Cannot be taken concurrently with 8877. Prereq: Admission to Psychology's Social Psychology doctoral program. Repeatable to a maximum of 24 cr hrs.

Advanced training in the conduct, evaluation, and presentation of research related to the psychology of decision making. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

Provides an introduction to recent trends in decision research. We make choices and perceive risk based on cognitive, affective, and motivational factors that influence how we perceive meaning and construct our preferences. The course will cover theoretical distinctions and their application to practical domains such as health, finances, and the environment. Prereq: Permission of instructor.

This course is required for all Cognitive Neuroscience graduate students and for Cognitive neuroscience psychology. Repeatable to a maximum of 12 cr hrs or 6 completions.

Advanced topics in clinical psychology. Repeatable to a maximum of 30 cr hrs or 10 completions.

Advanced seminars in quantitative psychology. Prereq: Permission of instructor. Not open to students with credit for 831.08. Repeatable to a maximum of 15 cr hrs or 5 completions.

Research for dissertation purposes only. Repeatable to a maximum of 60 cr hrs or 15 completions. This course is graded S/U.

Introduction to the Public Affairs major at Ohio State, as well as University and Glenn School academic policies and procedures. Prereq: Permission of instructor. Not open to students with credit for 100. This course is graded S/U.

Part of an innovative public service internship program for selected high school seniors who are admitted to the OSU Academy. It is coupled with a related intensive academic seminar (PubAfrs 1190). Concur: 1190 (294). Not open to students with credit for 294.

Introduces students to the policymaking process and the core crafts on which schools of public affairs focus: policy analysis & evaluation and public administration & management. GE soc sci human, nat, and econ resources course.

Introduces students to the role an engaged citizenry plays in a democracy; trends in civic engagement, the reasons behind these trends, and their consequences; issues of social equity in engagement; and strategies to increase civic participation. Recommended prereq: 2110. Prereq: Not open to students with credit for 240.

Students examine theories of leadership; learn the unique challenges of being a leader in the public or nonprofit sectors; analyze the practices, strategies, and habits of successful leaders; and assess their own leadership competencies. Recommended prereq: 2110. Prereq: Not open to students with credit for 290.

Introduces students to the world of nonprofit organizations, in particular those whose missions address social issues and public service. Prereq: Not open to students with credit for 337 or ArtsSci 337.

Overview of public affairs as a field. Exposes students to relevant career opportunities. The course draws on experience of faculty and practicing professionals, providing public affairs perspectives in traditional and nontraditional career paths. Prereq: Open to John Glenn Learning Community students only or by permission of instructor. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

The course is designed to develop research and writing ability in public affairs. Prereq: Fresh or Soph standing and permission of Associate Director of Academic Affairs and Research. Repeatable to a maximum of 12 or hrs or 5 completions. This course is graded S/U.
394 Public Affairs, John Glenn College

2194 Group Studies U 1 - 6

Designed to give groups of undergraduate students an opportunity to pursue special studies in topics not otherwise offered.

Prereq: Freshman standing and permission of Associate Director of Academic Affairs and Research. Repeatable to a maximum of 18 hrs or 6 completions.

2367 Writing and Communication in Public Affairs U 3

Being an effective communicator can determine the reach and impact of policy, as well as the ability to influence change. In this course, you will become a better writer and speaker on a topic of public policy; including communicating to diverse audiences with differing information demands.

Prereq: English 1110 or equivalent, and sophomore standing; or permission of instructor. GE writing and comm course: level 2.

2500 History of Public Administration U 3

This course is an introduction to the history of public administration around the world from the earliest time up to the present, and the emergence and development of government and governing over time.

Prereq: or concur English 1110.xx. GE historical study course.

2620 Contemporary Issues in Science, Engineering, and Technology Policy U 3

This course provides a fast-paced introduction to the way Science and Engineering and Public Policy affect each other using examples drawn from contemporary events and analyses.

2630 Contemporary Civil-Military Relations in the United States U 3

The vision for this course is to connect Americans with their military - to build mutual understanding between military and civilian experiences. As a member of the American public, you have a say in what the military looks like and how it engages with the world. This course teaches you the tools and skills to effectively engage in military veterans policy.

3000 Public Policy Analysis U 3

Introduces students to the concepts, theories, and methods of applied policy analysis. Students develop an understanding of market failures and the tools available to public sector actors to mitigate them. Students also learn various methodological approaches to analyze policy at the formulation and implementation stages.

Prereq: Econ 2001.01, 2001.02, or 2001.03, and GE Data Analysis course; or permission of instructor.

3110 Education Policy in a Changing World U 3

Provides an introduction to education policy for public sector leaders and an overview of the following topics: education and the economy; education and governance; teaching and learning in education; student outcomes; and career opportunities in education policy.

3140 Nonprofit Management and Governance U 3

Survey and analysis of nonprofit organization management and governance, in particular those whose missions address social issues and public service.

Prereq: Not open to students with credit for 594 (WI 2011 only).

3150 Fundraising and Philanthropy for Nonprofits U 3

This course enhances students' skills, knowledge and abilities connected to fund development strategies, processes, evaluation and systems. Students will become familiar with how to apply the theories and methods of fundraising in various nonprofit contexts.

3500 Public Management U 3

Students are introduced to public management concepts and gain the competencies required to become effective public managers. They consider the unique challenges of managing public organizations and learn how to apply management tools to improve organizational performance. Recommended prereq: 2110.

3620 US Space Policy and the Global Space Economy U 3

This course provides a broad survey of US space policy and the national and international actors in the aerospace enterprise. It will explore the origins of the social, political, and economic implications of space policy choices made by American leaders, as well as the geography of space pursuits and the motivations behind various countries' space policies.

4000 Public Policy Evaluation U 3

Students learn how to design and perform policy evaluations focused on policy processes and outcomes, using both qualitative and quantitative data. There is particular emphasis on the development of research designs and application of analytic methods for public policy evaluation.

Prereq: 3000, Stat 1350 or above, and Econ 2001.01, 2001.02, or 2001.03; or permission of instructor.

4010 Public Affairs Decision-Making U 3

Introduces students to research on decision-making and its practical application in the public and non-profit sectors. Draws on interdisciplinary scholarship that examines how people make decisions and considers the application of these insights in the design of public policy and the management of public and non-profit organizations.

Prereq: 3000.

4011 Public Affairs Capstone U 3

A capstone course for public affairs majors that focuses on the integration and application of public affairs knowledge and skills, as well as the transition from undergraduate study. Students complete an applied analysis or research paper on a policy or management topic of interest to them.

Prereq: 2110, 2120, 3000, and 3500.

4020 Contemporary Issues in Governance: Washington DC U 3

Academic seminar of the Washington Academic Internship Program. Students will study public policy and management in the federal context. Discussion of common readings will expose students to topical issues in governance and provide a unique opportunity to apply knowledge, utilize analytical tools, and research various subjects in the environment in which policy and administration takes place.

Prereq: Jr or Sr standing, and acceptance into the Washington Academic Internship Program. Not open to students with credit for 4011.

4021 Research Paper in Public Affairs: Washington DC U 3

Capstone course to write an analytic research paper that examines an important policy or management challenge in the public sector. Paper will be written as part of participation in Washington Academic Internship Program.

Prereq: Jr or Sr standing, and acceptance into Washington Academic Internship Program.

Concur: 4020 and 4191.02.

4030 Public Budgeting U 3

Provides a high-level understanding of budgeting processes at all levels of government and in the profit sectors. Draws on interdisciplinary scholarship that examines how people make decision-making in the public sector.

4040 Public Sector Data Sciences and Management U 3

This course provides an orientation to the use of data for decision-making in the public sector. The emphasis of the course is on how to use data in context - when organizations require the analysis of sophisticated data in order to achieve goals or priorities.

Prereq: Completion of the PUBAF 201 or PUBAF 255 GE Requirement for data analysis.

4060 Senior Leadership Seminar U 3

Students integrate multidisciplinary theoretical and practical approaches of leadership development and civic engagement to reflect on how leadership is defined, how it changes, and how individuals and groups can apply experience in college to civic minded engagement and change after graduation.

Prereq: Sr standing.

4110 Higher Education and Workforce Policy U 3

This course provides an overview of higher education and workforce training, and examines the role of government in the strategic planning, funding, and monitoring of education after compulsory schooling. The class will address both the systems in the United States, as well as workforce and higher education in developing and other developed countries.

4191.01 Public Affairs Internship U 1 - 3

Internship with a public, non-profit or similar organization in which students learn about sector combined with academic research component relevant to internship area.

Prereq: Students must have internship approved by John Glenn College prior to registering.

Students may not receive credit for an internship already completed. Prior approval required. Repeatable to a maximum of 6 cr hrs or 2 completions.

4191.02 Student Internship in Public Affairs: Washington DC U 3

Washington D.C. Academic Internship Program offered through the John Glenn School of Public Affairs. Students from any discipline at the university may apply. Interns explore public policy issues and link experience to theoretical foundations. Students must be accepted to program in order to participate.

Concur: 4011 and 4021. Not open to students with credit for 589. Repeatable to a maximum of 9 cr hrs or 3 completions.

4191.03 Student Internship in Public Affairs U 3

Students will work an average of 10-12 hours per week at their designated internship. Internship placements are made with the intent of serving the needs of the host organization or government agency. This class will serve as the academic component of OSIRI, sponsored by the State of Ohio Leadership Institute.

Prereq: 2120 or PolitSc 3115.

4310 State and Local Government Finance U 3

Financing public services by state/local governments. The fiscal relationship between state/local governments and the federal government. Apply techniques of economic analysis to policy issues.


4510 Law and Public Affairs U 3

Introduces students to the legal environment within which public employees and administrators operate, emphasizing the work of the judiciary, and providing a legal basis for the study of public affairs, with a focus on how the courts engage in the policy making process.

4535 International Economic Development U 3

Study of the growth and diversification of developing economies and the causes of poverty and inequality. Analyze the impacts of human capital formation, markets, and public policy on development.

Prereq: AEDEcon 201 (200) or Econ 201 (200). Not open to students with credit for AEDEcon 435 or AEDEcon 535, or IntlStds 435 (535). Cross-listed in AEDEcon and IntlStds.

4998 Undergraduate Research U 1 - 12

Individually supervised undergraduate research and project work in Public Affairs.

Prereq: Jr or Sr standing, and permission of the Associate Director of Academic Affairs and instructor. Repeatable to a maximum of 12 cr hrs or 4 completions. This course is progress graded.
499.01H Honors Undergraduate Thesis  
U  G  1 - 3  
Honors Thesis in various topics related to Public Policy. Requires an Honors Thesis. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs or 2 completions. This course is progress graded.

499.02H Honors Undergraduate Thesis II  
U  G  1 - 3  
Honors Thesis in various topics related to Public Policy. Requires an Honors Thesis. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs or 2 completions. This course is progress graded.

5030 Local Government  
U  G  3  
Designed to provide a basic introduction to local governments and their relationship to state government. The course will cover organization, structure, responsibilities, management, and financing of local governments.

5060 Managing People in Public and Nonprofit Organizations  
U  G  3  
This course is designed to enhance students' management and leadership skills, preparing them to diagnose and solve organizational problems, to influence the actions of other individuals, groups, and organizations, and to manage high-performing, successful public and nonprofit service organizations. Prereq: Acceptance into the Public and Nonprofit Leadership and Management certificate program.

5062 Leadership Development Application  
U  G  3  
PA 5062 is designed to hone and demonstrate students' accumulated leadership knowledge and skills needed to successfully direct a work group or organization to achieving its public service goals. Prereq: 5060, and acceptance into the Public Leadership and Management Certificate program.

5100 Contextual Awareness for Leaders in Public Organizations  
U  G  3  
Cultivates contextual awareness for public officials and the societal environment in which they operate. Effective and inspiring leadership is developed in this course through experiential learning of how one is perceived and how perceptions of others can be managed. Develops awareness of heuristics and biases that may play a role in assessing situations in work and organizational environment. Prereq: Must be accepted to the Ohio Public Servants Leadership Academy (OPSLA). Not open to those with credit for 4600.

5101 Organizational Culture and Ethics into Practice  
U  G  3  
Intensive course on organizational culture, types of organizations and how structures influence various cultures (family, workplace, school, country, church); and the relation between organizational and individual ethics. Prereq: Acceptance into the Ohio Public Safety Leadership Academy (OPSLA). Coreq: 5102. Not open to students with credit for 4600.

5102 Organizational Theory into Practice  
U  G  4  
Investigates various types of organizations, interagency relations, intergovernmental relations, program evaluation, budgeting and finance, data management, policy making, leadership theory and styles and the relation between type of organization and its functioning. Prereq: Admission to the Ohio Public Safety Leadership Academy (OPSLA). Coreq: 5100 and 5101. Not open to students with credit for 4600.

5193 Individual Study  
U  G  1 - 6  
Individual Studies in Public Affairs. Prereq: Jr standing and permission of Associate Director of Academic Affairs and Research. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.

5194 Group Studies  
U  G  1 - 6  
Designed to give groups of students an opportunity to pursue special studies in topics not otherwise offered. Repeatable to a maximum of 18 cr hrs or 3 completions. This course is graded S/U.

5240 Race and Public Policy in the United States  
U  G  3  
This course explores race and public policy in the United States from Reconstruction to the present. In particular, the class is designed to look at the long history of hot topics in the current policy landscape, including policing, housing, wealth gap, immigration, voting, political representation, and others. Prereq: Jr, Sr, or Grad standing; or permission of instructor. Not open to students with credit for AFAM 4040 or CompStad 5240. Cross-listed in AFAM 4040 and CompStad.

5250 Poverty, Inequality, and Public Policy  
U  G  3  
Presents the distribution, trends, causes, and consequences of poverty and inequality in the US and social science frameworks for understanding and analyzing public programs available to poor and near-poor Americans. Current and historical issues in social policy and poverty, program design, and implementation. The role of government, personal choice, education, employment, and discrimination. Prereq: Econ 2001.01, or permission of instructor.

5400 Planning for Housing  
U  G  3  
Housing - including its uses, meaning, design, and role. The creation of a range of housing to support growth and revitalization of cities and regions. Prereq: Not open to students with credit for CRPlan 320, 752, or 5400. Cross-listed in CRPlan.

5506 Administration of Criminal Justice Policy  
U  G  3  
Students will become familiar with the structure of the criminal justice system and the application of public management and organizations theory to the criminal justice system. Many of the applications will focus on Ohio, but the theories and concepts are broadly applicable to the American system of criminal justice.

5513 Excel Basic Skills  
U  G  1  
This first of two Excel courses focuses on how to use Microsoft Excel from basic data entry, formatting, filtering and sorting, basic functions and formulas, basic nest formulas, and basic charts and graphs. A variety of techniques and data management concepts are presented and discussed. Real world examples are used to provide context. Repeatable to a maximum of 2 cr hrs.

5514 Excel Advanced Skills  
U  G  1  
Excel Advanced Skills focuses on how to use intermediate to advanced Microsoft Excel functionality from nested formulas to data analysis through the use of pivot tables and creating interactive worksheets. A variety of techniques and data management concepts are presented and discussed. Real world examples are used to provide context. Excel Basic class not required but recommended for beginners.

5545 How Washington Works  
U  G  1  
Intended to orient students to the priorities and complexities of the capital of the United States: what it does, why it does it and how. The mission of the course is to provide a broad view into one of the world’s main power centers.

5590 Fundraising and Philanthropy for Nonprofit Organizations  
U  G  3  
Designed for students interested in careers and/or volunteer roles in nonprofit administration and current professionals in this area: basic skills, theories, and applied methods of generating funding and creating development plans. Prereq: Not open to students with credit for 880.06.

5591 Lobbying and Government Relations  
U  G  3  
Designed to provide an introduction to lobbying government affairs and at the local, state, and federal levels of government. Prereq: Not open to students with credit for 880.06.

5592 Marketing for Nonprofit and Public Organizations  
U  G  3  
Examines marketing principles of mission-driven organizations, specifically nonprofits and government agencies. It will provide students with an introduction to marketing theory, and will equip them with practical experience in developing a strategic marketing plan that addresses challenges unique to nonprofit and public sector marketers. 7553 is a recommended prerequisite for Grad students. Prereq: 3140 for undergraduate students.

5595 Social Enterprise  
U  G  3  
A comprehensive introduction to the core concepts and key principles of social enterprise. Social enterprises are defined as nonprofit organizations that draw on market principles to pursue their social mission as well as governments and businesses as well. This course applies concepts and principles to the analysis of the social enterprise activities of individuals and organizations.

5600 Science, Engineering, and Public Policy  
U  G  3  
Presents the history of the interactions between science, engineering, and public policy in the United States and in the context of global concerns (e.g. climate change, competitiveness). Delves into how various federal government, universities, & corporations conduct & fund science and engineering & explore how public sector interests & processes influence sci, engr & public policy. Prereq: Jr, Sr, or Grad standing; or permission of instructor. Cross-listed in EnvEng.

5610 Innovation, Policy, and the Global Economy  
U  G  3  
This course examines frameworks and theories of public administration, governance, and policy for science and engineering at the international level. It will critique existing theories of global knowledge development and transfer, governance, and trade through the lens of science and engineering. Prereq: Jr, Sr or Grad Standing.

5620 Rapid Innovation for Public Impact  
U  G  4  
The Rapid Innovation for Public Impact course is like a multi-disciplinary capstone or hands-on applications course in which student teams tackle real, contemporary, complex problems sponsored by government or non-profit agencies. Following Lean innovation methodology, student teams develop minimum viable products (MVP) or prototype-solutions through intensive customer discovery and agile design.

5700 Rebuilding Failed and Weak States  
U  G  3  
Tackles the question of how to design policies and programs to rebuild failed and weak states into functioning, if not vibrant, democracies. Prereq: Soph standing or higher or permission of instructor. Not open to students with credit for 9070 or IntStds 5700 (870). Cross-listed in IntStds.

5750 Public Policy: The Business-Government Relationship  
U  G  3  
Business tools and strategy for influencing government; evolution and direction of public policy toward business. Prereq: Jr standing or above.
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<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Level</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>5770</td>
<td>Risk &amp; Decision Analysis in Public Affairs</td>
<td>U</td>
<td>G</td>
<td>3</td>
</tr>
<tr>
<td>5800</td>
<td>Special Topics Seminar in Public Affairs</td>
<td>U</td>
<td>G</td>
<td>3 - 4</td>
</tr>
<tr>
<td>5890</td>
<td>US Food Policy</td>
<td>U</td>
<td>G</td>
<td>3</td>
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<td>5895</td>
<td>Food Insecurity, and Food Assistance Programming</td>
<td>U</td>
<td>G</td>
<td>3</td>
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<td>5900</td>
<td>Food System Planning and the Economy</td>
<td>U</td>
<td>G</td>
<td>3</td>
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<tr>
<td>6000</td>
<td>Public Policy Formulation and Implementation</td>
<td>G</td>
<td>4</td>
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<td>6010</td>
<td>Legal Environment of Public Organizations</td>
<td>G</td>
<td>4</td>
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<td>6020</td>
<td>Foundations of Data-Driven Sustainable Energy Systems</td>
<td>G</td>
<td>3</td>
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<tr>
<td>6030</td>
<td>Public Sector Economics</td>
<td>G</td>
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<tr>
<td>6040</td>
<td>Public Budgeting and Finance</td>
<td>G</td>
<td>4</td>
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<tr>
<td>6045</td>
<td>Fundamentals of Budgeting and Financial Administration</td>
<td>G</td>
<td>2</td>
<td></td>
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<tr>
<td>6050</td>
<td>Managing Public Sector Organizations</td>
<td>G</td>
<td>4</td>
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<tr>
<td>6051</td>
<td>Into to Public Affairs and Orientation to the Program</td>
<td>G</td>
<td>4</td>
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<td>6055</td>
<td>Judgment in Managerial Decision-Making</td>
<td>G</td>
<td>2</td>
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<td>6060</td>
<td>Managerial Leadership in Public and Nonprofit Organizations</td>
<td>G</td>
<td>4</td>
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<td>6070</td>
<td>Public Affairs Statistics</td>
<td>G</td>
<td>4</td>
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<tr>
<td>6075</td>
<td>Data, Models and Evaluation</td>
<td>G</td>
<td>4</td>
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<tr>
<td>6080</td>
<td>Public Affairs Program Evaluation</td>
<td>G</td>
<td>4</td>
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<tr>
<td>6193</td>
<td>Individual Studies</td>
<td>G</td>
<td>1 - 6</td>
<td></td>
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<tr>
<td>6194</td>
<td>Group Studies</td>
<td>G</td>
<td>1 - 6</td>
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<td>6460</td>
<td>Real Estate Finance for Planners</td>
<td>G</td>
<td>3</td>
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<tr>
<td>6500</td>
<td>Public Affairs Skills: Written and Oral Communication</td>
<td>G</td>
<td>2</td>
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<td>6510</td>
<td>Conveying Quantitative Data in Public Affairs</td>
<td>G</td>
<td>1</td>
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<td>6515</td>
<td>Database Management</td>
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<td>1</td>
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<td>6520</td>
<td>Balanced Scorecards and Dashboards</td>
<td>G</td>
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<td>6525</td>
<td>Survey Design in Public Affairs</td>
<td>G</td>
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<td>6530</td>
<td>Negotiation for the Public Sector</td>
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6540 Professional Development Skills Class  G  1
Public administration professionals face an ever-changing professional landscape in a variety of occupations across the public, nonprofit, and private sectors. The section is specifically taught through the lens of Washington, DC, as it serves students who will intern and complete their capstone in DC next year. Provides tools needed to make students successful in the job search and workforce.

6545 Washington Navigator  G  1
Students will learn to navigate the nation’s capital during their first-semester in Washington to set themselves up for professional success through panels and speakers, professional pathway planning, and networking. This course is only offered in Washington, D.C. and is a required course for students enrolled in the MPA-D.C. program at the John Glenn College of Public Affairs.
Prereq: Acceptance into the John Glenn College of Public Affairs MPA-D.C. program.

6890 Special Topics: Skills in Public Affairs  G  1
Contains special topics exclusively appropriate to the “Skills” portion of the Glenn School Masters curriculum. Prior to scheduling, a syllabus with learning objectives, topics, and a rationale will be agreed upon by the faculty.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 6 cr hrs.

7194 Group Studies  G  1 - 4
Designed to give groups of students the opportunity to pursue special advanced studies in topics not otherwise offered. Repeatable to a maximum of 16 cr hrs or 4 completions.

7501 Grant Writing in the Public Sector  G  3
An introduction to the public sector process of grant writing including techniques and structure. Prereq: Not open to students with credit for 880.02 or CRPlan 6610 (837). Cross-listed in CRPlan 6610.

7503 Higher Education Policy for Public Leaders  G  3
Provides an introduction to education policy for public sector leaders. Topics include Higher Education economic foundations, budget processes, current policies, and international education and practice. Prereq: Not open to students with credit for 880.06.

7505 Wicked Policy Problems  G  3
Elective course examines “wicked” policy problems, or policy problems that require attention to multiple causal factors (e.g. economic, financial, political, social, cultural, technological).

7507 Criminal Justice Policy  G  3
Overview of criminal justice system with focus on structural, organizational, and micro-level aspects of the criminal justice policy process; study of key systemic as well as current policy issues and fiscal impacts of policies. Prereq: Not open to students with credit for 840.

7509 Disasters: Preparedness and Response  G  3
Introduction to planning, policy and management issues that arise when disaster strikes, and the roles of government, non-profits, communities and individuals in emergency preparedness by examining a variety of recent natural and human-made disasters, both in the U.S. and abroad.
Cross-listed in CRPlan.

7531 Economic Development Policy  G  3
Takes a practical approach to the legal, policy and business issues related to urban redevelopment. Gain a legal perspective as they investigate business and public policy issues surrounding redevelopment in our urban core.
Prereq: Not open to students with credit for CRPlan 7531. Cross-listed in CRPlan.

7533 Nonprofit Financial Management  G  3
Focuses on financial management in nonprofit organizations which may rely primarily on donor support through pledges, grants and endowments or on revenues generated through the provision of services.

7534 Privatization  G  3
Examines the theory and current practice of privatization against the backdrop of public policy and public administration. Prereq: Not open to students with credit for 880.07.

7535 Regulation and Deregulation  G  3
Examine the strengths and limitations of economic and social regulation, the occasion for and evolution of their policy development, and the prospects for regulation, deregulation, and re-regulation in the U.S. economy.
Prereq: Not open to students with credit for 880.05.

7550 Contract Management  G  3
Provides students with a perspective on the need and methods for managing contract relationships and outsourced services in the public-sector.

7553 Nonprofit Management and Governance  G  3
Advanced survey course on nonprofit management and governance, with a concentrated focus on evaluating and managing nonprofit capacity to achieve organizational performance and system impact. Prereq: Not open to students with credit for 880.06.
398 Public Affairs, John Glenn College

7940 Capstone: Public Management G 3
Students integrate the knowledge and skills gained throughout the MA/MPA program by applying theory to practice through an in-depth Public Management analysis of a defined topic or a specific organization.
Prereq: 6000 (801), 6050 (810), 6060 (811), 6070 (820 & 822), 6080 (804); or permission of instructor.

7950 Capstone: Nonprofit Topics G 3
Integrate the knowledge and skills gained throughout the MA/MPA program by applying theory to practice through an in-depth Nonprofit analysis of a defined topic or a specific organization.
Prereq: 6000, 6070, and 6080; or permission of instructor.

7960 Capstone: Information Management G 3
Integrate the knowledge and skills gained throughout the MA/MPA program by applying theory to practice through an in-depth Information Management analysis of a defined topic or a specific organization.
Prereq: 6000 (801), 6050 (810), 6070 (820 & 822), 6080 (804); or permission of instructor.

7970 Capstone: Policy in an International Context G 3
Students integrate the knowledge and skills gained throughout the MA/MPA program by applying theory to practice through an in-depth International Context analysis of a defined topic or a specific organization.
Prereq: Permission of instructor.

7990 MPAL Capstone G 3
This course builds on the core curriculum that students have completed in the program. Students will integrate the fundamental knowledge and skills gained in the MPAL curriculum and further apply them to relevant workplace situations.

8000 Public Policy and Management: Foundations and Approaches G 3
In-depth introduction to research and theory of public administration intended to familiarize students with major research streams in the field and issues and debates involved therein. Assists students in planning research directions.
Prereq: John Glenn School Doctoral students or permission of instructor. Not open to students with credit for 880.06.

8030 Seminar in Public Policy G 3
Designed to heighten graduate students' ability to think critically about public policy research. It emphasizes the critical assessment of public policy research on policy formulation, implementation, and evaluation.
Prereq: John Glenn School Doctoral students or permission of instructor. Not open to students with credit for 880.06.

8040 Seminar in Organizational Theory G 3
Survey of the major perspectives in organizational theory and their application to public management.
Prereq: Not open to students with credit for 880.06.

8050 Seminar in Public Sector Economics G 3
The applications of rational choice modeling to public policy analysis and organizational decision-making.
Prereq: 6030 (830), or Econ 4001 (501), or permission of instructor. Not open to students with credit for 880.02.

8055 Public Affairs and Public Choice G 3
Introduces a series of largely non-mathematical public economics and public choice models. The course is built around a series of powerful small thought models and economic concepts that have important implications for public policy. Uses economic modeling techniques and assumptions to explain the policymaking process. A survey of public choice models that can be applied broadly. Prior coursework in intermediate microeconomics required prior to enrollment.

8193 Individual Studies G 1 - 12
Advanced individual studies in public affairs.
Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs or 18 completions. This course is graded S/U.

8194 Group Studies G 1 - 4
Designed to give groups of students the opportunity to pursue special advanced studies in topics not otherwise offered. Repeatable to a maximum of 16 cr hrs or 4 completions.

8620 Innovating for Sustainable Energy Systems G 4
Provides students with the design tools and a framework to understand complex problems and develop within weeks minimal viable products or solutions that address energy-sector needs. Through an intense process of stakeholder interviews and continuous feedback, students acquire experience in systematic innovation, refining problem-statements, navigating public and private sector organizations.

8780 Logic of Policy Inquiry G 3
Explore research paradigms to determine how they suit one's values, research interests and objectives. Determine object of study, approaches and language used to acquire/disseminate knowledge.
Prereq: Not open to students with credit for 890.

8782 Seminar in Policy Modeling G 3
Analyzes conceptual frameworks underlying scholarly products to help students plan a doctoral dissertation or a paper publishable in an academic journal.
Prereq: Not open to students with credit for 880.05.

8890.01 First Year Doctoral Seminar I G 1
First in a sequential series of three, develops skills and capacities for first-year Glenn School doctoral students to succeed and thrive as scholars.
Prereq: Not open to students with credit for 880.06.

8890.02 First Year Doctoral Seminar II G 1
Second in a series of three, develops skills and capacities for first-year Glenn School doctoral students to succeed and thrive as scholars.
Prereq: 8890.01 or permission of instructor. Not open to students with credit for 880.06.

8890.03 Second Year Doctoral Seminar G 1
Last of three in a sequential series, develops skills and capacities for second-year Glenn School doctoral students to advance in the field as scholars and prepare for academic and non-academic careers.
Prereq: 8890.01 and 8890.02, or permission of instructor. Not open to students with credit for 880.06.

8890.04 College Teaching in Public Affairs G 2
This interactive seminar assists advanced graduate students developing the necessary skills for college level teaching in public affairs: pedagogical strategies; theoretical and interdisciplinary practices, instructor professional development.
Prereq: Grad standing, and permission of instructor.

8998 Graduate Research Non-Dissertation G 1 - 8
This course is designed to provide reading and research hours for students preparing for candidacy exams.
Prereq: Permission of instructor. Repeatable to a maximum of 16 cr hrs or 4 completions.

8999 Research in Public Affairs: Dissertation G 1 - 12
Research for dissertation purposes only. Repeatable to a maximum of 18 cr hrs or 18 completions. This course is graded S/U.

Public Health

1100 Survey of Public Health U 1
An introduction to the University community, strategies for successful transition to and participation in that community; information about University resources and procedures; and (4) information about the College of Public Health and its programs.

2010 Introduction to Global Public Health U 3
Public health concepts examining the philosophy, purpose, history, organization, functions, and results of public health practices domestically and internationally. Presents the pressing global public health concerns of the 21st century.
GE soc sci indivs and groups and diversity global studies course.

2010H Honors Introduction to Global Public Health U 3
Introduction to Global Public Health presents global public health concepts and practice, examining the philosophy, purpose, history, organization, functions, tools, activities, and results of public health practice at the global, national, state, and community levels.
Prereq: Honors standing, or permission of instructor. GE soc sci indivs and groups and diversity global studies course.

3180 Undergraduate Capstone Preparation U 1
The purpose of the class is to prepare undergraduate students in Public Health for their Capstone Experience. Students will learn the critical elements of Public Health Practice and Research as well as professional development skills to prepare them for the workplace and equip them with the tools needed to apply for graduate school.
Prereq: Jr standing in BSPH major; or Soph standing for students who intend to complete Honors Research Thesis. This course is graded S/U.

3180E Undergraduate Capstone Preparation U 1
Prepares undergraduate students in Public Health for their Capstone Experience. Students will learn the critical elements of Public Health Practice and Research as well as professional development skills to prepare them for the workplace as well as the field trip needed to apply for graduate school.
Prereq: English 1110 (110), good academic standing, and completion of minimum 4 semesters (2 academic years) of undergraduate education.

3189.01 Field Experience in Global Public Health: India U 3
Global public health concepts and associated metrics; role of cultural, social, economic, and environmental factors on public health in India; instructions in a classroom setting on an Indian campus and through field trips.
Prereq: English 1110 (110), good academic standing, and completion of minimum 4 semesters (2 academic years) of undergraduate education.

3189.02E Field Experience in Global Public Health: China U 3
Global public health concepts and associated metrics; role of cultural, social, economic, and environmental factors on public health in China; instructions in a classroom setting on a Chinese campus and through field trips.
Prereq: Major or minor in Public Health or in health/biology-related areas, or permission of instructor.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3189.03</td>
<td>Field Experience in Global Public Health: Japan</td>
<td>U 3</td>
<td>Global public health concepts and associated metrics; role of cultural, social, economic, and environmental factors on public health in Japan; instructions in a classroom setting on a Japanese campus and through field trips. Prereq: English 1110 (110), and good academic standing, and completion of minimum 4 semesters (2 academic years) of undergraduate education.</td>
</tr>
<tr>
<td>3189.03E</td>
<td>Field Experience in Global Public Health: Japan</td>
<td>U 3</td>
<td>Global public health concepts and associated metrics; role of cultural, social, economic, and environmental factors on public health in Japan; instructions in a classroom setting on a Japanese campus and through field trips. Prereq: English 1110 (110), and good academic standing, and completion of minimum 4 semesters (2 academic years) of undergraduate education.</td>
</tr>
<tr>
<td>3189.04</td>
<td>Field Experience in Global Public Health: Finland and Estonia</td>
<td>U 3</td>
<td>Global public health concepts and associated metrics; role of cultural, social, economic, and environmental factors on public health in Finland and Estonia; instructions in a classroom setting and through field trips.</td>
</tr>
<tr>
<td>3189.04E</td>
<td>Field Experience in Global Public Health: Finland and Estonia</td>
<td>U 3</td>
<td>Global public health &amp; associated metrics, role of cultural, social, economic, and environmental factors on public health in Finland and Estonia. Cross-listed in PubHlth 3189.04.</td>
</tr>
<tr>
<td>3191</td>
<td>Undergraduate Internship in Public Health</td>
<td>U 2</td>
<td>Placement of BSPH students in a public health agency or related site for supervised practice experience. Prereq: Jr or Sr standing, enrollment in BS Public Health major, and permission of advisor. Repeatable to a maximum of 4 or 4 hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>3191E</td>
<td>Undergraduate Internship in Public Health</td>
<td>U 2</td>
<td>Placement of BSPH students in a public health agency or related site for supervised practice experience. Prereq: 3180 or 3180E, Sr standing, enrollment in BS Public Health major, and permission of advisor. Repeatable to a maximum of 6 or 6 hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>3193</td>
<td>Individual Studies in Public Health</td>
<td>U 1 - 3</td>
<td>Individual study in a public health topic approved by and under the guidance of a faculty advisor. Prereq: Permission of a faculty advisor. Repeatable to a maximum of 6 or 6 hrs or 3 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>3550</td>
<td>Special Topics in Public Health</td>
<td>U 1 - 6</td>
<td>Regular class on topics that are relevant to students enrolled in programs in the College of Public Health undergraduate program. Prereq: Placement in a public health major or pre-major, or permission of instructor. Repeatable to a maximum of 12 or 12 hrs or 6 completions.</td>
</tr>
<tr>
<td>3998</td>
<td>Undergraduate Public Health Research Seminar</td>
<td>U 2</td>
<td>This seminar is designed for undergraduate students that are public health majors or pre-majors that are considering getting involved with research. In this seminar, students will learn about broad categories of research (for example, human subjects versus laboratory) and the ethical considerations for different types of research studies. Prereq: Enrollment in the Public Health major or pre-major, or permission of instructor. This course is graded S/U.</td>
</tr>
<tr>
<td>3999</td>
<td>Undergraduate Capstone Research in Public Health</td>
<td>U 2</td>
<td>The goal of the Undergraduate Public Health Research Capstone is to provide Public Health students with opportunities to apply public health principles outside of a typical classroom setting and build on public health coursework. This course allows students the opportunity to integrate classroom experiences and principles in an applied research setting. Prereq: 3180. This course is graded S/U.</td>
</tr>
<tr>
<td>4998</td>
<td>Undergraduate Research in Public Health</td>
<td>U 1 - 6</td>
<td>Undergraduate research under the guidance of a faculty mentor in a basic or applied area of public health. Prereq.: Jr or Sr standing, and enrollment in BSHP major, and permission of advisor. Students who are not junior or senior standing may be eligible with faculty mentor approval. Repeatable to a maximum of 6 or 6 hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>4999</td>
<td>Undergraduate Research Thesis</td>
<td>U 1 - 3</td>
<td>Conducting a research project and writing a thesis is a Capstone Option for undergraduate Public Health majors. It allows the student a significant opportunity to apply skills learned in the classroom to an applied research project. This is done under the supervision of a faculty advisor. Prereq: 3180 or 3180E, a cumulative GPA of 3.0 or higher, PUBHLTH-BS major, approval of research proposal by undergraduate research committee, and permission of instructor. Repeatable to a maximum of 6 or 6 hrs or 2 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>4999.01H</td>
<td>Senior Honors Thesis</td>
<td>U 1 - 3</td>
<td>An independent senior thesis course with faculty advisor; subject matter will vary depending upon student's topic. At least two semesters are required for the BSHP degree with research distinction. Failure to receive a mark of S in this course is a disqualification for special honors. Prereq: Honors standing in Public Health, 3180E, and permission of instructor. Repeatable to a maximum of 6 or 6 hrs or 6 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>5015</td>
<td>Public Health Data Analytics I</td>
<td>U G 3</td>
<td>In this course, students will gain a very general introduction to data analytics concepts and methods in the context of current and emerging public health issues. Students will be exposed to foundational concepts in data analytics that are relevant to the design, analysis, and interpretation of data-driven decision-making in public health and healthcare settings. Prereq: PUBHLTH 2210, Stat 3202, 3470, or 5301; or permission of instructor.</td>
</tr>
<tr>
<td>5760</td>
<td>Public Health Informatics</td>
<td>U G 3</td>
<td>Introduction to the emerging and interdisciplinary field of Public Health Informatics. This course will highlight the history, current and future use of informatics in the public health settings, and give students an understanding of the role and broad application of informatics to promoting health and preventing disease. Cross-listed in BMI.</td>
</tr>
<tr>
<td>6000</td>
<td>Introduction to Global Health</td>
<td>G 2</td>
<td>Overview of current and emerging public health issues, their determinants, actions, and interventions. Prereq: Open to Grad students with registration priority for students enrolled in the Interdisciplinary Global Health specialization. Not open to students with credit for 6002.</td>
</tr>
<tr>
<td>6001</td>
<td>Methods in Quantitative Data Analysis</td>
<td>G 4</td>
<td>Fundamentals of biostatistics and epidemiology for MPH students: Will cover core knowledge areas in quantitative data analysis, morbidity, mortality, and risk assessment to understand population health. Prereq: Grad standing in MPH-PM or MPHPEP-PM, or permission of instructor. Concur: 6002.</td>
</tr>
<tr>
<td>6002</td>
<td>History, Values and Essential Services of the U.S.</td>
<td>G 2</td>
<td>Public Health System</td>
</tr>
<tr>
<td>6003</td>
<td>Methods in Public Health Planning and Evaluation</td>
<td>G 2</td>
<td>This course will address the methodology, conceptual frameworks, and strategies for planning and evaluating public health programs. Prereq: 6001 and 6002, and Grad standing in MPH-PM or MPHPEP-PM, or permission of instructor. Concur: 6004.</td>
</tr>
<tr>
<td>6004</td>
<td>Essentials of Population Health</td>
<td>G 4</td>
<td>This course will cover values, history and essential services of the US public health system and the foundations of the social and environmental determinants of health, including the impact of racism, poverty and other structural inequalities. Prereq: Grad standing in MPH-PM or MPHPEP-PM, or permission of instructor. Concur: 6001.</td>
</tr>
<tr>
<td>6010</td>
<td>Essentials of Public Health</td>
<td>G 3</td>
<td>An overview of the history and philosophy of public health, and the fundamental principles, concepts, and tools used in promoting the health of populations. The course is intended to orient students to the breadth of the field and introduce cross-specialization perspectives on major issues and problems in public health. Prereq: Enrollment in Master of Science in Public Health (PUBHLTH-MS), Doctor of Philosophy in Public Health programs (PUBHLTH-PH), Doctor of Philosophy in Biostatistics (BIOSTAT-PH), Master of Science in Environmental Sciences (ENVS/SCI-MS), Doctor of Philosophy in Environmental Sciences (ENVS/SCI-PH), or permission of instructor.</td>
</tr>
<tr>
<td>6189.01</td>
<td>Field Experience in Public Health</td>
<td>G 1 - 6</td>
<td>Placement in a public health agency or related site for supervised practice experience. Prereq: Enrollment in public health degree program, and permission of instructor. Repeatable to a maximum of 6 or 6 hrs or 6 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>6189.02</td>
<td>Field Experience in Global Health</td>
<td>G 1 - 6</td>
<td>Placement in a public health agency or related site for supervised international practice experience. Prereq: Enrollment in public health degree program, and permission of instructor. Repeatable to a maximum of 6 or 6 hrs or 6 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>7000</td>
<td>Public Health in Developing Countries</td>
<td>G 3</td>
<td>Overview of core public health principles and practices applied to global health issues. Prereq: Grad or professional student standing.</td>
</tr>
<tr>
<td>7015</td>
<td>Public Health Data Analytics II</td>
<td>G 3</td>
<td>The focus of this course is on the appreciation of data analytics as applied to current and emerging public health issues. Prereq: 5015, or permission of instructor.</td>
</tr>
<tr>
<td>7040</td>
<td>Public Health Organization</td>
<td>G 3</td>
<td>Review of the historical background leading to the evolution of public health with a focus on the contemporary practice of public health; a review of current policy and practice; and, an outlook for the future of public health.</td>
</tr>
<tr>
<td>7189</td>
<td>Applied Practice Experience for Public Health</td>
<td>G 1 - 6</td>
<td>Applied practice experience. Prereq: Enrollment in Master of Public Health (MPH-PM or MPHPEP-PM) degree program, and permission of advisor. Repeatable to a maximum of 6 or 6 hrs or 6 completions. This course is graded S/U.</td>
</tr>
</tbody>
</table>
Public Health: Biostatistics

2210 Biostatistics for Public Health Research  
U  3
Hands-on experience using statistical tools to answer real-world questions. Students will design and implement a short survey and analyze their results. Emphasis on analysis of actual survey data using statistical software. Statistical topics include numerical/graphical summaries, measures of association, and hypothesis testing. Focus is on interpretation, not calculation. Prereq: Stat 1350, 1450, or equiv.

2210H Honors Biostatistics for Public Health Research  
U  3
Hands-on experience using statistical tools to answer real-world questions. Students will design and implement a short survey and analyze their results. Emphasis on analysis of actual survey data using statistical software. Statistical topics include numerical/graphical summaries, measures of association, and hypothesis testing. Focus is on interpretation, not calculation. Prereq: Honors standing, and Stat 1350 (135) or 1450 (145), or equiv; or permission of instructor.

3193 Individual Studies in Biostatistics  
U  1 - 6
Individual studies in Biostatistics focusing on applied topics. Prereq: Permission of Instructor. Repeatable to a maximum of 16 cr hrs or 6 completions. This course is graded S/U.

5280 Introduction to Genomic Data Analysis  
G  2
Provides an in-depth analysis of a specific question to which genomic methods are applied. Intersperses experimental methods and statistical analysis of biological data. Some experience with programming is recommended. Prereq: Jr standing or above, and Math 1151 or 1156, Stat 2450 or 2480, and Biology 1113 or MolGen 5660; or Grad standing; or permission of instructor.

6210 Design and Analysis of Studies in the Health Sciences I  
G  3
Theory and application of basic statistical concepts for design of studies in health sciences, integrated with statistical software applications. Pre req: Grad standing in PubHlth, or enrollment in MS Pharmacology program, or permission of instructor. Not open to students with credit for 701.

6211 Design and Analysis of Studies in the Health Sciences II  
G  3
A second course in applied biostatistical methods with an emphasis on regression methods commonly used in the health sciences. The focus is on linear regression and ANOVA. Integrated with use of computer statistical packages. Prereq: A grade of B- or above in 6210 (701), or permission of instructor. Not open to students with credit for 702.

6250 Regression Methods for the Health Sciences  
G  3
The course will focus primarily on regression models for the different generic problems including methods for hypothesis testing, evaluating assumptions, confounding, and selection of predictors. Prereq: 6211, or permission of instructor.

6260 Ethics in Biostatistics  
G  1
This course examines ethical challenges related to research design, data collection, data integrity and stewardship, data analysis and interpretation, and data reporting in the conduct of public health and biomedical research. Prereq: Enrollment in MPH-MP, PUBHLTH-MIS, or BIOS TAT-PH with Biostatistics specialization; or permission of instructor.

6270 Introduction to SAS for Public Health Students  
G  2
Introduction to programming using SAS software to accomplish public health data management and analysis. Prereq: Grad standing in PubHlth, or permission of instructor. Not open to students with credit for Stat 5740 or 6740.

7193 Individual Studies in Biostatistics  
G  1 - 6
Independent study in Biostatistics. Prereq: Permission of Instructor. Repeatable to a maximum of 16 cr hrs or 6 completions. This course is graded S/U.

7194 Group Studies in Biostatistics  
G  1 - 3
Group studies in biostatistical methods. Format will include lectures, readings, presentations and discussions in an area of special interest to students and faculty. Prereq: Permission of Instructor. Repeatable to a maximum of 12 cr hrs or 12 completions.

7215 Design and Analysis of Clinical Trials  
G  2
Design, monitoring, and analysis of clinical trials; includes protocol development, randomization schemes, sample size methods, and ethical issues. Prereq: Stat 5301, or PubHlth 6210, or equiv; or permission of instructor. Not open to students with credit for Stat 6615 (BioStat 615). Cross-listed in Stat 6615.

7220 Applied Logistic Regression  
G  3
Theoretical and practical training in statistical modeling of a categorical response variable: conditional and unconditional models, assessment of model performance, determination of scale. Prereq: A grade of B- or above in 6211 (702.xx). Not open to students with credit for 606.

7225 Survey Sampling Methods  
G  3
Sampling from finite populations, simple random, stratified, systematic and cluster sampling design, ratio and regression estimates, non-sampling errors, models. Prereq: 6211 (703) or Stat 5301 (529), or equiv. Not open to students with credit for Stat 6510 (651). Cross-listed in Stat 6510.

7230 Applied Longitudinal Data Analysis  
G  3
Statistical models and methods for the analysis of data arising from longitudinal studies with repeated measurements on subjects over time. Prereq: 6211, Stat 6450, or 6950. Not open to students with credit for 624.

7235 Applied Survival Analysis  
G  3
Introduction to time-to-event data analysis. Topics include summary statistics, non-parametric methods, semiparametric and parametric models, and competing risks analysis. Focus is on analysis of health data using statistical software. Prereq: 6211, Stat 6450, or 6950. Not open to students with credit for Stat 6605 (BioStat 605). Cross-listed in Stat 6605 (BioStat 605).

7240 Applied Statistical Analysis with Missing Data  
G  3
Models and methods for the dataset with missing values, including imputation, likelihood-based, and Bayesian models. Prereq: 6211 (703), or Stat 6201, or 6302, or 6802 (622), or 6302, or 6450, or 6950, or permission of instructor. Not open to students with credit for Stat 6520 (652). Cross-listed in Stat 6520.

7245 Biostatistical Collaboration  
G  2
Basic biomedical research methodologies; collaborate with biomedical researchers to design experiments and plan analyses; protocol preparation; professional skills development; statistical report preparation. Prereq: Grad standing and permission of instructor; sufficient coursework in Stat or BioStat to serve as a biostatistical consultant. Not open to students with credit for Stat 7775 (BioStat 775). Cross-listed in Stat 7775 (BioStat 775). This course is graded S/U.

7250 Special Topics  
G  1 - 6
Regular class on special topics in biostatistics. Format will include lectures, readings, presentations and discussions in an area of special interest to students and faculty. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions. This course is graded S/U.

7255 Introduction to Causal Inference in Health Science Research  
G  3
This is an introduction course to the commonly used statistical methods for causal inference. The course starts with potential outcome framework as the conceptual foundation for inferring causality. Prereq: B- or higher in 6211, or permission of instructor.
## Public Health: Environmental Health Sciences

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>3191</td>
<td>Individual Studies in Environmental Health Sciences</td>
<td>U 1 - 6</td>
<td></td>
</tr>
<tr>
<td>3310</td>
<td>Current Issues in Global Environmental Health</td>
<td>U 3</td>
<td></td>
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<tr>
<td>3320</td>
<td>Fundamentals of Environmental Health Risk Assessment</td>
<td>U 3</td>
<td></td>
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<tr>
<td>3330</td>
<td>Global Pandemics and Public Health</td>
<td>U 3</td>
<td></td>
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<tr>
<td>4325</td>
<td>Climate Change and Human Health</td>
<td>U 3</td>
<td></td>
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<tr>
<td>4330</td>
<td>Environmental Epigenetics</td>
<td>U 3</td>
<td></td>
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<tr>
<td>4530</td>
<td>Food Safety and Public Health</td>
<td>U 2</td>
<td></td>
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<tr>
<td>5315</td>
<td>Principles of Toxicology</td>
<td>U G 3</td>
<td></td>
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<tr>
<td>5325</td>
<td>Principles of Occupational Health Science</td>
<td>U G 3</td>
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<tr>
<td>5335</td>
<td>Ecology of Infectious Diseases</td>
<td>U G 3</td>
<td></td>
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<tr>
<td>5340</td>
<td>Air Contaminants and Public Health</td>
<td>U G 3</td>
<td></td>
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<tr>
<td>5345</td>
<td>Modeling Transmission and Control of Infectious Diseases in Humans and Animals</td>
<td>U G 3</td>
<td></td>
</tr>
<tr>
<td>5359</td>
<td>Engineering Design for Environmental Health</td>
<td>U G 3</td>
<td></td>
</tr>
<tr>
<td>6300</td>
<td>Environmental Health Science Issues in Health Administration</td>
<td>G 1%</td>
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</tr>
<tr>
<td>8230</td>
<td>Advanced Longitudinal Data Analysis</td>
<td>G 3</td>
<td></td>
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<tr>
<td>8235</td>
<td>Advanced Regression Modeling of Time-to-Event Data</td>
<td>G 3</td>
<td></td>
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<tr>
<td>8450</td>
<td>Stochastic Epidemic Models</td>
<td>G 3</td>
<td></td>
</tr>
<tr>
<td>8999</td>
<td>Doctoral Seminar</td>
<td>G 1 - 3</td>
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</tbody>
</table>

Seminar for doctoral students in Biostatistics. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 9 completions. This course is graded S/U.

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>3390</td>
<td>Principles of Environmental Health Science</td>
<td>G 3</td>
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</tr>
<tr>
<td>3395</td>
<td>Modeling Transmission and Control of Infectious Diseases</td>
<td>U G 3</td>
<td></td>
</tr>
<tr>
<td>6310</td>
<td>Global Health and Environmental Microbiology</td>
<td>G 3</td>
<td></td>
</tr>
<tr>
<td>6330</td>
<td>Environmental Epigenetics</td>
<td>G 3</td>
<td></td>
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<tr>
<td>6335</td>
<td>Ecology of Infectious Diseases</td>
<td>U G 3</td>
<td></td>
</tr>
<tr>
<td>6340</td>
<td>Air Contaminants and Public Health</td>
<td>U G 3</td>
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</tr>
</tbody>
</table>

This course will introduce students to the concept of air quality and will focus on the relatedness between its pollution and morbidity. Specifically, students will learn about the categories and types of air contaminants, their natural and anthropogenic sources, and the respiratory and extra-pulmonary effects of air pollution.

<table>
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<tbody>
<tr>
<td>6360</td>
<td>Principles of Environmental Health Science</td>
<td>G 3</td>
<td></td>
</tr>
<tr>
<td>6365</td>
<td>Environmental and Human Health Risk Assessment</td>
<td>G 3</td>
<td></td>
</tr>
</tbody>
</table>

This course will outline the fundamental sciences and their application in microbial risk modeling. Students will engage in lectures and project-based learning culminating in a functioning microbial risk model. Prereq: Grad level Stat course, or permission of instructor.
402 Public Health: Environmental Health Sciences

7380 Exposure Science Monitoring Techniques G 3
Environmental health science is a multidiscipline profession focusing mainly on public (human) health issues related to food/water/beverage sanitation, and water, air and land contamination and pollution. Emphasis on the principles and practices of human exposure monitoring of contaminants in air, water, soil, and food including field sampling, analytical instrumentation, and methods.

7899 Seminar in Environmental Health Sciences G 1 - 3
Seminar on topics that are relevant to students enrolled in programs in the division of environmental health sciences. Repeatable to a maximum of 9 or hrs or 9 completions. This course is graded S/U.

8340 Molecular Techniques for Environmental Health Sciences G 3
Practical introduction to molecular techniques, as applied to research in environmental health sciences. Prereq: Not open to students with credit for 835.

8899 Doctoral Seminar in Environmental Health Sciences G 1 - 3
Doctoral level seminar on topics that are relevant to students enrolled in the PhD program in health environmental health sciences. Repeatable to a maximum of 9 or hrs or 9 completions. This course is graded S/U.

Public Health: Epidemiology

2410 Introduction to Epidemiology U 3
Introduction to the study of public health; history, methods, applications, and issues in epidemiology.

3193 Individual Studies in Epidemiology U 1 - 6
Individual Studies in Epidemiology. Prereq: Permission of instructor. Repeatable to a maximum of 16 cr hrs or 6 completions. This course is graded S/U.

3410H Honors Case Studies in Public Health U 3
This is an advanced undergraduate course in epidemiology that is designed for Honors students in Public Health or a related field. Students will learn about how epidemiology is used in the field of Public Health through a case study approach. Prereq: Honors standing, and 2410.

4410 Social Epidemiology U 3
This course focuses on how social factors, such as education, neighborhood context, & structural & institutional racism are related to various population health outcomes. Students will learn theories that inform how social determinants of health are measured, & how epidemiologists use these measures to identify determinants of disease & ill health among populations, especially marginalized groups. Prereq: 2410, or permission of instructor.

4432 Injury: A Public Health Problem U 3
This introductory course in injury prevention & control is designed primarily for upper-division undergraduates. Students will be exposed to/learn to develop skills such as summarizing research findings, translating & communicating these findings to an identified audience, & utilizing policy & advocacy for initiating public health change as it relates to injury prevention and control. Prereq: 2410, and PubHHp 3510; or permission of instructor.

4437 Cancer Epidemiology U 3
Cancer epidemiology is the study of factors affecting the occurrence of cancer. This course will familiarize students with basic concepts, data sources, and analytic methods commonly used in cancer epidemiology research and practice. Prereq: 2410.

5411 Outbreak Investigations U G 3
Principles and practice of field epidemiology, including outbreak investigation and disease surveillance. Prereq: 2410, or Grad standing, or permission of instructor. Not open to students with credit for 615.

5412 Infectious Diseases in the Developing World U G 3
Introduction to the study of infectious diseases in the developing world. Recommended: 2410. Prereq: Not open to students with credit for 718.

5421 Mathematics of Infectious Disease Dynamics U G 3
Provides an introduction to mathematical modeling of infectious diseases, including techniques for building and analyzing disease models, and discussions of calibration and comparison of models with data. This course is intended for graduate students in public health or other related disciplines and for upper level undergraduate and graduate mathematics students. Prereq: Math 1152, 1172, or 153; or permission of instructor. Cross-listed in Math.

5438 Cardiovascular Disease Epidemiology U G 3
Introduction to the epidemiology of cardiovascular disease; risk factors, specific diseases, diagnostic procedures; review of classic and current studies. Prereq: 2410, 6410, or 6430; or permission of instructor. Not open to students with credit for 817.

5440 Principles of Epidemiology G 3
Introduction to the nature and scope of epidemiology; survey of basic epidemiological methods and their application to selected acute and chronic health problems. For non-majors. Prereq: Not open to students with credit for 5430.

6411 Biological Basis of Public Health G 3
Molecular and epidemiologic evidence of biological mechanisms in major diseases of concern for public health. Prereq: Grad standing in Public Health, or permission of instructor. Not open to students with credit for 704.

6412 Basic Principles in Clinical and Translational Science G 2
Identification of clinical and translational research issues, assessment of the literature, ethically responsible research, cross-disciplinary training and mentoring. Prereq: Enrollment in MPH-CTS program, or permission of instructor. Repeatable to a maximum of 2 completions. This course is graded S/U.

6413 Conducting and Communicating Research in Clinical and Translational Science Design and writing of protocol, study methods and implementation, community engagement, informatics, translational teamwork. Scientific communication skills and dissemination of clinical and translational science. Prereq: Enrollment in MPH-CTS program, or permission of instructor. Repeatable to a maximum of 2 completions. This course is graded S/U.

6415 Nutrition in Public Health G 3
Relationships between dietary intake and diseases affecting the public health. Prereq: 6410 or 6430, or permission of instructor.

6430 Epidemiology I G 4
Introduction to the nature and scope of epidemiology; survey of basic epidemiological methods and their application to selected acute and chronic health problems. Lecture and laboratory sessions. Prereq: Enrollment in MPH-Epidemiology, or any Public Health MS or PhD program, or permission of instructor. Not open to students with credit for 710.

6431 Design and Implementation of Health Surveys G 3
Introduction to health survey methods, with public health applications. Prereq: 6410 or 6430, or permission of instructor. Not open to students with credit for 705.

6432 Injury Epidemiology G 2
Introduction to injury epidemiology; historical context, trends, research methods and issues; survey of areas of injury epidemiology and prevention. Prereq: 6410 or 6430, or permission of instructor. Not open to students with credit for 714.

6435 Chronic Disease Epidemiology G 3
Survey of the epidemiology of chronic diseases, including cancer, heart disease, stroke, diabetes mellitus, chronic obstructive pulmonary disease, and neurodegenerative diseases. Prereq: 6410 or 6430, or permission of instructor. Not open to students with credit for 814.

6436 Infectious Disease Epidemiology G 3
Introduction to the epidemiology of infectious diseases, with focus on basic methods for investigation, control, and prevention of communicable disease. Prereq: 6410 or 6430, or permission of instructor. Not open to students with credit for 815.

6437 Cancer Epidemiology G 3
Epidemiology of cancer, including etiology, risk factors, neoplastic processes, screening, control; application of statistical methods; molecular genetic basis of carcinogenesis. Prereq: 6410 or 6430, or permission of instructor. Not open to students with credit for 816.

6440 Reproductive and Perinatal Epidemiology G 3
Epidemiology of reproductive and perinatal health and methodological challenges unique to this area. Prereq: 6410 or 6430, or permission of instructor. Not open to students with credit for 820.

6441 Women's Health Issues G 3
Overview of issues related to women's health from epidemiological and behavioral perspectives. Prereq: 6410 or 6430, or permission of instructor. Not open to students with credit for 818.

6442 Social Epidemiology G 3
Social and structural contributors to the distribution of health and disease in populations with emphasis on measurement and methodological challenges. Prereq: 4410, 6410, or PubHHp 6001, and Grad standing; or permission of instructor.

7193 Individual Studies in Epidemiology G 1 - 6
Individual Studies in Epidemiology. Prereq: Permission of instructor. Repeatable to a maximum of 16 cr hrs or 6 completions. This course is graded S/U.

7194 Group Studies in Epidemiology G 1 - 3

7410 Epidemiology II G 4
Design of epidemiologic studies including cross-sectional studies, case-control studies, cohort studies, clinical trials, and group-randomized trials. Prereq: 6430, or permission of instructor. Not open to students with credit for 711.
Principles and application of epidemiologic methods in the investigation and control of health problems stemming from environmental hazards.

Prerequisite: 6430, or permission of instructor. Not open to students with credit for 713.

Principles and procedures for clinical professionals in the design, conduct and analysis of human clinical trials.

Prerequisite: 7410 and PubBio 6211, or permission of instructor. Not open to students with credit for 715.

Analysis and interpretation of data from case-control and cohort studies and from clinical trials.

Prerequisite: 7410 and 6211, or permission of instructor. Not open to students with credit for 712.

Critique and justification for methods of designing, analyzing and interpreting epidemiological data; social, historical and philosophical foundations of epidemiological methods.

Prerequisite: 7410 and PubBio 6211, or permission of instructor.

Covers the function and control of phytochemicals in plants, the function of phytochemicals in human health, delivery of phytochemicals through foods in the diet, strategies when designing studies examining foods for health, and policy and sustainability considerations.

Prerequisite: Biochem 4511 (511) or 5813 (613), or equiv; or permission of instructor. Not open to students with credit for FdScTe 7810. Cross-listed in FdScTe, HumnNtr, BSGP, and HCS.

The goal of this course is to facilitate students through the process of developing their Integrative Learning Experience (ILE). By the end of the semester, it is expected that students will have submitted their ILE proposals and literature reviews, ILE approval form, and their application to the IRB and other review boards as needed.

Prerequisite: Enrollment in MPH program in Epidemiology. This course is graded S/U.

Prevalence, trends, risk factors, measurement, outcomes and issues related to obesity; critical scientific issues in evaluation; and skill building in both qualitative and quantitative evaluation methods.

Prerequisite: Grad standing. Repeatable to a maximum of 12 cr hrs or 6 completions. This course is graded S/U.

Problems and strategies for effective behavioral and social change efforts, and working with the community.

Prerequisite: Grad standing, and enrollment in Public Health program. Not open to students with credit for 720.

This course will address the philosophical underpinnings, health behavior theories, and strategies for effective behavioral and social change efforts in public health.

Prerequisite: Enrollment in College of Public Health Graduate Program with specialization in Health Behavior and Health Promotion.

This class provides the opportunity to review a number of concepts critical to collaborative community problem-solving. A broad range of literature will be reviewed and students will have the opportunity to experience several simulated processes unique to the collaborative problem-solving process.

Prerequisite: 6510, or permission of instructor.

Individually designed study of selected topics in health behavior and health promotion.

Prerequisite: Permission of instructor. Repeatable to a maximum of 16 cr hrs or 16 completions. This course is graded S/U.

Models of community health assessment; skills in identifying, analyzing and integrating information concerning community resources and needs.

Prerequisite: Enrollment in Public Health, and Grad standing; or permission of instructor.

Planning and implementation of programs to address public health issues in defined populations; development of a health promotion program for a specific community partner.

Prerequisite: Enrollment in Public Health, or Grad standing; or permission of instructor. Not open to students with credit for 827.

Professional practice settings and expectations for health promotion; application of health promotion theories and perspectives to community problems.

Prerequisite: Enrollment in Public Health, and Grad standing; or permission of instructor. Not open to students with credit for 820.

Examination of evaluation models for public health programs; exploration of philosophical and scientific issues in evaluation; and skill building in both qualitative and quantitative evaluation methods.

Prerequisite: Enrollment in Public Health, and Grad standing; or permission of instructor.

Social science research methods emphasizing methods used to assess the dimensions of health-relevant behaviors and community-based prevention research.

Prerequisite: Enrollment in Public Health, and Grad standing; or permission of instructor. Not open to students with credit for 834.

Critical characteristics of principal settings in which health promotion interventions occur and populations to which they apply such as youth, elderly, racial and ethnic minorities.

Prerequisite: Enrollment in Public Health, and Grad standing; or permission of instructor. Not open to students with credit for 622.

Presents the ideas that population health is determined by factors outside of health care and individual behavior occurs within a social context.

Prerequisite: Enrollment in Public Health, and Grad standing; or permission of instructor. Not open to students with credit for 830.

Regular class on topics that are relevant to students enrolled in programs in the Division of Health Behavior and Health Promotion.

Prerequisite: Grad standing. Repeatable to a maximum of 12 cr hrs or 6 completions.
This course will prepare graduate students on the key elements of how policy can be used as an intervention to promote primary, secondary, and tertiary prevention.

**Prereq:** Enrollment in Public Health, and Grad standing; or permission of instructor.

### Theoretical Approaches to Health Behavior Change in Public Health Applications

Major theories drawn from social and behavioral science literature, pertinent to understanding and addressing problems in health behavior.

**Prereq:** Enrollment in Public Health, and Grad standing; or permission of instructor.

### A Public Health Approach to Adolescent Health

Focuses on the health of adolescents in the United States. Emphasis is on examining health and risk behaviors from developmental & contextual perspectives with reference to policies and programs for preventing health problems and promoting the well-being of this population.

### Obesity, a Multidisciplinary Foundation

This course examines the context, causes, and consequences of obesity in the United States today. We will begin with an examination of trends in obesity and a description of the scope of the problem. Next, the course will examine physiological, psychological, sociological, and economic factors that contribute to the obesity problem. Cross-listed in HDFS.

### Seminar: Integrative Learning Experience I

The purpose of the integrative learning experience is to provide students with the opportunity to integrate and synthesize knowledge and experience obtained during their academic course of study. Most culminating projects focus on: (A) Community assessment; (B) Program planning and implementation; (C) Program evaluation or (D) Other projects as approved by your advisor.

**Prereq:** Open only to MPH Health Behavior Health Promotion students preparing for their integrative learning experience. This course is graded S/U.

### Seminar: Integrative Learning Experience II

The purpose of the integrative learning experience is to provide students with the opportunity to integrate and synthesize knowledge and experience obtained during their academic course of study. Most culminating experiences focus on: (A) Community assessment; (B) Program planning and implementation; (C) Program evaluation or (D) Other projects as approved by your advisor.

**Prereq:** Open only to MPH Health Behavior Health Promotion students preparing for their culminating project. This course is graded S/U.

### Advanced Theory of Health Behavior Change in Public Health Applications

In-depth examination of theories pertinent to health behavior including history and critique of theoretical approaches.

**Prereq** or concour: 7562.

### First Year Doctoral Seminar in HBHP

Seminar concerning academic and professional development topics for Ph.D. students, with a focus on selecting research topics, reviewing research, course development, and other topics. **Prereq:** Enrollment in Health Behavior and Health Promotion Ph.D. Program. Repeatable to a maximum of 2 or hrs. This course is graded S/U.

### Second Year Doctoral Seminar in HBHP

A seminar for Ph.D. students in Health Behavior and Health Promotion emphasizing the selection and development of research projects including proposing preparation and funding sources.

**Prereq:** Enrollment in PubHHBP Ph.D. Program. Repeatable to a maximum of 2 or hrs. This course is graded S/U.

### Individual Studies in Health Services Management and Policy

Individual studies in Health Services Management and Policy.

**Prereq:** Permission of instructor. Repeatable to a maximum of 16 or hrs or 6 completions. This course is graded S/U.

### United States & International Health Care

Introduction to the history, organization and politics of the global health care system, critical review of selected issues using different analytic frameworks.

**Prereq:** Grad standing; or permission or instructor.

### Health Economics for Health and Policy Students

This course is designed to provide an intuitive understanding of health economics and policy for non-economists. It will cover the basics and health markets and apply those concepts to policy applications. Economics 2001.01 recommended but not required.

### Health Care Organization for Experienced Professionals

Analysis of arrangements for the organization, financing and delivery of health care services.

**Prereq:** Not open to students with credit for 800.

### Introduction to Health Care Organization

Analysis of arrangements for the organization, financing, and delivery of health care services.

**Prereq:** Not open to students with credit for 800.

### Health and Health Care Services in the U.S.

This course provides an overview of the U.S. health care system. Topics covered include health and health care disparities, social determinants of health, health care access and utilization, financing of care through public and private health insurance, provider reimbursement, assessment of quality, quality improvement, and new forms of health care delivery and payment.

**Prereq:** Enrollment in MPH-HMP program, or HSMP-MHA program, or PUBHLTH-PH program, or permission of instructor. Not open to students with credit for 800.

### Public Health Leadership and Organizational Behavior

This course introduces students to major theories and concepts of organizational behavior and leadership and applies these to challenges facing public health organizations.

**Prereq:** Grad standing, or permission of instructor.

### Critical Appraisal of Population Health Evidence

This course will provide practical experience in examining multiple sources of evidence on population health management and public health interventions and will introduce students to the tools used to perform systematic reviews.

**Prereq:** Grad standing, or permission of instructor.

### Levieraging Healthcare Data for Practice and Policy Change

This course will prepare students to develop questions for and utilize results from healthcare database research. Strengths and limitations of healthcare databases commonly used for research will be considered, and special attention will be devoted to nationally representative databases and local electronic medical record data.

**Prereq:** A grade of C- or higher in PubH 6410 and PubH 6210; or permission of instructor.

### Project Management for Health Care and Public Health

This course introduces students to the role of project management in executing successful projects. The course focuses on concepts & tools of basic project management, with a special emphasis on managing projects in health care & public health settings. Students will learn fundamental techniques for project planning, scheduling & monitoring through case studies, class exercises and assignments.

**Prereq:** Grad standing, or permission of instructor.

### Individual Studies in Health Services Management and Policy

Study of individually designed topics not otherwise available in the curriculum.

**Prereq:** Permission of Instructor. Repeatable to a maximum of 16 or hrs or 6 completions.

### Group Studies in Health Services Management and Policy

Group studies of special topics within health services management and policy. Repeatable to a maximum of 9 or hrs or 6 completions. This course is graded S/U.

### Economic Analysis of Health Services

This course will cover applications of microeconomic analysis to the health services industry, with emphasis on the market structure and managerial decisions.

**Prereq** or concour: 6611, or permission of instructor. Not open to students with credit for 801.

### Health Insurance and Payment Policy

This course examines the health insurance mechanisms used to pay for healthcare in the United States. The course will examine the U.S.'s origins, the incentives and policy implications that the system creates, past and present reforms, and how the US system compares to health care financing systems in other industrialized countries.

**Prereq:** Grad standing in HSMP, HSMP-MHA, MPH-MP with HMP specialization, or PUBHLTH-PH with HMP specialization, or permission of instructor. Not open to students with credit for 802.

### Economic Evaluation of Health Care Programs

Intended to give students an overview of the theory and applications of cost-benefit analysis, cost-effectiveness analysis, cost-utility analysis and related forms of economic evaluation of interventions in the health care sector.

**Prereq:** Grad standing, or permission or instructor.

### Introduction to Health Policy

Introduction to public policy concepts and processes as they apply to the organization, financing, and delivery of health services.

**Prereq:** 6611, or permission of instructor. Not open to students with credit for 805.

### Applied Health Policy

Introduction to public policy concepts and processes as they apply to the organization, financing, and delivery of health services.

**Prereq:** 6609, or permission of instructor. Not open to students with credit for 805.

### The Role of Science in Health Policy-Making

This course will explore the role that science, including social science, plays in public health & health services policy-making. It will consider the conditions under which scientific research findings do & do not influence policy-making with reference to the nature of scientific inquiry & of public policy; the intellectual, institutional, and practical similarities & differences between them.
7610 Public Health Law  G  3
The course will focus on the use of legal tools to improve the public's health. The course will survey the legal framework in which the government may regulate for the public's health, addressing issues including the origins and scope of public health authority, constitutional limits on public health powers, emergency legal preparedness, and public health tort litigation. Cross-listed in Law 8810.

7611 Health Care Law for Managers  G  3
Overview of the U.S. legal system as it applies to the U.S. health care field. Prereq: Grad standing in HSMP-MHA, or MPH-MP and HMP subplan, or PUBHLM-Ph and HMP subplan, or permission of instructor. Not open to students with credit for 811.

7612 Food and Drug Law  G  3
This course explores various FDA law and policy issues related to the regulation of food, drugs, biologics, devices, and tobacco products. Cross-listed in Law 8811.

7613 Tobacco Regulation and Policy  G  2
This course examines the regulation of tobacco, with a focus on the role of the US FDA. This course highlights the history, significant provisions, and effects of the 2009 Tobacco Control Act, as well as the vital role that public health researchers and professionals play in influencing how the FDA implements the Act.

7615 Health Services Organizational Management  G  3
This course is designed to provide students with a strong foundation in health services management, focusing on human resources management and organizational behavior. Prereq: Grad standing in Public Health (MPH-MHP, MHA, or PHD) or permission of instructor. Not open to students with credit for 815.

7617 Health Services Leadership and Organizational Change  G  3
Overview of leadership and organizational change theories, as well as the application of those theories to case studies in health sector organizations. Prereq: 7615 and Grad standing in the HSMP-MHA program, or permission of instructor. Not open to students with credit for 817.

7620 Health Services Finance I  G  3
Principles of finance and accounting applied to health service organizations. Prereq: An introductory course in financial accounting, or permission of instructor. Not open to students with credit for 820.

7621 Health Services Finance II  G  3
Continuation of 7620 emphasizing financial analysis, financial planning, and capital project analysis. Prereq: 7620, or permission of instructor. Not open to students with credit for 821.

7622 Health Services Financial Decision-Making  G  3
Principles of financial decision-making in health service organizations, with emphasis on applications of decision support systems. Prereq: 7621, or permission of instructor. Not open to students with credit for 822.

7624 Health Economics for Experienced Professionals  G  3
Designed for public health professionals who wish to enhance their knowledge of the economic principles that drive the health care system. The course will introduce you to the use of economic analysis and economic evaluation for healthcare decision making. Prereq: Not open to students with credit for 824.

7631 Strategic Management and Program Development  G  3
Techniques and methods for strategic management and project planning in health care organizations and settings. Prereq: Enrollment in MHA program, or permission of instructor. Not open to students with credit for 831.

7632 Strategic Change for Public Health and Population Mgmt  G  3
This course will provide students a foundation in the theories, concepts & methods of strategic planning and the management of organizational change as applied to public health & population health management endeavors.

7640 Mental Health & Disability Policy  G  3
Investigation of public policy in the area of mental health and disability and the politics that are the origin and result of these policies. Prereq: Not open to students with credit for 840.

7672 Clinical Rotations  G  1½
Individual assignments within health care organizations to observe operations. Prereq: Grad standing in PubHHMP, or permission of instructor. Not open to students with credit for 870.02.

7673 Understanding Health Care Organization Data  G  1½
Application of data from various sources to inform decision making in health services settings and in health policy. Prereq: PubHbio 6210, or permission of instructor. Not open to students with credit for 870.03.

7675 Human Resources Management in Health Care  G  1½
Overview of human resources and its strategic importance to health care organizations. Prereq: Not open to students with credit for 870.05.

7676 Health Care Marketing  G  1½
Overview of topics in marketing and communications and how they apply to health care delivery. Prereq: Not open to students with credit for 870.06.

7678 Approaches to Health Services Research  G  3
Overview of the field of health services research and the role of health services research in improving health care delivery. Prereq: PubHbio 6210 and PubHHepl 6410, or permission of instructor. Not open to students with credit for 871.

7679 Quality & Patient Safety  G  1½
Examination of quality management and quality measurement in health care with emphasis on patient safety. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

7680 Operations Management for Health Service Organizations  G  3
Concepts and techniques for managing operation in health service organizations; emphasis on management perspective and decision-making. Prereq: Grad standing in PubHHMP, or permission of instructor. Not open to students with credit for 880.

7682 Information Systems for Health Services Organizations  G  1½
This course is designed to provide students with an understanding of issues in the management of information and information technology in health care organizations, the role of information technologies in improving organizational performance, and the application of information technologies in health service organizations. Prereq: 7680, or permission of instructor. Not open to students with credit for 882.

7683 Operations Management and System Design  G  3
This course is designed to introduce students to fundamental theories, principles and practices for designing and managing operations. The course is structured to emphasize the unique aspects of process and system design in the health care organizations and in the community health system, including processes that cross organizational boundaries and include diverse stakeholders.

7684 Health Services Strategy and Marketing  G  3
Students will learn principles, discipline, & analytic tools that comprise successful strategic management in healthcare organizations, including: strategic assessment, strategy development, implementation planning, & marketing. Emphasis will be placed on exploring strategic issues related to transitioning from volume to value-based models of care, impacts of ACA & population & community health. Prereq: Grad standing in Public Health - Health Services Management and Policy Master of Health Administration program, or permission of instructor. Not open to students with credit for 7631.

7685 Healthcare Management Consulting Practice  G  3
To develop management consulting practice skills involving strategic thinking, planning, analysis, and implementation phases of consulting engagements. Prereq: Enrollment in HSMP-MHA program, or permission of instructor.

7686 Qualitative Methods for Health Research  G  3
This course introduces students to the methods and uses of qualitative research applicable both to public health and to the full range of health sciences. Prereq: One or more graduate research methods courses (such as statistics, research design, survey research), and Grad standing; or permission of instructor.

7689 Seminar in Health Services Management and Policy  G  1 - 3
Small group seminar with focus on integrative projects in health services management and policy. Prereq: Grad standing in PubHHMP, or permission of instructor. Repeatable to a maximum of 4 cr hrs or 2 completions.

8671 Health Care Outcomes Measurement  G  2
Evaluation of specific techniques for measuring outcomes in clinical and health services research studies. Prereq: Grad standing in PubHHMP, or permission of instructor.

8672 Advanced Topics in Health Policy  G  4
Designed for doctoral and advanced masters students in the College of Public Health and other OSU colleges. It will provide students with a solid background of high-level policy scholarship on topics fundamental to the health care system. Prereq: 7605 or 7640; or permission of instructor.

8899 Doctoral Seminar in Health Services Management and Policy  G  1 - 2
Doctoral level seminar on topics that are relevant to students enrolled in the PhD program in health services management and policy. Prereq: Grad standing in Public Health, or permission of instructor. Repeatable to a maximum of 9 cr hrs or 6 completions. This course is graded S/U.
Quechua
5501.01 Beginning Quechua I: Classroom U G 4
Quechua 5501.01 (501) is a beginning language course for students with no previous study experience in Quechua. This course will be comprehensive, integrating culture and language from the southern Quechua family spoken in Peru.
Prereq: Not open to students with credit for 5501.51 or 501 or to native speakers. This course is available for EM credit. GE for lang course. FL Admis Cond course.

5501.51 Beginning Quechua I: Individualized Instruction U G 1 - 4
Quechua 5501.51 (501) is a beginning language course for students with no previous study experience in Quechua. This course will be comprehensive, integrating culture and language from the southern Quechua family spoken in Peru.
Prereq: Not open to students with credit for 5501.01 (501) or to native speakers. Repeatable to a maximum of 4 cr hrs or 4 completions. This course is available for EM credit. GE for lang course. FL Admis Cond course.

5502.01 Beginning Quechua II: Classroom U G 4
For students who have taken Quechua 5501.01 (501) or who have previous basic knowledge of Quechua at the beginning level. This course will be comprehensive, integrating culture and language from the southern Quechua family spoken in Peru.
Prereq: 5501.01 (501), or 4 cr hrs of 5501.51; or permission of instructor. Not open to students with credit for 5502.51 or 502 or to native speakers. This course is available for EM credit. GE for lang course. FL Admis Cond course.

5502.51 Beginning Quechua II: Individualized Instruction U G 1 - 4
For students who have taken Quechua 5501.01 or 5501.51 (501) or who have previous basic knowledge of Quechua at the beginning level. This course will be comprehensive, integrating culture and language from the southern Quechua family spoken in Peru.
Prereq: 5501.01 (501), or 4 cr hrs of 5501.51; or permission of instructor. Not open to students with credit for 5502.01 (502) or to native speakers. Repeatable to a maximum of 4 cr hrs or 4 completions. This course is available for EM credit. GE for lang course. FL Admis Cond course.

5503.01 Intermediate Quechua I: Classroom U G 4
For students who have taken Quechua 5502.01 (502) or who have previous basic knowledge of Quechua at the beginning/intermediate level. This course will be comprehensive, integrating culture and language from the southern Quechua family spoken in Peru.
Prereq: 5502.01 (502), or 4 cr hrs of 5502.51; or permission of instructor. Not open to students with credit for 5503.51 or 503 or to native speakers. This course is available for EM credit. GE for lang course. FL Admis Cond course.

5503.51 Intermediate Quechua I: Individualized Instruction U G 1 - 4
For students who have taken Quechua 5502.01 (502) or who have previous basic knowledge of Quechua at the beginning/intermediate level. This course will be comprehensive, integrating culture and language from the southern Quechua family spoken in Peru.
Prereq: 5502.01 (502), or 4 cr hrs of 5502.51; or permission of instructor. Not open to students with credit for 5503.01 (503) or to native speakers. Repeatable to a maximum of 4 cr hrs or 4 completions. This course is available for EM credit. GE for lang course. FL Admis Cond course.

5504.01 Intermediate Quechua II: Classroom U G 4
Quechua 5504.01 (504) is an intermediate language course intended for students with experience in Quechua. The variety taught will be from the southern Quechua family spoken in Bolivia and Peru. Closed to native speakers of this language.
Prereq: 5503.01 (503), or 4 cr hrs of 5503.51; or permission of instructor. Not open to students with credit for 5504.51. This course is available for EM credit. FL Admis Cond course.

5504.51 Intermediate Quechua II: Individualized Instruction U G 1 - 4
Quechua 5504.51 is an intermediate language course intended for students with experience in Quechua. The variety taught will be from the southern Quechua family spoken in Bolivia and Peru. Closed to native speakers of this language.
Prereq: 5503.51, or 4 cr hrs of 5504.51; or permission of instructor. Not open to students with credit for 5504.51. This course is available for EM credit. FL Admis Cond course.

5505.01 Advanced Quechua I: Classroom U G 3
Quechua 5505.01 is an advanced language course intended for students with experience in Quechua. This course is comprehensive, integrating culture and language. It will be useful for students that want to travel to the Andean countries or who have an interest in studying Quechua language, culture and society. The variety taught is from the southern Quechua family spoken in Bolivia and Peru.
Prereq: 5504.01 or 4 cr or 5504.51, or permission of instructor. Students enrolled in Quechua 5501.01/51, 5502.01/51, 5503.01/51, and 5504.01/51 are not eligible to enroll simultaneously in subsequent levels of Quechua. FL Admis Cond course.

5505.51 Advanced Quechua I: Individualized Instruction U G 1 - 3
Quechua 5505.51 is an advanced language course intended for students with experience in Quechua. This course is comprehensive, integrating culture and language. It will be useful for students that want to travel to the Andean countries or who have an interest in studying Quechua language, culture and society. The variety taught is from the southern Quechua family spoken in Bolivia and Peru. Students enrolled in Quechua 5501.01/51, 5502.01/51, 5503.01/51, and 5504.01/51 are not eligible to enroll simultaneously in subsequent levels of Quechua.
Prereq: 5504.01 or 4 cr hrs of 5504.51, or permission of instructor. Repeatable to a maximum of 3 cr hrs or 3 completions. This course is available for EM credit.

5506.01 Advanced Quechua II: Classroom U G 3
Quechua 5506.01 is an advanced language course intended for students with experience in Quechua. This course is comprehensive, integrating culture and language. It will be useful for students that want to travel to the Andean countries or who have an interest in studying Quechua language, culture and society. The variety taught is from the southern Quechua family spoken in Bolivia and Peru.
Prereq: 5505.01, or permission of instructor. FL Admis Cond course.

5506.51 Advanced Quechua II: Individualized Instruction U G 1 - 3
Quechua 5506.51 is an advanced language course intended for students with experience in Quechua. This course is comprehensive, integrating culture and language. It will be useful for students that want to travel to the Andean countries or who have an interest in studying Quechua language, culture and society. The variety taught is from the southern Quechua family spoken in Bolivia and Peru.
Prereq: 5505.01 or 3 credits of 5505.51, or permission of instructor. Repeatable to a maximum of 3 cr hrs or 3 completions. This course is available for EM credit.

Radiologic Sciences and Therapy
3089 Radiography Practicum I U 1 - 10
Clinical application of diagnostic radiographic and fluoroscopic imaging performed in radiology. A direct field experience will provide the student with 16-24 hours of clinical experience in imaging departments of a clinical affiliate. Prereq: Enrollment in RadSci, or permission of instructor. Repeatable to a maximum of 10 cr hrs or 2 completions. This course is available for EM credit.

3189 Radiography Practicum II U 1 - 10
Clinical application of diagnostic radiographic and fluoroscopic imaging performed in radiology. A direct field experience will provide the student with 16-24 hours of clinical experience in imaging departments of a clinical affiliate. Prereq: 3089, and acceptance to the Radiography program.

3200 Evidence Based Practice in the Radiologic Sciences U 2
Introduction to radiologic sciences focusing on innovations impacting clinical practice. The scientific writing process is used to implement the process of analyzing and synthesizing credible evidence to advance clinical practice skills.
Prereq: Acceptance in the Radiologic Sciences and Therapy Division.

3200E Evidence Based Practice in the Radiologic Sciences U 2
Introduction to radiologic sciences focusing on innovations impacting clinical practice. The scientific writing process is used to implement the process of analyzing and synthesizing credible evidence to advance clinical practice skills.
Prereq: Acceptance in the Radiologic Sciences and Therapy Division.

3289 Radiation Therapy Practicum I U 1 - 10
Clinical application of patient care, simulation and treatment procedures performed in Radiation Therapy. Emphasis is directed toward competently performing machine function and patient setup.
Prereq: Enrollment in RadSci, or permission of instructor. This course is available for EM credit.

3310 Introduction to the Radiation Sciences U 3
Introduction to the fields in the radiation sciences. Radiation safety, patient care, and clinical practice principles will be emphasized. Application of principles will be reinforced in laboratory sessions.
Prereq: Enrollment in RadSci, or permission of instructor. This course is available for EM credit.

3389 Radiation Therapy Practicum II U 1 - 10
Clinical application of patient care, simulation and treatment procedures performed in Radiation Therapy. Emphasis is directed toward competently performing machine function and patient setup.
Prereq: 3289, and enrollment in RadSci; or permission of instructor.

3411 Radiographic Procedures I U 3
Principles of radiography of the chest, bronchial tree, abdomen, alimentary tract, and appendicular skeleton, with application in the laboratory.
Prereq: Enrollment in RadSci, or permission of instructor. This course is available for EM credit.

3412 Radiographic Procedures II U 3
Principles of radiography of the vertebral column, spinal canal, bony thorax, cerebral and visceral cranium, arthrography, urinary system, and reproductive systems.
Prereq: Enrollment in RadSci, or permission of instructor. This course is available for EM credit.

3414 Radiation Therapy Equipment and Instrumentation U 4
An introduction to the terminology, treatment charting, simulation, beam alignment, machine components, and the technical aspects of treatment in a clinical environment.
Prereq: Enrollment in RadSci, or permission of instructor. This course is available for EM credit.
3425 Radiographic Imaging I U 3
Investigation of the principles of radiation production, radiation protection and radiologic image formation.
Prereq: Enrollment in RadSci, or permission of instructor. Not open to students with credit for 425 or RadTech 425. This course is available for EM credit.

3589 Diagnostic Medical Sonography Practicum I U 1 - 8
Instruction and experience in the performance and interpretation of sonographic images.
Prereq: Enrollment in RadSci, or permission of instructor. Repeatable to a maximum of 16 cr hrs or 2 completions. This course is available for EM credit.

3573 Applied Radiation Oncology I U 3
Introduction to neoplastic disease including incidence, mortality, epidemiology, etiology, detection, prevention, risk, stage and grading. Emphasis on radiation treatment positioning, fields, and doses of disease sites.
Prereq: Enrollment in RadSci, or permission of instructor. This course is available for EM credit.

3574 Applied Radiation Oncology II U 3
A continuation of RadSci 3573 with an emphasis on radiation treatment positioning, fields, and doses of neoplastic disease sites. Prereq: 3573.

3589 Diagnostic Medical Sonography Practicum II U 1 - 8
Instruction and experience in the performance and interpretation of sonographic images.
Prereq: Enrollment in RadSci, or permission of instructor. Repeatable to a maximum of 16 cr hrs or 2 completions. This course is available for EM credit.

3672 Radiologic Sectional Anatomy U 3
Identification of anatomic structures as seen in cadaver, CT, MRI, and sonographic from multiple orientations. To include volumes, 3-D anatomical imaging. Prereq: Enrollment in RadSci, or permission of instructor. This course is available for EM credit.

3689 Sonography Practicum III U 1 - 10
Instruction and experience in the performance and interpretation of sonographic images. Prereq: 3589, and acceptant to the Sonography program.

4089 Radiography Practicum III U 1 - 10
Clinical application of diagnostic radiographic and fluoroscopic imaging performed in radiology. A direct field experience will provide the student with 32 hours of clinical experience per week in imaging departments of a clinical affiliate. Prereq: 3089, and enrollment in RadSci; or permission of instructor. Repeatable to a maximum of 15 cr hrs or 2 completions. This course is available for EM credit.

4189 Radiography Practicum IV U 1 - 10
Clinical application of diagnostic radiographic and fluoroscopic imaging performed in radiology. A direct field experience will provide the student with 16-24 hours of clinical experience per week in imaging departments of a clinical affiliate. Prereq: Enrollment in RadSci, or permission of instructor. Repeatable to a maximum of 15 cr hrs or 2 completions. This course is available for EM credit.

4289 Radiography Practicum V U 1 - 10
Clinical application of diagnostic radiographic and fluoroscopic imaging performed in radiology. A direct field experience will provide the student with 16-24 hours of clinical experience per week in imaging departments of a clinical affiliate. Prereq: Enrollment in RadSci, or permission of instructor. Repeatable to a maximum of 15 cr hrs or 2 completions. This course is available for EM credit.

4325 Administrative and Quality Management in Sonography U 3
This course will prepare sonography students with an intermediate understanding of how quality management is used to bring forth excellence in a sonography lab located within clinical settings. Prereq: Enrollment in RadSci, or permission of instructor.

4326 Management Strategies in Radiologic Sciences U 2
This course is provided to senior Radiologic Sciences and Therapy students in preparation for management in a hospital or clinical setting. The student will achieve an advanced understanding of management principles. Prereq: Enrollment in RadSci.

4389 Radiation Therapy Practicum III U 1 - 10
Clinical application of patient care, simulation, treatment and brachytherapy procedures performed in Radiation Therapy. Emphasis is directed toward machine function, patient set up and variation in procedures. Prereq: 3289 and 3389, and enrollment in RadSci; or permission of instructor. Repeatable to a maximum of 10 or hrs. This course is available for EM credit.

4426 Radiographic Imaging II U 3
Advanced radiologic image formation, image assessment, and radiographic quality management and testing. Prereq: Enrollment in RadSci, or permission of instructor. This course is available for EM credit.

4432 General Concentration in Sonography 3 U 3
Focuses on the use of medical sonography to image anatomy and pathology associated with the chest, abdominal, extremities and neonatal cranial structures. Prereq: Enrollment in RadSci, or permission of instructor. This course is available for EM credit.

4478 Radiation Therapy Physics I U 3
Analysis of atomic structure, production, modes of radioactive decay and calculation of source activity. Fundamental applications of brachytherapy implants as it relates to specific source handling, treatment techniques, and treatment planning. Prereq: Enrollment in RadSci, or permission of instructor.

4482 Radiation Therapy Physics II U 3
An analysis of interaction and measurement of ionizing radiation in radiation therapy. Concepts include beam quality, measurement of absorbed dose, dose distribution, scatter analysis and electron beam radiation therapy. Prereq: 3471, and enrollment in RadSci; or permission of instructor. This course is available for EM credit.

4485 Treatment Planning U 2
Analysis and implementation of new and established treatment methods as it relates to the treatment plans designed for optimal coverage of the tumor volumes, avoidance of critical structures and constraints of the treatment units. Prereq: 3483, and Enrollment in RadSci; or permission of instructor. This course is available for EM credit.

4488 Diagnostic Medical Sonography Physics I U 3
A continuation of Rad Sci 3487 with emphasis on the physics of ultrasound to better understand transducers and the interactions of sounds waves at every human interface. Prereq: Enrollment in RadSci, or permission of instructor. This course is available for EM credit.

4520 Vascular Sonography I U 3
An introduction to venous imaging and noninvasive testing of the upper and lower extremities and the vascular integration of transplanted organs. Prereq: Enrollment in RadSci, or permission of instructor. This course is available for EM credit.
4521 Vascular Sonography 2  U  3
An introduction to arterial imaging and noninvasive testing of the upper and lower extremities and vascular integration of the carotid arteries, and bypass grafts.
Prereq: Enrollment in RadSci, or permission of instructor. This course is available for EM credit.

4530 Quality Management in Radiologic Sciences  U  3
Investigation of QM principles and techniques specific to the imaging sciences including modality specific quality control testing and national/state requirements.
Prereq: Enrollment in RadSci, or permission of instructor. This course is available for EM credit.

4589 Radiation Therapy Practicum V  U  1 - 10
Clinical application of patient care, simulation, treatment, and treatment planning procedures performed in Radiation Therapy. Emphasis is directed toward competence in machine function, patient set up, plan changes and variations in procedures.
Prereq: 3289, 3389, 4389, and 4489, and enrollment in RadSci; or permission of instructor.

4615 Radiographic Clinical Correlations  U  3
The fundamentals of radiographic diagnosis are explored with an emphasis on the correlations of the patient's medical history with radiographic findings.
Prereq: Enrollment in RadSci, or permission of instructor. This course is available for EM credit.

4618 Clinical Radiation Oncology  U  2
Pathology of neoplastic diseases of the human body emphasizing epidemiology, clinical presentation, detection and diagnosis, staging and treatment of the neoplasm relevant to radiation oncology.
Prereq: Enrollment in RadSci, or permission of instructor. This course is available for EM credit.

4630 Transitions to Clinical Practice  U  2
Provides the practical skills necessary to apply radiation science theory in clinical practice and prepares students for the transition to professional in the imaging science workplace.
Prereq: Enrollment in RadSci, or permission of instructor.

4670 Radiobiology and Radiation Protection  U  2
Principles of cellular biology and the reactions from types of ionizing radiation specific to radiation sciences. Emphasis is on effects from radiation exposure, radiation safety and the radiation protection standards utilized in radiation sciences.
Prereq: Enrollment in RadSci, or permission of instructor. This course is available for EM credit.

4689 Vascular Sonography Practicum I  U  1 - 8
Instruction and experience in the performance and interpretation of vascular sonographic imaging.
Prereq: Enrollment in RadSci, or permission of instructor. Repeatable to a maximum of 16 cr hrs or 2 completions. This course is available for EM credit.

4730 Quality Improvement in Healthcare  U  3
Quality Improvement in Healthcare is the first of two courses designed to provide students with the knowledge and practical experience to effectively implement a quality improvement (QI) project. Students will develop the skills necessary to develop a QI project through both course instruction and under the guidance of a student-identified preceptor.
Prereq: 4530, or permission of instructor.

4789 Vascular Sonography Practicum II  U  1 - 8
Instruction and experience in the performance and interpretation of vascular sonographic imaging.
Prereq: Enrollment in RadSci, or permission of instructor. Repeatable to a maximum of 16 cr hrs or 2 completions. This course is available for EM credit.

5089 Computed Tomography Practicum  U  G  1 - 4
Advanced operation, and application of CT technology, to include quality management, sectional anatomy, and supervised clinical practice.
Prereq: Enrollment in RadSci, or permission of instructor. Repeatable to a maximum of 16 cr hrs or 4 completions. This course is available for EM credit.

5189 Magnetic Resonance Practicum  U  G  1 - 4
Theory and clinical education in magnetic resonance imaging procedures.
Prereq: Enrollment in RadSci, or permission of instructor. Repeatable to a maximum of 16 cr hrs or 4 completions.

5289 Mammography/Breast Imaging Practicum  U  G  1 - 4
An introduction to scientific writing within the Radiologic Sciences and the review of practice guidelines that inform best clinical practices for imaging and treatment. Repeatable to a maximum of 16 cr hrs or 4 completions.

5389 Administration and Quality Management Practicum  U  G  1 - 4
A supervised practicum in radiologic sciences administration and quality management.
Prereq: Enrollment in RadSci, or permission of instructor. Repeatable to a maximum of 16 cr hrs or 4 completions.

5589 Vascular Interventional Radiography Practicum  U  G  1 - 4
Theory and clinical education in radiographic and therapeutic interventional procedures related to vascular structures and organ systems.
Prereq: Enrollment in RadSci, or permission of instructor. Repeatable to a maximum of 16 cr hrs or 4 completions.

7193.10 Individual Studies in Radiobiology  G  1 - 6
Individual research study in Radiobiology.
Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs or 18 completions. This course is graded S/U.

8999 Research in Radiology  G  1 - 12
Research for dissertation. Repeatable to a maximum of 12 cr hrs or 15 completions. This course is graded S/U.

2102.01 Literature and Religion  U  3
Study of relationships between religion and secular literature; analysis of religious and spiritual elements of literature and film of diverse cultures and historical periods.
Prereq: English 1110 (110) or equiv. Not open to students with credit for 2102.01H, CompStd 2102.01 (202.01), or 2102.01H (202.01H). GE lit and diversity global studies course.

2102.02 Comparative Sacred Texts  U  3
Introduction to religious views of the universe, the supernatural, social organization, ethics, etc., through sacred texts (oral and written) of diverse cultures and historical periods.
Prereq: English 1110 (110), or equiv. Not open to students with credit CompStd 2102.02 (202.02). GE lit and diversity global studies course.

2222 From Ishtar to Christ: The History of Mediterranean Religions  U  3
This course introduces students to the historical facts of 10 ancient Mediterranean religions in a context that trains them to study religions more generally. It also teaches them how two of the most prominent religions today—Judaism and Christianity—succeed within a richly diverse religious marketplace, and how religions respond to their political, economic, and social environments.
Prereq: Not open to students with credit for Class 2222. GE historical study course. Cross-listed in Class.

2370 Introduction to Comparative Religion  U  3
Introduction to the academic study of religion through comparison among major traditions (Judaism, Christianity, Islam, Hinduism, Buddhism, etc.) and smaller communities.
Prereq: English 1110 (110) or equiv. Not open to students with credit for 2370H or CompStd 2370H (2270H) or 2370H (2270H). GE cultures and ideas and diversity global studies course.

2370H Introduction to Comparative Religion  U  3
Introduction to the academic study of religion through comparison among major traditions (Judaism, Christianity, Islam, Hinduism, Buddhism, etc.) and smaller communities.
Prereq: Honors standing, and English 1110 (110) or equiv. Not open to students with credit for 2370H, CompStd 2370H (2270H), or 2370H (2270H). GE cultures and ideas and diversity global studies course.

2670 Science and Religion  U  3
A philosophical examination of the relationship between science and religion; concentration on issues regarding the creation of the universe and the origins of life.
Prereq: Not open to students with credit for CompStd 2670 or Philos 2670 or 2860. GE cultures and ideas course. Cross-listed in Philos.

2677 Religion and Environmentalism  U  3
Examines the complex intersections between religion and environmental movements in North America, beginning with early contact between Europeans and Native Americans.
Prereq: English 1110 (110) or equiv. Not open to students with credit for CompStd 2677 (277).

3210 Kabbalah and the Jewish Mystical Tradition  U  3
The history of Jewish mysticism from antiquity to the present, with emphasis on its implications for the comparative study of religious experience.
Prereq: English 1110 or equiv. Not open to students with credit for 2210, 2210H, 3210H, CompStd 2210, 2210H, Hebrew 2210, 3210, 2210H, 3210H, JewishSt 2210, 3210, 2210H, or 3210H. GE cultures and ideas and diversity global studies course. Cross-listed in Hebrew and JewishSt.

3666 Magic in the Modern World  U  3
This course traces the modern revival of magic and neo-paganism, both in new religious movements and in popular culture, novels, music and film, from 1870 to the present. The course examines the intersections between emergent magical groups and various social and political movements.
GE cultures and ideas and diversity global studies course.

3671 Religions of India  U  3
History and structure of South Asian religions with attention to myth, ritual, art, philosophy, and social stratification. 2370 (270) recommended.
Prereq: English 1110 (110) or equiv. Not open to students with credit for CompStd 3671 (321) or RelStds 321.
3672 Native American Religions U 3
Comparative survey of indigenous religions of North America; patterns and diversity in religious experience, cosmologies, myths, rituals, social organizations, and sacred roles. 2370 (270) recommended.
Prereq: English 1110 (110) or equiv. Not open to students with credit for CompStd 3672 (322) or RelStds 322. GE cultures and ideas course and diversity soc div in the US course.

3673 The Buddhist Tradition U 3
History and structure of Buddhism from founding to present in South, Southeast, and East Asia; emphasis on rituals, beliefs, and local and regional variations. 2370 (270) recommended.
Prereq: Not open to students with credit for CompStd 3673 (323), EALL 3223 (323), or RelStds 323. Cross-listed in EALL 3223.

3674 African Religions U 3
Survey of African traditional religions and their interaction with Islam and Christianity in Africa and the diaspora; emphasis on cosmologies, myths, ritual, ethics, and witchcraft. Comparative Studies 2370 (270) or 2370H (270H) recommended.
Prereq: English 1110 (110) or equiv. Not open to students with credit for CompStd (324) or RelStds 324.

3678 Religion and American Culture U 3
Thematic approach to the intersections of religion and American culture, with attention to varied topics such as pluralism, nationalism, race, gender, sexuality, law, media, science, economics, and popular culture. 2370 (270) recommended.
Prereq: English 1110 (110) or equiv. Not open to students with credit for CompStd 3678. GE diversity soc div in the US course.

3679 Popular Culture and World Religion U 3
The representation of religion in visual culture, in the United States and around the world; the ways that religious traditions are represented or misrepresented; the ways religious traditions appropriate popular culture for their own purposes; new forms of religious practice and community that grow directly out of popular culture.
Prereq: English 1110. GE VPA course.

3680 Religion and Law in Comparative Perspective U 3
Comparative, interdisciplinary approach to studying religion and law. Drawing on concrete cases, historical studies, and theoretical literature, the course explores how the relationship between religion and law has been configured differently in different liberal democracies, such as the U.S., France, and Israel, and what this might mean for contemporary debates. Team-taught w/ faculty in History.
Prereq: Not open to students with credit for History 3680. GE historical study and diversity global studies course. Cross-listed in History.

3872H Varieties of Christianity U 3
Explores various expressions of Christianity, historically and cross-culturally. Readings are from different disciplines, including anthropology, archeology, religious studies, sociology.
Prereq: Honors standing. Not open to students with credit for 4872H (524H).

3972 Theory and Method in the Study of Religion U 3
Survey of contemporary theories and methods used in the academic study of religion.
Prereq: 2370 (270) or 2370H (270H) or equiv. Not open to students with credit for RelStds 4972 or CompStd 4972 (520).

4873 Contemporary Religious Movements in Global Context U 3
Examination of contemporary religious movements within the context of larger political, cultural, and economic processes, including post-colonialism, modernization, and globalization.
Prereq: One course in CompStd, RelStds, or IntStds; or Grad standing; or permission of instructor. Not open to students with credit for CompStd 4873 (525) or IntStds 4873 (525).
Cross-listed in IntStds.

4875 Gender, Sexuality, and Religion U 3
Explores intersections of gender, sexuality and religion in comparative and cross-cultural contexts.
Prereq: English 1110 (110) or equiv. Not open to students with credit for CompStd 4875 (515).

5871 The Japanese Religious Tradition U G 3
A survey of the Japanese tradition, including Shinto, Buddhism, Taoism, New-Confucianism, and folk religion from the 6th century B.C.E. to the present.
Prereq: Not open to students with credit for CompStd 5871 (641) or Japanese 5271 (641).
Cross-listed in Japanese 5271.

Renewable Energy

2025T Solar Energy Systems U 3
This course encompasses solar energy systems including the underlying principles and concepts, system components, common system configurations, siting, design, environmental considerations, economic analysis and grid integration.
Prereq: 2010T. This course is available for EM credit.

Respiratory Therapy

4320 Components of Respiratory Health and Disease U 4
A study of normal respiratory mechanisms, manifestations and treatment of respiratory diseases, their clinical courses with specific consideration for the basis of respiratory therapeutics.
Prereq: Admission to RespThr.

4400 Basic Respiratory Care U 5
Study and clinical application of therapies, procedures, and equipment utilized in delivering, monitoring, and evaluating basic respiratory therapeutics to patients in the hospital setting.
Prereq: Admission to RespThr.

4410 Introduction to Clinical Respiratory Care U 4
An orientation to the profession, consideration of professional ethics, introduction to basic cardiopulmonary assessment and life support techniques, infection control, medical record, hospital environment, and role of the Respiratory Therapist.
Prereq: Admission to RespThr.

4475 Mechanical Ventilation U 5
Study of various mechanical ventilators and artificial airways, with major emphasis placed on all aspects of the management of the patient-ventilator system.
Prereq: 4320, 4400, 4410, and 4430.

4489 Clinical Experience Phase I U 2
Clinical application of basic respiratory therapeutics, intensive respiratory care, and arterial blood gas analysis.
Prereq: 4320, 4400, 4410, and 4430.

4500 Respiratory Therapy for Special Populations U 5
Theories, procedures, and equipment applicable to the delivery of respiratory therapy to special populations, including the neonatal, pediatric, home care, sleep, community, rehabilitation, and long-term acute care patient.
Prereq: 4320, 4400, 4410, and 4430.

4515 Intensive Respiratory Care U 3
The etiology, manifestations, and treatment of respiratory failure including principles, techniques and equipment associated with advanced cardiopulmonary monitoring and cardiac life support.
Prereq: 4320, 4400, 4410, and 4430.

4598 Clinical Experience Phase II U 3 - 10
Clinical application of adult, neonatal, and pediatric intensive respiratory care; home, continuing, and long-term acute respiratory care; pulmonary rehabilitation; endotracheal intubation.
Prereq: 4475, 4489, 4500, and 4515.

4593 Individual Studies in Respiratory Therapy U 1 - 5
Guided study of topics or pursuit of individual experiences in respiratory therapy.
Concur: 4689, 5525, and 5600. Repeatable to a maximum of 10 cr hrs or 4 completions. This course is graded S/U.

4689 Introduction to Advanced Clinical Practice Phase I U 2
Clinical education and experiences in respiratory therapy competency assessment, alternate care settings, and critical care.
Prereq: 4589. This course is graded S/U.

4789 Introduction to Advanced Clinical Practice Phase II U 5
Clinical education and experience in respiratory therapy education, administration of respiratory services, and areas of advanced professional practice.
Prereq: 4689, 5525, and 5600. This course is graded S/U.

4895 Seminar U 1 - 5
Conferences, group discussion, and presentations of selected topics.
Prereq: Admission to RespThr. Repeatable to a maximum of 10 cr hrs or 4 completions. This course is graded S/U.

5520 Issues in Respiratory Care U G 2
An analysis of current administrative, legal, regulatory, and professional issues which influence the administration of respiratory care services and therapists.
Prereq: 5525, 4689, and 5600; or permission of instructor.

5525 Teaching & Learning Respiratory Therapy U G 2
Principles and practice of teaching and learning in respiratory therapy. Various education roles and strategies of respiratory therapists in academic, community and clinical settings.
Prereq: 4589, or permission of instructor.

5600 Fundamentals of Respiratory Care Research U G 2
Survey of research problems, methods, and designs utilized in respiratory care, with emphasis on data collection, analysis, and presentation.
Prereq: 4589, or permission of instructor. Not open to students with credit for 593, 520, and AMED 589.

7410 Advanced Health Assessment G 3
Development of advanced health assessment skills. Emphasis on acquisition of pertinent assessment data across the life span for advanced nursing care of multiple specialties.
Prereq: Nursing 7450, and enrollment in Master of Respiratory Therapy (MRT) program. Cross-listed in Nursing.
**Respiratory Therapy**

7700 Ethical Issues in Advanced Practice  
Focus on ethical issues in advanced Respiratory Therapy practice. Ethical principles, case studies and simulated clinical scenarios in advanced respiratory care will be reviewed as students develop skills in analyzing, synthesizing and integrating ethics to support their positions.  
Prereq: Enrollment in Master of Respiratory Therapy (MRT) program.

7800 Advanced Practice in Respiratory Care  
Case study approach of theories, procedures and equipment in advanced respiratory care. Integrates critical diagnostic thinking, systems and evidence-based medicine for treatment of patients with respiratory compromise.  
Prereq: Enrollment in Master of Respiratory Therapy (MRT) program. Repeatable to a maximum of 9 cr hrs.

7895 Graduate Seminar in Respiratory Therapy  
Graduate seminars will focus on evidence-based practice, current developments, and professional practice issues in Respiratory Therapy. The seminars will consist of conferences, group discussions, and presentations of selected advanced topics in Respiratory Therapy.  
Prereq: Admission to Master of RespThr program. Repeatable to a maximum of 15 or hrs or 5 completions. This course is graded S/U.

8189 Advanced Clinical Practice I  
Supervised clinical education and introductory experiences in areas of advanced professional practice. Students will develop competence with patients of various diagnoses for examination, interventions, diagnosis, development of comprehensive plan of care, goal setting, documentation, consultation, delegation, and communication.  
Prereq: Enrollment in Master of Respiratory Therapy (MRT) program. This course is progress graded (S/U).

8289 Advanced Clinical Practice II  
Supervised clinical education and intermediate experiences in areas of advanced professional practice. Students will continue to develop competence with patients of various diagnoses for examination, interventions, diagnosis, development of comprehensive plan of care, goal setting, documentation, consultation, delegation, and communication.  
Prereq: Enrollment in Master of Respiratory Therapy (MRT) program. This course is graded S/U.

8389 Advanced Clinical Practice III  
This course provides students with clinical experiences to develop expertise and competence in areas of advanced professional practice. Students will continue to develop competence with patients of various diagnoses for examination, interventions, development of comprehensive plan of care, goal setting, documentation, consultation, delegation, and communication.  
Prereq: Enrollment in Master of Respiratory Therapy (MRT) program. This course is graded S/U.

**Romance Linguistics**

5051 Latin and the Romance Languages  
Examines the socio-historical factors and the linguistic processes that contributed to the formation of the Romance languages and to their divergences. Course taught in English.  
Prereq: Equivalent of 1103 in Italian, French, Spanish, Portuguese, Romanian, or Latin; or permission of instructor. Not open to students with credit for 692, French 692, Italian 5051 (692), or Clas 5051. Cross-listed in Clas and Italian.

8193 Individual Studies  
Individual Studies.  
Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs. This course is progress graded (S/U).

8194 Group Studies  
Investigation of minor problems in the various fields of Romance linguistics.  
Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

8999 Research in Romance Linguistics  
Research for thesis purposes only. Repeatable to a maximum of 99 cr hrs. This course is progress graded (S/U).

1101 Elementary Romanian I  
Introduction to Romanian; development of speaking, listening, reading, and writing skills in cultural context. Close to native speakers of this language.  
Prereq: Not open to students with credit for 101, or 2 or more years of study in this language in high school, except by permission of department. This course is available for EM credit. GE for lang course. FL Admis Cond course.

1102 Elementary Romanian II  
Continued development of speaking, listening, reading, and writing skills in cultural context. Close to native speakers of this language.  
Prereq: 1101 (101). Not open to students with credit for 102. This course is available for EM credit. GE for lang course. FL Admis Cond course.

1103 Intermediate Romanian I  
Continued development of speaking, listening, reading, and writing skills in cultural context. Closed to native speakers of this language.  
Prereq: 1102 (102). Not open to students with credit for 104 or 111. This course is available for EM credit. GE for lang course.

2104 Intermediate Romanian II  
Increasing functional ability in speaking, listening, reading, and writing practice; vocabulary-building; new grammar structures; start developing higher-level language skills in Romanian.  
Prereq: 1103 (111) or 104. Not open to students with credit for 407, or native speakers of this language through regular course enrollment or EM credit.

**Rural Sociology**

1500 Introduction to Rural Sociology  
Principles of society, major social institutions, and social change; emphasizes social changes in rural life, rural organizations, population, and family living.  
Au, Sp, Sm. Prereq: Not open to students with credit for 105, Sociol 1101 (101), or 201. GE soc sci orgs and politis and diversity soc div in the US course.

3320 Amish Society  
Analysis of the historical, social, religious, economic and cultural dimensions of the Amish.  
Prereq: Not open to students with credit for 5520.

3580 Social Groups in Developing Societies  
Contemporary struggles and experiences of rural social groups in the “Third World” in the context of development and globalization; emphasis on grassroots initiatives and resistance movements.  
Au Sem. Prereq: 3 cr hrs in RurlSoc, Sociol, or a related social science, or permission of instructor. Not open to students with credit for 378. GE soc sci indivs and groups and diversity global studies course.

4500 Community Development in Practice  
The application of an asset-based community development framework to address environmental, economic, and social issues at the community-level in the United States.  
Sp Sem. Prereq: ENR 3500 or permission of instructor. Not open to students with credit for 542.

5500 Diffusion of Innovations  
Examine the sociological processes involved in disseminating new ideas and technologies in U.S. and developing nations. Assess the consequences of new technologies for communities, households, and individuals particularly in rural contexts.  
Au Sem. Prereq: Not open to students with credit for 562 or 662.

5530 Sociology of Agriculture and Food Systems  
Overview of sociological theory and research related to agricultural change and food system development, focusing on individual, family, farm, community and environmental impacts.  
Fu Sem. Prereq: 6 units in RurlSoc, Sociol, or related Social Sciences, or Grad standing, or permission of instructor. Not open to students with credit for 733.

5540 Population, Place and Environment  
Focuses on demographic issues in rural settings and related environmental issues, with an emphasis on population change and migration in the context of conflicts, disaster, and resource-based development.  
Au, Sp 6-9 hrs taken in RurlSoc, Sociol, or related social science, or Grad standing. Not open to students with credit for 744.

5580 Social Impact Assessment  
This course provides students with a broad understanding of the fundamental history, concepts, methods, and theories of Social Impact Assessment (SIA) as part of environmental policy and regulation in both US and International contexts. Students are exposed, via scholarly articles, case studies and projects, to existing SIAs from across the US and the world and how quality SIAs are performed.  
Fu, Jr, Sr, or Grad standing, or permission of instructor.

5787 Study at a Foreign Institution  
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.  
Au, Sp, Su. Prereq: Permission of dept chairperson. Not open to students with credit for 697. Repeatable to a maximum of 30 or hrs or 2 completions. This course is progress graded.

6500 Rural Poverty  
Evaluation of the factors which create and maintain poverty and inequality, with focus on the rural U.S., developing nations, and the comparative analysis of spatial inequalities.  
Sp Sem (odd years). Prereq: 15 or hrs in RurlSoc or related social sciences, or Grad standing. Not open to students with credit for 666.

7550 Rural Community Development in Theory and Practice  
Theoretical foundations of rural community development; contemporary community development issues; change processes, strategies, and practices.  
Sp Sem. (odd years). Prereq: Grad standing. Not open to students with credit for 888.

7560 Environmental Sociology  
Sociological approaches to the study of environmental policy. Analysis of major issues relating to the use and abuse of natural resources and pollution.  
Prereq: Grad standing. Not open to students with credit for 766.
Concepts and Theories in Rural Sociology  
Examines the sociological significance of “rurality” and the conceptual perspectives applied to
major substantive areas in rural sociology, such as community, environment, and agriculture.
*AGS (even years). Prereq: Grad standing. Not open to students with credit for 472.

Development Sociology in Theory and Practice  
Overview of sociological principles, theories and research in the evolution of international
development and globalizaion practices, objectives, and policies. Contemporary issues in
development and globalization.
*SPS (even years). Prereq: Grad standing. Not open to students with credit for 892.

Russian

1101.01 1st-Year Russian I (Classroom Track)  
U 4
Introduction to Russian: development of skills in speaking, understanding, reading, and writing
contemporary Russian in a cultural context. Not open to native speakers or to students with 2
or more years of high school study.
Prereq: Not open to students with credit for 1101.01, or 5 credits of 101.51, or 4 credits of
101.51. This course is available for EM credit. GE for lang course. FL Admis Cond course.

1101.51 Elementary Russian I (Self-Paced)  
U 1 - 4
Introduction to Russian: development of skills in speaking, understanding, reading, and writing
in cultural context. Students register for 1-4 cr hrs. Progress is sequential from one hr to next.
80% is required to advance. Not open to native speakers or to students with 2 or more years of
high school study.
Prereq: Not open to students with credit for 1101.01, or 4 credits of 1101.51. Repeatable to a
maximum of 4 cr hrs or 4 completions. This course is available for EM credit. GE for lang course.

1102.01 Elementary Russian II (Classroom Track)  
U 4
Continued development of speaking, listening, reading, and writing skills in cultural context.
Not open to native speakers of this language through regular course enrollment or EM credit.
Prereq: 1101.01, or 4 credit hours of 1101.51 or 1101.61. Not open to students with 4 credits of
1102.51 or 1102.61. This course is available for EM credit. GE for lang course.

1102.51 Elementary Russian II (Self-Paced)  
U 1 - 4
Continued development of speaking, listening, reading, and writing skills in cultural context.
Not open to native speakers of this language through regular course enrollment or EM credit.
Prereq: 1101.01, or 4 cr hrs of 1101.51 or 1101.61. Not open to students with credit for
1102.01, or 4 credits of 1102.51. Repeatable to a maximum of 4 cr hrs or 4 completions.
This course is available for EM credit. GE for lang course.

1102.61 Elementary Russian II (Self-Paced/Individualized Distance Learning)  
U 1 - 4
Continued development of speaking, listening, reading, and writing skills in cultural context.
Not open to native speakers of this language through regular course enrollment or EM credit.
Prereq: 1101.01, or 4 cr hrs of 1101.51 or 1101.61. Not open to students with credit for
1102.01, or 4 credits of 1102.51. Repeatable to a maximum of 4 cr hrs or 4 completions.
This course is available for EM credit. GE for lang course.

1103.01 Intermediate Russian I (Classroom Track)  
U 4
Continued development of speaking, listening, reading, and writing skills in cultural context.
Not open to native speakers of this language through regular course enrollment or EM credit.
Prereq: 1102.01, or 4 credits of 1102.51 or 1102.61. Not open to students with credit for
1103.01, or 4 credits of 1103.51 or 1103.61. This course is available for EM credit. GE for lang course.

1103.51 Intermediate Russian I (Self-Paced)  
U 1 - 4
Continued development of speaking, listening, reading, and writing skills in cultural context.
Students register for 1-4 cr hrs during sem. Progress is sequential from one hr to next.
80% is required to advance. Not open to native speakers of this language through regular course enrollment or EM credit.
Prereq: 1101.01, or 4 cr hrs of 1101.51 or 1101.61. Not open to students with credit for
1103.01, or 4 credits of 1103.51 or 1103.61. Repeatable to a maximum of 4 cr hrs or 4 completions.
This course is available for EM credit. GE for lang course.

1103.61 Intermediate Russian I (Self-Paced/Individualized Distance Learning)  
U 1 - 4
Continued development of speaking, listening, reading, and writing skills in cultural context.
Not open to native speakers of this language through regular course enrollment or EM credit.
Prereq: 1102.01, or 4 credits of 1102.51 or 1102.61. Not open to students with credit for
1103.01 or 4 cr hrs of 1103.51. Repeatable to a maximum of 4 cr hrs. This course is available
for EM credit. GE for lang course.

1104.01 Intermediate Russian II (Classroom Track)  
U 4
Increasing functional ability in speaking, listening, reading, and writing practice, vocabulary-
building; new grammar structures; start developing higher-level language skills in Russian.
Not open to native speakers of this language through regular course enrollment or EM credit.
Prereq: 1103.01, or 4 cr hrs of 1103.51 or 1103.61. Not open to students with credit for
1104.01, or 4 cr hrs of 1104.51 or 1104.61. Repeatable to a maximum of 4 cr hrs or 4 completions.

1104.61 Intermediate Russian II (Self-Paced/Individualized Distance Learning)  
U 1 - 4
Increasing functional ability in speaking, listening, reading, and writing practice, vocabulary-
building; new grammar structures; start developing higher-level language skills in Russian.
Prereq: 1103.01 or 4 credits of 1103.51. Not open to students with credit for 1104.01 or 4
credits of 1104.51. Repeatable to a maximum of 4 cr hrs or 4 completions. This course is
available for EM credit.

1144 Intermediate Russian for Heritage Speakers II  
U 4
This is the second course designed for students who have a Russian background, hear and/or
speak (to a different degree) Russian at home and want to learn to read and write in Russian,
or to develop their speaking and listening skills through formal Russian language study.
Prereq: 1133.

2200 Russian Language and Culture for Travel and Business  
U 1 - 2
Continued development of speaking, understanding, reading, and writing skills in Russian
in cultural context. Not open to native speakers of this language through regular course enrollment or EM credit.
Prereq: 1103.01, or 4 credits of 1103.51. Not open to students with credit for 2200.01 or 4
credits of 2200.51. Repeatable to a maximum of 4 cr hrs or 4 completions.

2205 Honors Russian Language and Culture for Travel and Business  
U 3
Prereq: Not open to students with credit for 2250, 2250.99, or 2250H. GE lit and diversity
global studies course.

2250 Honors Masterpieces of Russian Literature  
U 3
Prereq: Not open to students with credit for 2250, 2250.01, or 2250H. GE lit and diversity
global studies course.

2250H Honors Masterpieces of Russian Literature (Online)  
U 3
Prereq: Not open to students with credit for 2250, 2250.01, or 2250H. GE lit and diversity
global studies course.

2335.01 Magnificence, Mayhem, and Mafia: Russian Culture  
U 3
Russian culture from its foundations to the 21st century through analysis of literature, film,
music, visual arts, beliefs, and customs. Taught in English.
Prereq: Not open to students with credit for 2335, 2335.99, 135, or 235. GE cultures and ideas
and diversity global studies course.

2335.99 Masterpieces of Russian Literature  
U 3
Prereq: Not open to students with credit for 2335, 2335.01, 135, or 235. GE cultures and ideas
and diversity global studies course.

2345 Russian Fairy Tales and Folklore  
U 3
Examines four categories of texts, both verbal and visual: (1) a survey of Russian demography;
(2) a large selection of the best-known Russian fairy tales; (3) scholarly articles analyzing the
differences between folklore and literature; and (4) visual materials (film, paintings, graphics,
and handicrafts) and music inspired by Russian fairy tales. Taught in English. GE cultures and ideas
and diversity global studies course.

2355.99 Russians and their Vodkas: Deconstructing Myths  
U 1
Interdisciplinary study of vodka and its role in Russian history, culture, and politics. Course
focuses first on vodka production and its uses, then on its influence on Russian culture in
present times and key historical periods. Readings alternate with film, documentaries,
and advertisements as class material. Offered totally online.

Rural Sociology     411
3101  Third-Year Russian I: Contemporary Russian in Cultural and Literary Contexts  U  4
Further develop speaking, listening, reading, and writing skills and grammar competence while discussing topics of contemporary Russian life and literature. Prereq: 2104.01, or 4 cr hrs of 2104.51 or 2104.61.

3102  Third-Year Russian II: Current Events through the Russian Media  U  4
Introduction to the Russian mass media with an emphasis on current events; further development of speaking, listening, reading, and writing skills and grammar competence. Prereq: 3101 (501 and 502), or permission of instructor. Not open to students with credit for 503 or 562.

3121  Advanced Reading Russian I Self-Paced  U  1 - 3
Developing reading skills and strategies from a variety of authentic Russian sources, with special emphasis on contemporary materials. Prereq: 2104.01, or 4 cr hrs of 2104.51 or 2104.61. Repeatable to a maximum of 3 cr hrs.

3122  Advanced Reading Russian II Self-Paced  U  1 - 3
Further development of reading skills & strategies from authentic Russian sources, with emphasis on contemporary materials. Students register for 1-4 cr hrs during sem. Progress is sequential from one cr hr to next; 80% is required to advance. Prereq: 3121 (581.51), or permission of instructor. Not open to students with credit for 582.51. Repeatable to a maximum of 3 cr hrs.

3140  Russian Conversation  U  1
Maintaining and further developing conversational skills in Russian at the intermediate level. Taught in Russian as round-table discussion. Prereq: 2104.01 (402.01) or 2104.51 (402.51), or permission of instructor. Repeatable to a maximum of 2 or cr hrs.

3350  Russian Culture and Politics  U  3
Interdisciplinary approach to reading and perceiving Russian political culture today. The class expands the meaning of culture to include political discourse, political practices, and current societal debates. Taught in English. Prereq: Not open to students with credit for 550.

3355.99  Vodka in Russian Society and Culture: Deconstructing Myths  U  3
Vodka in Russia is important to virtually all social functions, is used as a home remedy for ailments, and is a frequent theme of jokes, folk songs, films, and literature. It also has an important political history, having long been used by the Russian (and Soviet) state as a form of social control. This course explores Russian culture and history through its most famous drink. GE cultures and ideas and diversity global studies course.

3460.01  Modern Russian Experience through Film  U  3
Exploration of some of the most revealing hopes and disappointments of Russian people presented in internationally acclaimed Russian films. Taught in English. Prereq: Not open to students with credit for 3460 or 3460.99. GE VPA and diversity global studies course.

3460.99  Modern Russian Experience through Film  U  3
Exploration of some of the most revealing hopes and disappointments of Russian people presented in internationally acclaimed Russian films. Taught in English. 100% online. Prereq: Not open to students with credit for 3460 or 3460.99. GE VPA and diversity global studies course.

3470.01  Anna Karenina Goes to Hollywood: Tolstoy's Novel in Film and Popular Culture  U  3
This course explores Tolstoy's Anna Karenina in relation to popular American culture. The course will consist of two parts: in the first half, we will read and discuss Anna Karenina, and we will then examine films and other popular works based on the novel. Prereq: Not open to students with credit for 3470 or 3470.99. GE VPA and diversity global studies course.

3470.99  Anna Karenina Goes to Hollywood: Tolstoy's Novel in Film and Popular Culture (Online)  U  3
This course explores Tolstoy's Anna Karenina in relation to popular American culture. The course will consist of two parts: in the first half, we will read and discuss Anna Karenina, and we will then examine films and other popular works based on the novel. Prereq: Not open to students with credit for 3470 or 3470.99. GE VPA and diversity global studies course.

3480.01  The Russian Spy: Cultures of Surveillance, Secret Agents, & Hacking from the Cold War through Today  U  3
This course explores the concept of the spy in the cultural imaginations of both Russia and the West from the early-20th century through the present. Topics will include stereotyping in popular culture, the relationship between fiction and the political imagination, Western (especially American) and Russian views of each other, the Cold War, privacy, security, fear, and war. Prereq: Not open to students with credit for 3480 or 3480.99. GE VPA and diversity global studies course.

3480.99  The Russian Spy: Cultures of Surveillance, Secret Agents, & Hacking from the Cold War through Today  U  3
This course explores the concept of the spy in the cultural imaginations of both Russia and the West from the early-20th century through the present. Topics will include stereotyping in popular culture, the relationship between fiction and the political imagination, Western (especially American) and Russian views of each other, the Cold War, privacy, security, fear, and war. 100% Online. Prereq: Not open to students with credit for 3480 or 3480.01. GE VPA and diversity global studies course.

3490.01  Russian Youth Culture  U  3
In this class, students will learn about different decades, from 1950s to present, in the life of Russian youth. Ideology, political activism and political inertia, Western influence and national patriotism, fashion and popular bands. Prereq: Not open to students with credit for 3490 or 3490.99. GE cultures and ideas and diversity global studies course.

3490.99  Russian Youth Culture  U  3
In this class, students will learn about different decades, from 1950s to present, in the life of Russian youth. Ideology, political activism and political inertia, Western influence and national patriotism, fashion and popular bands. Prereq: Not open to students with credit for 3490 or 3490.99. GE cultures and ideas and diversity global studies course.

3530  Russian Cuisine in History, Literature and Culture  U  3
Explores Russian cuisine: its history and its role in Russian literature and culture. We will use a variety of cookbooks and cultural histories as our textbooks, and we will read selections from classical Russian literature to see how writers incorporate ideas of food and cuisine into their works. We will also read critical articles about the relationship between food and culture. GE cultures and ideas course.

3570  CLLC Radio  U  3
Student partners prepare 3 target language broadcasts, each 1 hour in length. Broadcasts stream live over the Internet, then become podcast for public use. Student "DJs" conduct target language research on radio broadcast history and at least 15 thematic topics and related music that interests them. Students choose their music and content with approval and guidelines, then produce scripts. Prereq: Permission of instructor.

4101  Advanced Russian I  U  3
Speaking, listening, reading and writing practice in Russian at the advanced level, with focus on Russian films from the 1930s to the present. Prereq: 3102 or 503, or permission of instructor. Not open to students with credit for 601.

4102  Advanced Russian II  U  3
Continuation of Russian 4101: speaking, listening, reading, and writing practice in Russian at the advanced level, with a focus on Russian culture and national identity. Prereq: 4101 (601) or 609, or permission of instructor. Not open to students with credit for 610.

4135  Practical Russian Pronunciation  U  3
Russian phonetics, including terminology, transcription, practical exercises designed to improve pronunciation, and problems of teaching pronunciation. Taught in Russian. Not open to native speakers of Russian. Prereq: 4102, or permission of instructor.

4191  Internship for Russian Majors  U  1 - 3
Intensive work experience or research assistance relating to Russia or Russian, conducted under the supervision of a faculty member. Prereq: Enrollment in major or minor in Russian, and permission of the Undergraduate Studies Coordinator. Repeatable to a maximum of 6 cr hrs and 2 completions. This course is graded S/U.

4475  Capstone Course for Russian Majors  U  3
Junior-senior seminar explores issues of Russian language and literature, focusing on reading in Russian and on honing Russian and English oral and writing skills. Required for Russian major. Taught in Russian and English. Prereq: English 2367 or equiv. Repeatable to a maximum of 9 cr hrs.

4798  Study Trip  U  3 - 6
Short-term study abroad directed by a faculty member as a supplement to a course in Russian literature or culture. Students pay OSU fees, any fees in excess of tuition, travel & subsistence costs. Prereq: Permission of dept chairperson and Office of International Affairs. Repeatable to a maximum of 12 cr hrs or 2 completions. This course is graded S/U.

5101  Adv Russian III  U  3
Continuation of Russian 4102. Development of speaking, listening, reading, & writing skills at the advanced level, with a focus on a specific theme of interest for area specialists (e.g., history, literature, culture, linguistics, health issues). Prereq: 4102, or permission of instructor. Not open to students with credit for 511. Repeatable to a maximum of 6 cr hrs.

5102  Advanced Russian IV  U  3
Continuation of Russian 5101. Development of speaking, listening, reading, & writing skills at the advanced level, with a focus on a specific theme of interest for area specialists (e.g., history, literature, culture, linguistics, health issues). Prereq: 5101, or permission of instructor. Repeatable to a maximum of 6 cr hrs.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>5103</td>
<td>Advanced Russian V</td>
<td>3</td>
<td>Students will continue to develop comprehensive knowledge of Russian in the following skills: speaking, reading, writing, listening, and grammar. Taught in Russian.</td>
<td>Prereq: 5102, or permission of instructor.</td>
</tr>
<tr>
<td>5150</td>
<td>Russian for Business</td>
<td>3</td>
<td>This course will provide specific vocabulary and skills to deal with various areas of business and industry in Russia, including oil and natural gas, agriculture, and commerce.</td>
<td>Prereq: 4102, or permission of instructor.</td>
</tr>
<tr>
<td>5160</td>
<td>Russian for Open-Source Media Research: Reading &amp; Listening Comprehension, Analysis, and Translation</td>
<td>1</td>
<td>Reading and listening comprehension are essential skills for students of Russian who plan to work as translators, language analysts, or other industry-specific specialists. This class will also provide those who have a general interest in Russian culture a survey of topics dealing with current events, politics, and international relations, and will engage exclusively with authentic texts.</td>
<td>Prereq: 3101 or 3121, or permission of instructor. Repeatable to a maximum of 4 cr hrs.</td>
</tr>
<tr>
<td>5193</td>
<td>Individual Studies</td>
<td>1-9</td>
<td>Individual study on topic relating to Russian culture, literature, or language under the supervision of a faculty member.</td>
<td>Prereq: Permission of department chairperson. Repeatable to a maximum of 18 cr hrs or 6 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>5194</td>
<td>Group Studies</td>
<td>1-3</td>
<td>Group Studies in Slavic and East European languages and cultures. Repeatable to a maximum of 6 cr hrs or 2 completions.</td>
<td>Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs or 2 completions.</td>
</tr>
<tr>
<td>5225</td>
<td>Russian Emigre Literature</td>
<td>3</td>
<td>Analysis of the three “waves” of Russian emigration — post-Revolutionary, post-WWII, and the so-called “third wave” in the 1970s and 80s through the poetry, fiction, and memoirs by such writers as: Ivan Bunin, Vladimir Khodasevich, Vladimir Nabokov, Nina Berberova, Sergei Dovlatov, Vasiliy Aksyonov, and Joseph Brodsky.</td>
<td>Prereq: 1110 or equiv, or any 4000-level Russian literature, culture or linguistics course.</td>
</tr>
<tr>
<td>5230</td>
<td>Utopia and Dystopia in Russian Literature</td>
<td>3</td>
<td>Russian writers of the past two centuries have been fascinated with both the idea of utopia and its reverse image of a dystopian society whose aim of perfection has led to the very opposite. In this course, we will explore realist, modernist, Soviet, and post-Soviet utopian and dystopian novels, stories, plays, and essays.</td>
<td>Prereq: 2250 or another course on Russian literature or culture is recommended for undergraduates.</td>
</tr>
<tr>
<td>5250.02</td>
<td>The Russian Writer - Dostoevsky</td>
<td>3-4</td>
<td>Close Analysis of the major works of Fyodor Dostoevsky.</td>
<td>Prereq: 5250.02</td>
</tr>
<tr>
<td>5250.03</td>
<td>The Russian Writer: Chekhov</td>
<td>4</td>
<td>This course will cover the work of Anton Chekhov, from early satirical stories through his major stories and plays, and will make forays into other genres, particularly letters. Students will read the texts closely, considering their social, political, philosophical, and aesthetic contexts.</td>
<td>Prereq: Not open to students with credit for 5250. (Au15, Breitlinger).</td>
</tr>
<tr>
<td>5250.04</td>
<td>The Russian Writer: Nabokov</td>
<td>3</td>
<td>This course will cover several of Vladimir Nabokov's major works in their cultural, biographical, philosophical, and aesthetic context. Some students will be more familiar with the Russian literary tradition on which Nabokov richly draws, and others will be less familiar. Either is completely fine, as sufficient context will be provided in class and in optional background readings.</td>
<td>Prereq: Permission of instructor.</td>
</tr>
<tr>
<td>5460</td>
<td>Russian Media</td>
<td>3-4</td>
<td>This course will examine Russian media and communication within the context of media analysis and communication studies. The course will briefly review the history of Soviet and post-Soviet media in the late 20th-21st centuries, but will focus primarily on contemporary Russian media.</td>
<td>Prereq: Permission of instructor.</td>
</tr>
<tr>
<td>5530.02</td>
<td>Madness and Power in Russia</td>
<td>3</td>
<td>This English-language version of Russian 5530.01 facilitates study and research of the important trope of madness in Russian culture for advanced undergraduates and graduate students. Primary readings, discussion and coursework will be offered in English, although parallel and additional readings in Russian will be available for students with advanced language skills.</td>
<td>Prereq: Not open to students with credit for 5530.01.</td>
</tr>
<tr>
<td>5601</td>
<td>Structure of Russian I</td>
<td>3</td>
<td>Systematic synchronic description of the structure of Contemporary Standard Russian, focusing on phonetics, phonology, and morphology, and associated theoretical issues. Taught in English.</td>
<td>Prereq: 3102, or Grad standing in Slavic; or permission of instructor. Not open to students with credit for 6601 (640).</td>
</tr>
<tr>
<td>5701</td>
<td>History of Russian I</td>
<td>3</td>
<td>Survey of the most important developments in the Russian writing system, phonology, morphology, and syntax from Old East Slavic to modern times. Russian among the Slavic languages: main methodologies in historical linguistics.</td>
<td>Prereq: 3102 or 503, or Grad standing, or permission of instructor. Not open to students with credit for 720 or 6701.</td>
</tr>
<tr>
<td>5797</td>
<td>Study at a Foreign Institution</td>
<td>1-9</td>
<td>Opportunity to study at Russian educational institution and receive OSU credit. Students pay OSU fees, any fees in excess of tuition, travel &amp; subsistence costs.</td>
<td>Prereq: Permission of instructor. Repeatable to a maximum of 36 cr hrs or 9 completions.</td>
</tr>
<tr>
<td>6171</td>
<td>Basic Reading Russian for Graduate Students</td>
<td>3</td>
<td>Russian alphabet, basic vocabulary, and basic elements of grammar for graduate students who need to develop reading skills for professional research. Taught in self-paced format.</td>
<td>Continued by Russian 6172. Prereq: Grad standing. Not open to students with credit for 571.</td>
</tr>
<tr>
<td>6172</td>
<td>Reading Russian for Research</td>
<td>3</td>
<td>Continuation of Russian 6171: further development of reading skills, vocabulary, and grammar for graduate students who need to read Russian for professional research. Taught in self-paced format.</td>
<td>Prereq: 6171 (571), and Grad standing. Not open to students with credit for 572 or 573.</td>
</tr>
<tr>
<td>6252</td>
<td>Issues in 19th-Century Russian Literature</td>
<td>3</td>
<td>Literature of the Golden Age and Realist periods in cultural and political context. Good reading ability in Russian recommended.</td>
<td>Prereq: Grad standing, or permission of instructor. Not open to students with credit for 750 or 751. Repeatable to a maximum of 6 cr hrs.</td>
</tr>
<tr>
<td>6253</td>
<td>Issues in 20th- and 21st-Century Russian Literature</td>
<td>3</td>
<td>Silver Age, Soviet, emigre, or post-Soviet literature in cultural and political context. Good reading ability in Russian recommended.</td>
<td>Prereq: Grad standing, or permission of instructor. Not open to students with credit for 752 or 754. Repeatable to a maximum of 6 cr hrs.</td>
</tr>
<tr>
<td>6254</td>
<td>Russian Literary Genres</td>
<td>3</td>
<td>Genres of Russian literature: e.g., poetry, drama, novel, short story, literary essay. Time periods, authors, and themes are variable. Good ability to read Russian recommended.</td>
<td>Prereq: Grad standing, or permission of instructor. Not open to students with credit for 653, 723, or 651. Repeatable to a maximum of 6 cr hrs.</td>
</tr>
<tr>
<td>7150</td>
<td>Language Maintenance and Professionalization</td>
<td>1-2</td>
<td>Opportunity for graduate students to maintain/enhance their Russian language abilities and improve their lesson planning and teaching skills in Russian language classes.</td>
<td>Prereq: Grad standing. Repeatable to a maximum of 16 cr hrs or 8 completions.</td>
</tr>
<tr>
<td>8150</td>
<td>Graduate Student Teaching Apprenticeship</td>
<td>1</td>
<td>Graduate students will work with a faculty member who is teaching an undergraduate, non-language course. Students will work with the faculty member to develop skills in creating lesson plans and reading lists, producing productive class discussions, assigning appropriate workloads, and grading.</td>
<td>Prereq: Grad standing. Repeatable to a maximum of 4 cr hrs.</td>
</tr>
<tr>
<td>8193</td>
<td>Individual Studies</td>
<td>1-3</td>
<td>Individual studies under faculty supervision in Russian literature, film, culture, or linguistics.</td>
<td>Prereq: Grad standing, and permission of the dept chairperson. Repeatable to a maximum of 24 cr hrs or 8 completions.</td>
</tr>
<tr>
<td>8550</td>
<td>Seminar in Russian Literature, Film, or Cultural Studies</td>
<td>3</td>
<td>Variable-topic seminar on issues in Russian literature, film, or culture. Repeatable for credit with change of topic.</td>
<td>Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 24 cr hrs.</td>
</tr>
<tr>
<td>8592</td>
<td>Sanskrit Reading Group</td>
<td>1-3</td>
<td>Presents opportunities for further reading of Classical or Vedic Sanskrit texts to allow students to maintain and enhance their command of Sanskrit.</td>
<td>Prereq: 5902, or permission of instructor. Repeatable to a maximum of 18 cr hrs or 6 completions.</td>
</tr>
<tr>
<td>8593</td>
<td>Intermediate Sanskrit</td>
<td>1-3</td>
<td>Reading of classical Sanskrit texts.</td>
<td>Prereq: 5902 (821).</td>
</tr>
<tr>
<td>8595</td>
<td>Sanskrit</td>
<td>1-3</td>
<td></td>
<td>Prereq: 5902 (821).</td>
</tr>
</tbody>
</table>
414 Scandinavian

2310 Nature in Nordic and German Literatures U 3
This course explores how literature and culture are deeply intertwined with our relationship toward nature. The focus of this exploration is the literature, culture, and history of Nordic and German-speaking countries, from the medieval period to the present. Taught in English.
Prereq: Not open to students with credit for German 2310. GE lit course. Cross-listed in German.

3350 Norse Mythology and Medieval Culture. U 3
The myths of the Old Norse gods and the worldview and beliefs of pagan Scandinavia.
Prereq: Not open to students with credit for Scandnav 222. GE lit and diversity global studies course.

4150 Reading the Scandinavian Languages U 3
Fundamentals of grammar of the Scandinavian languages for research purposes in the humanities, sciences, and social and behavioral sciences.
Prereq: Not open to students with credit for 571.

4250 Masterpieces of Scandinavian Literature U 3
Selected masterpieces of Scandinavian literature from contemporary theoretical perspectives.
Prereq: Not open to students with credit for Scandnav 500. GE lit course.

5150 Old Norse U G 3
Introduction to the grammar of Old Norse-Icelandic literature. Brief overview of Old Norse Literature and the context of its production.
Prereq: Not open to students with credit for Scandnav 710.

5151 Variable Topics in Scandinavian Studies U G 3
Investigation of various given topics in Scandinavian studies.
Prereq: Permission of instructor (for undergraduates). Repeatable to a maximum of 12 cr hrs.

5193 Individual Studies U G 2 - 5
Individual investigation of minor problems of Scandinavian languages or literatures.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 3 completions. This course is graded S/U.

5251 The Icelandic Saga U G 3
Introduction to the Icelandic saga, the greatest vernacular prose literature of medieval Europe. Taught in English.
Prereq: Not open to students with credit for 513. GE lit course.

Scholars, University

1100 Scholars Seminar U ½ - 2
Scholars Program academic and co-curricular requirements and expectations; University procedures relative to the Scholars experience; resources and opportunities related to Scholars program theme; students rights, responsibilities, and expectations; overview of relevant majors and careers.
Prereq: Scholars status.

1100.01 Advocates for Communities and Education Scholars Seminar U ½ - 2
Scholars Program academic and co-curricular requirements and expectations; University procedures relative to the Scholars experience; resources and opportunities related to the Scholars program theme; students rights, responsibilities, and expectations; overview of relevant majors and careers.
Prereq: Scholars status.

1100.02 Architecture, Landscape, and City Scholars Seminar U ½ - 2
Scholars Program academic and co-curricular requirements and expectations; University procedures relative to the Scholars experience; resources and opportunities related to the Scholars program theme; students rights, responsibilities, and expectations; overview of relevant majors and careers.
Prereq: Scholars status.

1100.03 Biological Sciences Scholars Seminar U ½ - 2
Scholars Program academic and co-curricular requirements and expectations; University procedures relative to the Scholars experience; resources and opportunities related to the Scholars program theme; students rights, responsibilities, and expectations; overview of relevant majors and careers.
Prereq: Scholars status.

1100.04 Health Sciences Scholars Seminar U ½ - 2
Scholars Program academic and co-curricular requirements and expectations; University procedures relative to the Scholars experience; resources and opportunities related to the Scholars program theme; students rights, responsibilities, and expectations; overview of relevant majors and careers.
Prereq: Scholars status.

1100.05 Innovation, Creativity, and Entrepreneurship Scholars Seminar U ½ - 2
Scholars Program academic and co-curricular requirements and expectations; University procedures relative to the Scholars experience; resources and opportunities related to the Scholars program theme; students rights, responsibilities, and expectations; overview of relevant majors and careers.
Prereq: Scholars status.

1100.06 International Affairs Scholars Seminar U ½ - 2
Scholars Program academic and co-curricular requirements and expectations; University procedures relative to the Scholars experience; resources and opportunities related to the Scholars program theme; students rights, responsibilities, and expectations; overview of relevant majors and careers.
Prereq: Scholars status.

1100.07 Media, Marketing, and Communications Scholars Seminar U ½ - 2
Scholars Program academic and co-curricular requirements and expectations; University procedures relative to the Scholars experience; resources and opportunities related to the Scholars program theme; students rights, responsibilities, and expectations; overview of relevant majors and careers.
Prereq: Scholars status.

1100.08 Mount Leadership Society Scholars Seminar U ½ - 2
Scholars Program academic and co-curricular requirements and expectations; University procedures relative to the Scholars experience; resources and opportunities related to the Scholars program theme; students rights, responsibilities, and expectations; overview of relevant majors and careers.
Prereq: Scholars status.

1100.09 Politics, Society, and Law Scholars Seminar U ½ - 2
Scholars Program academic and co-curricular requirements and expectations; University procedures relative to the Scholars experience; resources and opportunities related to the Scholars program theme; students rights, responsibilities, and expectations; overview of relevant majors and careers.
Prereq: Scholars status.

1100.10 STEM Exploration and Engagement Scholars Seminar U ½ - 2
Scholars Program academic and co-curricular requirements and expectations; University procedures relative to the Scholars experience; resources and opportunities related to the Scholars program theme; students rights, responsibilities, and expectations; overview of relevant majors and careers.
Prereq: Scholars status.

2294 Group Studies U 1 - 3
Special topics at an introductory level. Arr.
Prereq: Scholars standing, or permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions.

Sexuality Studies

2214 Introduction to Sexuality Studies U 3
Provides an introduction to sexuality studies through an interdisciplinary approach. To apply the knowledge learned, this course requires a fieldwork component.
Prereq: Not open to students with credit for CompStd 2214 (214) or EduPAES 214. GE diversity soc div in the US course. Cross-listed in CompStd.

4998 Undergraduate Research U 1 - 4
Undergraduate research or creative project in variable topics related to Sexuality Studies.
Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

4998H Undergraduate Honors Research U 1 - 4
Undergraduate honors student research and/or creative project in variable topics.
Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

4999 Undergraduate Research: Thesis U 1 - 4
A program of reading arranged for each student, with individual conferences, progress reports, and thesis.
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 4 completions. This course is graded S/U.

4999H Honors Thesis Research U 1 - 4
A program of reading arranged for each student, with individual conferences, progress reports, and honors thesis.
Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 12 cr hrs or 4 completions. This course is graded S/U.

5191 Internship U G 1 - 3
Workplace experience requiring writing and/or research. A maximum of 3 credit hours can count toward the Sexuality Studies major, minor, or GIS.
Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

5193 Individual Studies U G 1 - 3
Students may register for individual directed study under this number for work not typically offered in courses.
Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

5194 Group Studies U G 1 - 3
Group studies. Topic varies according to instructor.
Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions.
Sexuality Studies 415

5620 Sexuality and Violence U G 3
Examines the relationship of sexuality and violence. Possible contexts include war, bullying, sexual assault and rape, intimate partner violence, sexual trafficking, anti-GLBT violence. Prereq: Jr standing or above, or permission of instructor. Repeatable to a maximum of 6 cr hrs.

Slavic Languages and Literatures

2230.01 Vampires, Monstrosity, and Evil: From Slavic Myth to Twilight U 3
Changing approaches to evil as embodied in vampires in East European folk belief & European & American pop culture; function of vampire & monster tales in cultural context, including peasant world & West from Enlightenment to now. Taught in English. Prereq: Not open to students with credit for 2230 or 2230.99. GE cultures and diversity global studies course. Prereq: Not open to students with credit for 2230 or 2230.01. GE cultures and ideas and diversity global studies course.

2230.99 Vampires, Monstrosity and Evil: From Slavic Myth to Twilight (Online) U 3
Changing approaches to evil as embodied in vampires in East European folk belief & European & American pop culture; function of vampire & monster tales in cultural context, including peasant world & West from Enlightenment to now. Taught in English 100% Online. Prereq: Not open to students with credit for 2230 or 2230.01. GE cultures and ideas and diversity global studies course.

2345 Introduction to Slavic and East European Literature and Culture U 3
Literature of a selected Slavic or East European country or countries in cultural and historical context; may include film, drama, art, music, and other media. Taught in English. May be repeated with topic change. Prereq: Not open to students with credit for 245 except by permission of instructor. Repeatable to a maximum of 9 cr hrs. GE lit course, GE diversity global studies course.

2365.01 Sports, Socialists, and Society in Russia and Eastern Europe U 3
This course looks at the development of sports as a substitute and arena for battle between countries, as well as the rise of sports culture more generally in Central and Eastern Europe in terms of nationhood, politics, and corporeality. In this course, students will learn about the history and culture of sports, spectatorship, fandom, the Cold War, and Central and Eastern Europe. GE cultures and ideas and diversity global studies course.

2365.99 Sports, Socialists, and Society in Russia and Eastern Europe (Online) U 3
This course looks at the development of sports as a substitute and arena for battle between countries, as well as the rise of sports culture more generally in Central and Eastern Europe in terms of nationhood, politics, and corporeality. In this course, students will learn about the history and culture of sports, spectatorship, fandom, the Cold War, and Central and Eastern Europe. GE cultures and ideas and diversity global studies course.

2367 East European Immigrant Experience in America U 3
Experiences of East European immigrants; assimilation vs. multiculturalism, American Dream, stereotypes, identity formation; development of written & oral communication skills. Taught in English. Prereq: Level 1 writing course (1110), or English 110 or 111 with permission of instructor; Soph standing. Not open to students with credit for 367. GE writing and comm course: level 2, and diversity soc div in the US course.

2797.02 Central European Study Abroad U 3
Course for Gateway Hungary Program (May Session). Introduction to history, geography, and politics of Hungary and other Cen. Eur. countries, including Poland, Czech Republic, and Slovakia. On-site study of urban culture and development in Budapest and Warsaw; multimedia project in collaboration with Hungarian and Polish university students. No prior knowledge of Hungarian or Cen. Europe required. GE diversity global studies and education abroad course.

3310 Science Fiction: East vs. West U 3
Slavic, American, and British sci-fi on page and screen as reflection of major cultural concerns: progress, utopia, human perfectibility, limits of science and knowledge, gender, identity. Taught in English. Prereq: Not open to students with credit for 3320 or WGSSt 3310. GE VPA and diversity global studies course. Cross-listed in WGSSt.

3333 The Soviet Space Age U 3
Exploration of Space Age as a technological/cultural phenomenon, focusing on the Soviet period and the Space Race, in historical context and in a comparative perspective. Taught in English. GE cultures and ideas and diversity global studies course.

3360 Screening Minorities: Representations of the Other in Slavic Film U 3
Film representations of ethnic and religious others in East European cinema. Taught in English. Prereq: Not open to students with credit for 360. GE VPA course.

3800 Bilingualism: Life in Two Worlds U 3
Exploration of multifaceted spill of bilingual individuals: reasons to become bilingual, cognitive and social advantages of bilingualism, attitudes to people with accents, personality & bilingualism. No prior knowledge of linguistics is required. GE soc sci indivs and groups course.

4520H Slavic and East European Cities U 3
Literary and cultural analysis of a city in East Central, Southeastern, or Eastern Europe (e.g., Sarajevo, Budapest, Prague, Krakow) as an urban space, using sources from many periods and cultures. Repeatable with change of topic. Taught in English. Prereq: Honors standing, and English 1110 or equiv, or permission of the instructor. Not open to students with credit for 520.01H, except by permission of instructor. Repeatable to a maximum of 6 cr hrs.

4597 Politics of Language in Southeast Europe U 3
Social/political import of language in Balkans and neighboring countries; role of language in ethnic identities; manipulation of language to shape political and social structures. Taught in English. Prereq: Jr or Sr standing. GE diversity global studies course and cross-disciplinary seminar course.

4788 Study Trip U 1-6
Short-term study abroad directed by a faculty member as a supplement to a course in Slavic and East European literature or culture. Students pay OSU fees, any fees in excess of tuition, travel & subsistence costs. Prereq: Permission of dept chairperson and Office of International Affairs. Repeatable to a maximum of 12 cr hrs or 2 completions. This course is graded S/U.

4998 Undergraduate Supervised Project U 1-3
Opportunity for undergraduate majors and minors to do non-thesis research or creative work (e.g., translations) under faculty supervision for credit. Prereq: Major or minor status in one of dept's programs and permission of faculty member supervising the project and Undergraduate Studies Coordinator. Repeatable to a maximum of 6 cr hrs or 2 completions. This course is graded S/U.

4999 Undergraduate Thesis Research U 1-3
Faculty-supervised undergraduate research on Russian, Slavic, East Central European, Southeast European, or East European language(s), literature(s), or culture(s), culminating in a thesis. Prereq: Jr standing; permission of instructor under whose supervision the work is to be completed and department Undergraduate Studies Coordinator. Not open to students with credit for 783H. Repeatable to a maximum of 6 cr hrs or 2 completions. This course is graded S/U.

4999H Honors Undergraduate Research Thesis U 1-3
Faculty-supervised honors research on Russian, Slavic, East Central European, Southeast European, or East European language(s), literature(s), or culture(s), culminating in a thesis. Prereq: Sr standing; a grade of A in at least half of the Slavic department courses taken and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Not open to students with credit for 783H. This course is graded S/U.

5193 Individual Studies U G 1-6
Individual study on topic relating to Russian culture, literature, or language under the supervision of a faculty member. Prereq: Permission of dept chairperson. Repeatable to a maximum of 12 cr hrs or 4 completions. This course is graded S/U.

5194 Group Studies U G 1-6
Group Studies. Repeatable to a maximum of 24 cr hrs or 4 completions. This course is graded S/U.

5450 Global Human Trafficking: Realities and Representations U 3
This course will introduce students to the development of human trafficking as it has been understood and represented by governments, policymakers, the media, and popular culture. The objective of this course is to scrutinize common understandings and representations of trafficking and to consider the advantages and disadvantages of such understandings and representations. Prereq: Not open to students with credit for WGSSt 5450. Cross-listed in WGSSt.

5457 Ideology and Viewers: East European Film and Media U 3
This course explores the complex dynamics between ideology, propaganda, and the ways Russian, East European, and U.S. films and media ‘tap into the political unconscious’ of viewers. With the aid of audience studies and reception theory, the course examines film and media reception and the ideological factors which impact it from the early Soviet and socialist times to the present. Repeatable to a maximum of 9 cr hrs.

5797 Study at a Foreign Institution U G 1-9
Opportunity to study at an educational institution in a Slavic-speaking country and receive OSU credit. Students pay OSU fees, any fees in excess of tuition, travel & subsistence costs. Prereq: Permission of dept chairperson. Repeatable to a maximum of 36 cr hrs or 9 completions. This course is progress graded.
416 Slavic Languages and Literatures

6000 Slavic Literature, Film, and Cultural Studies  G  1
Biweekly colloquium for presentations and discussion of research by graduate students, faculty, and visiting scholars. Required for M.A. and Ph.D. degrees in Slavic Literatures and Cultures. Prereq: Grad standing. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

6457 Film Theory, Gender, and National Identity in Slavic  G  3
Introduction to film theory and exploration of changes in national and gender identities during the 20th century as reflected in Slavic cinema. Taught in English. Prereq: Grad standing, or permission of instructor and approved petition to Graduate School. Repeatable to a maximum of 9 cr hrs.

6500 Prosemin in Slavic and East European Literary & Cultural Studies  G  3
Introduction to scholarly approaches to Slavic and East European Literary & Cultural Studies; historical overview of literary & cultural criticism & theory; basic practical approaches to the study of literary & cultural texts. Taught in English. Prereq: Grad standing in dept, or 25 hrs of Russian and/or Slavic and East European literature, or permission of instructor. Not open to students with credit for Russian 660.

6501 Introduction to Slavic and East European Studies  G  3
Proseminar on central topics, current research, and research methodology in the Slavic and East European area studies. Taught in English. Required for the M.A. program in the Center for Slavic and East European Studies. Prereq: Grad standing or permission of instructor. Not open to students with credit for 700.

6600 Slavic Linguistics Professionalization Forum  G  1
Biweekly colloquium for presentations and discussion of research by graduate students, faculty, and visiting scholars. Required for M.A. and Ph.D. degrees in Slavic Linguistics. Prereq: Grad standing. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

6625 Old Church Slavonic  G  3
Introduction to the grammar of Old Church Slavonic, with readings in authentic medieval Slavic texts. Taught in English. Prior knowledge of a Slavic language not required. Prereq: Grad standing or permission of instructor. Not open to students with credit for 810 or 7625.

6999 Masters Research in Slavic  G  3 - 6
Directed research in Slavic for fulfillment of M.A. requirements. Prereq: Grad standing in Slavic and East European Languages and Literatures. Not open to students with credit for 699. This course is graded S/U.

7480 Slavic Film Directors  G  3
Slavic and East European film directors as auteurs; key notions of contemporary film theory. Taught in English. Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 6 cr hrs with change of topic.

7801 College Teaching of Slavic & East European Languages  G  3
Methods & techniques for teaching Slavic/Eur languages at college level; selection & preparation of teaching & testing materials & other aids. Requires participation in intensive workshop prior to Au sem. Required of all teaching assistants. Prereq: Grad standing. Not open to students with credit for Russian 801.

7998 Doctoral Research in Slavic  G  1 - 6
Research in fulfillment of pre-candidacy requirements in Slavic Linguistics or Literature/Cultural Studies. Prereq: Enrollment in Slavic Linguistics or Literature/Ph.D program. Repeatable to a maximum of 12 cr hrs or 4 completions. This course is graded S/U.

8802 Language and Memory: Psycholinguistic Approaches  G  3
Discussion of psycholinguistic works related to memory and its role in language processing, second language learning, and forgetting. Taught in English. Elective for the GIS in Second Language Studies. Prereq: Grad standing or permission of instructor. Not open to students with credit for 804.

8803 Language, culture, and cognition  G  3
Discussion of different methodological & theoretical approaches to the Linguistic Relativity (Sapir-Whorf) hypothesis, including data and scholarship from Russian & other Slavic languages. Taught in English. Prereq: Grad standing, or permission of instructor.

8999 Dissertation Research in Slavic  G  3 - 12
Research in Slavic for dissertation purposes. Prereq: Permission of dept chairperson. Repeatable to a maximum of 36 cr hrs or 12 completions. This course is graded S/U.

1100 Introduction to Ohio State and the College of Social Work  U  1
The purpose of the Social Work Survey Course is to facilitate an eased integration to the OSU undergraduate community, and to assist students with developing relative strategies for a successful transition and participation in the community. Course is designed to provide a preliminary orientation to the social work undergraduate program and curricula. Prereq: Undergraduate standing in the College of Social Work.

1120 Introduction to Social Welfare  U  3
An introduction to the history, structure, and function of the social welfare institution. Prereq: Not open to students with credit for 220 or 520. GE soc sci human, nat, and econ resources course.

1130 Introduction to Social Work in Contemporary Society  U  3
An introduction to the core values, fundamental goals, unique functions and methods of the social work profession. Prereq: Not open to students with credit for 230. GE soc sci indivs and groups course.

1130H Introduction to Social Work in a Contemporary Society  U  3
An introduction to the core values, fundamental goals, unique functions and methods of the social work profession. Prereq: Honors standing. Not open to students with credit for 1130 (230). GE soc sci indivs and groups course.

1140 Minority Perspectives: Race, Ethnicity, and Gender  U  3
Examination of the structure of human societies, cultures, and institutions from the perspective of oppressed minority populations. Prereq: Not open to students with credit for 300. GE diversity soc div in the US course.

2110 Prevention & Youth Development through Sport, Recreation, and Play  U  3
Focuses on how characteristics of environmental contexts contribute to the development of social/academic/health-related problems among youth. Knowledge and skills of general social work practice are applied to guide the design and delivery of prevention and youth development programs in sport/recreation/play settings. There will be sports and recreational activities, so dress accordingly. Prereq: Not open to students with credit for 310.

2200S Nonviolent Communication in Community Agency Settings  U  3
This Service-Learning General Education course will provide students with the fundamentals of nonviolent communication. Students will learn the principles and skills of nonviolent communication in a series of classroom sessions that include both lecture and experiential learning, and then apply classroom learning at a community agency setting. GE service learning course.

2201 Preparation for International Service Learning  U  1
This online course prepares students for participating in international service learning experiences in the global health area. Students will learn ethical approaches to service in international settings, including asset-based approaches to development; charity and justice frameworks to service; cultural humility; ways in which biases and stereotypes interfere with effective service. This course is graded S/U.

3101 Professional Values and Ethics  U  3
Introduction to the NASW Code of Ethics, ethical theory, and ethical issues and dilemmas that confront professional social workers. Prereq: Enrollment in SocWork major. Not open to students with credit for 690.

Introduces students to social and economic justice and injustice and presents multiple strategies to pursue social justice, with a particular emphasis on the role of advocacy. Prereq: Enrollment in SocWork major. Not open to students with credit for 521.

3301 Lifespan Development in Social Work  U  3
Explores human development across the lifespan, with an emphasis on conceptualizing individuals holistically, taking into account factors from various theories that may have relevance to each age group. Offers information about the importance of understanding lifespan development in social work, basics of lifespan development, research and the scientific method, and major theories and theorists.

3401 Research & Statistics for Understanding Social Work Problems and Diverse Populations: Honors  U  3
This is the first course in the BSSW program sequence preparing students to effectively work with research evidence and statistics as social work professionals. Students will develop the requisite skills and knowledge for beginning identify, assess, and apply existing bodies of evidence to answer questions about social work problems and diverse populations. Prereq: Math 1060 or 1075 or above or Math Placement Level R or above, and admission to the Social Work major. Not open to students with credit for 3401E.

3401H Research & Statistics for Understanding Social Work Problems and Diverse Populations: Honors  U  3
This is the first course in the BSSW program sequence preparing students to effectively work with research evidence and statistics as social work professionals. Students will develop the requisite skills and knowledge for beginning identify, assess, and apply existing bodies of evidence to answer questions about social work problems and diverse populations. Prereq: Honors standing; and Math 1060, 1075, or Math Placement Level R; and admission to the Social Work major.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3402</td>
<td>Research &amp; Statistics for Understanding Social Work Interventions</td>
<td>U 3</td>
<td>This is the second course in the BSSW program sequence preparing students to effectively work with research evidence and statistics as it applies to social work interventions at multiple levels. Students will develop the requisite skills and knowledge for beginning to identify, assess, and apply research evidence to inform and evaluate social work practices at multiple levels of intervention. Prereq: 3401.</td>
</tr>
<tr>
<td>3402H</td>
<td>Research &amp; Statistics for Understanding Social Work Interventions: Honors</td>
<td>U 3</td>
<td>This is the second course in the BSSW sequence preparing honors students to effectively work with research evidence and statistics as it applies to social work interventions at multiple levels. Students will develop the requisite skills and knowledge for beginning to identify, assess, and apply research evidence to inform and evaluate social work practices at multiple levels of intervention. Prereq: 3401H.</td>
</tr>
<tr>
<td>3501</td>
<td>Engagement and Interviewing Skills</td>
<td>U 3</td>
<td>Addresses interviewing skills critical to social work. Didactic and experiential methods will provide a foundation for practice and facilitate entry into the field. Prereq: Jr or Sr standing, and enrollment in SocWork major.</td>
</tr>
<tr>
<td>3502</td>
<td>Foundations of Generalist Practice</td>
<td>U 3</td>
<td>Introduces students to the theories, knowledge and skills of generalist social work practice, with an emphasis on work with individuals. Prereq: 3501. Not open to students with credit for 645.</td>
</tr>
<tr>
<td>3503</td>
<td>Social Work Practice with Diverse Populations</td>
<td>U 3</td>
<td>Foundation knowledge and a social work perspective for working with diverse populations, especially those who are oppressed and marginalized. Prereq: 3501.</td>
</tr>
<tr>
<td>3597</td>
<td>Adolescent Parenthood and Sexuality: An International Perspective</td>
<td>U 3</td>
<td>Examination of the biological, psychosocial and cultural forces that influence adolescent sexual behaviors. International comparisons will be emphasized with respect to teenage sexual trends and national policies and programs. Prereq: Jr or Sr standing. Not open to students with credit for 597. Not open to MSW students. GE cross-disciplinary seminar course.</td>
</tr>
<tr>
<td>3600</td>
<td>Introduction to Psychopathology and Social Work Practice</td>
<td>U 3</td>
<td>This course will familiarize students with the major mental disorders, offer strategies for building on clients' strengths and resilience, provide basic tools for screening and referral, and impart knowledge of the mental health delivery system and its resources. Prereq: Jr or Sr standing in social work major, or permission of the department.</td>
</tr>
<tr>
<td>3700</td>
<td>Social Work Practice with Digital Technologies</td>
<td>U 3</td>
<td>This elective BSSW course examines the complex intersections of digital technologies and social work practice through the lens of The Grand Challenges for Social Work Initiative. In this course, students develop cutting-edge competencies and practical digital skills through hands-on application of course principles in an activity-based, experiential learning 'Laboratory Approach'. Prereq: 3501.</td>
</tr>
<tr>
<td>3806</td>
<td>Substance Use Screening, Assessment, Diagnosis, and Treatment Planning</td>
<td>U 3</td>
<td>The focus of this undergraduate elective course is to introduce and review concepts and current issues related to screening, assessment, diagnosis, and treatment planning for individuals with alcohol and other drug (AOD) use problems. Prereq: 3805, or permission of instructor.</td>
</tr>
<tr>
<td>3807</td>
<td>Intervention and Prevention Strategies in Substance Use</td>
<td>U 3</td>
<td>Content includes review of the evidence base and techniques for contemporary and historical models of substance misuse prevention and intervention, including vulnerability, risk, resilience and protective factors. This course meets specified hours of chemical dependency educational content for Ohio's Licensed Chemical Dependency credentials. Prereq: 3805, or permission of instructor.</td>
</tr>
<tr>
<td>4188.01</td>
<td>Undergraduate Field Seminar</td>
<td>U 1</td>
<td>Integration of knowledge and practice; problem solving and discussion of social work practice issues, values, and ethics. Taken concurrently with field practicum. Prereq: 3502 (645). Concurs: 4189. Repeatable to a maximum of 2 cr hrs.</td>
</tr>
<tr>
<td>4188.02</td>
<td>Undergraduate Field Seminar</td>
<td>U 2</td>
<td>Integration of knowledge and practice; problem solving and discussion of social work practice issues, values, and ethics. Taken concurrently with field practicum. Prereq: 3502. Concurs: 4189.</td>
</tr>
<tr>
<td>4189</td>
<td>Field Practicum</td>
<td>U 5</td>
<td>Internship in a social work agency. Students integrate classroom knowledge and skills with practice experiences. Prereq: 3502 (645). Concurs: 4188.01 or 4188.02. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>4193</td>
<td>Individual Studies</td>
<td>U 1-3</td>
<td>Individual study projects in selected areas of social work and social welfare. Prereq: 6 cr hrs in SocWork or related courses, and approval of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>4194</td>
<td>Group Studies</td>
<td>U 1-3</td>
<td>Group study projects in selected areas of social work and social welfare. Prereq: Permission of instructor. Repeatable to a maximum of 3 cr hrs or 3 completions.</td>
</tr>
<tr>
<td>4501</td>
<td>Generalist Practice with Families</td>
<td>U 3</td>
<td>Application of professional values, knowledge, and skills essential for effective generalist social work practice with families. Prereq: 3502 (645). Not open to students with credit for 646.</td>
</tr>
<tr>
<td>4502</td>
<td>Generalist Practice with Groups</td>
<td>U 3</td>
<td>Application of professional values, knowledge, and skills essential for effective generalist social work practice with small groups. Prereq: 3502 (645). Not open to students with credit for 646.</td>
</tr>
<tr>
<td>4503</td>
<td>Generalist Practice with Larger Systems</td>
<td>U 3</td>
<td>Application of professional values, knowledge, and skills essential for effective generalist social work practice with organizations and communities. Prereq: 4502. Not open to students with credit for 647.</td>
</tr>
<tr>
<td>4503H</td>
<td>Generalist Practice with Larger Systems: Honors</td>
<td>U 3</td>
<td>The purpose of this course is to assist students in understanding the values, knowledge base, and skills associated with generalist practice when working with task groups, organizations, and communities. Prereq: Honors standing, and 4502.</td>
</tr>
<tr>
<td>4996H</td>
<td>Honors Research Seminar</td>
<td>U 3</td>
<td>In this seminar course, Undergraduate Honors Students consider which pathway they will pursue in their thesis: an independent research thesis, or a social impact project. Through a combination of guided group and individualized study, students develop knowledge and skills to select their desired pathway and plan their thesis project, which culminates in a proposal. Prereq: 3401H. Prereq or concur: 3402H.</td>
</tr>
<tr>
<td>4998H</td>
<td>Social Impact Project</td>
<td>U 5</td>
<td>Students will work 1:1 with a faculty mentor to plan and implement an innovative and sustainable social impact project that engages with issues of advocacy, justice, and community building. The project must reflect an informed understanding of the social issue being addressed, the communities being served, and how the project will create change. Prereq: Honors standing, and 3402H and 4996H. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>4999</td>
<td>Thesis Research</td>
<td>U 5</td>
<td>Non-honors thesis research. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>4999H</td>
<td>Engaging in Knowledge Building Research - Honors</td>
<td>U 5</td>
<td>Thesis Research Through guided group and independent study, students further develop and implement their independent social work research studies. Prereq: Honors standing, and 4996H. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>5001</td>
<td>Writing for Agency Practice</td>
<td>U G 2</td>
<td>Introduction to documentation skills utilized in the delivery of social work services. Prereq: Jr. Sr, or Grad standing in SocWork, or permission of department.</td>
</tr>
<tr>
<td>5002</td>
<td>AIDS Survey: Facts and Issues</td>
<td>U G 3</td>
<td>This course will provide a review of the physiological, global, cultural and educational issues inherent in understanding HIV disease and implications for social work practice. It will also explore the historical context of HIV and how response to the disease has evolved over the past 30 years in the United States. Prereq: Not open to students with credit for 695.17, 695.18, or 695.19.</td>
</tr>
<tr>
<td>5004</td>
<td>International Social Work</td>
<td>U G 3</td>
<td>Examines a variety of social issues through a global perspective in order to fully appreciate the role of culturally diverse and country-specific responses to social problems. Prereq: Jr, Sr, or Grad standing in SocWork, or permission of department. Not open to students with credit for 695.08.</td>
</tr>
<tr>
<td>5005</td>
<td>Human Trafficking: Domestic and Global Perspectives</td>
<td>U G 3</td>
<td>Examines domestic and global human trafficking from a social work perspective. Prereq: Jr, Sr, or Grad standing.</td>
</tr>
<tr>
<td>5006</td>
<td>Sexualities, Diversity &amp; Social Work</td>
<td>U G 3</td>
<td>Diversity of sexual identities, beliefs, behavior, and lifestyles are explored in the context of social work's mission, values, and ethics for professional practice. Prereq: Jr, Sr, or Grad standing. Not open to students with credit for 695.20.</td>
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<td>Course Code</td>
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<td>5007</td>
<td>Child Welfare I</td>
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<td>5008</td>
<td>Child Welfare II</td>
<td>U</td>
<td>G</td>
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<td>5009</td>
<td>Family Caregiving: Contemporary Issues, Programs, &amp; Policies</td>
<td>U</td>
<td>G</td>
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<td>5011</td>
<td>Loss &amp; Grief: A Social Work Practice Perspective</td>
<td>U</td>
<td>G</td>
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<td>5012</td>
<td>Social Work Approaches to Conflict Resolution</td>
<td>U</td>
<td>G</td>
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<td>5013</td>
<td>Integrative Body-Mind-Spirit</td>
<td>U</td>
<td>G</td>
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<td>5014</td>
<td>Juvenile Delinquency and Correctional Practice in Social Work</td>
<td>U</td>
<td>G</td>
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<tr>
<td>5015</td>
<td>Social Work and the Law</td>
<td>U</td>
<td>G</td>
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<td>5016</td>
<td>Affirmative Social Work Practice with LGBTQI+ Individuals, Couples, and Families</td>
<td>U</td>
<td>G</td>
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<td>5017</td>
<td>Social Work Practice in the Field of Intellectual/Developmental Disabilities</td>
<td>U</td>
<td>G</td>
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<tr>
<td>5018</td>
<td>Interdisciplinary Case Management for Working with Underserved Populations</td>
<td>U</td>
<td>G</td>
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<tr>
<td>5021</td>
<td>Summer Institute of Addiction Studies</td>
<td>U</td>
<td>G</td>
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<td>5023</td>
<td>Family Violence: Social Work Perspectives and Interventions</td>
<td>U</td>
<td>G</td>
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<td>5024</td>
<td>Social Work Licensure Exam Strategies and Skills</td>
<td>U</td>
<td>G</td>
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<td>5025</td>
<td>Social Determinants of Health: An Interdisciplinary Perspective</td>
<td>U</td>
<td>G</td>
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<td>5026</td>
<td>Exploring Community Food Security Strategies</td>
<td>U</td>
<td>G</td>
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<td>5028</td>
<td>Macro-Practice in Community Youth Development</td>
<td>U</td>
<td>G</td>
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<td>5029</td>
<td>SocWork Career Development</td>
<td>U</td>
<td>G</td>
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<td>5030</td>
<td>Global Social Work Perspectives on Poverty and Inequality</td>
<td>U</td>
<td>G</td>
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<td>5031S</td>
<td>Neurodiversity: Building Cultural Competence with Developmental Disability</td>
<td>U</td>
<td>G</td>
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<td>5194</td>
<td>Group Studies</td>
<td>U</td>
<td>G</td>
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<tr>
<td>5798.01</td>
<td>India Study Abroad Program</td>
<td>U</td>
<td>G</td>
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<tr>
<td>5798.02</td>
<td>Social Issues and Human Rights in Nicaragua</td>
<td>U</td>
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<tr>
<td>5798.03</td>
<td>An Exploration of Australia's Systems of Care</td>
<td>U</td>
<td>G</td>
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<tr>
<td>5798.04</td>
<td>Social Issues and Human Rights in Guatemala</td>
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</table>
Introduction to Evidence-Based Practice

This course introduces students to evidence-based strategies and techniques that are used to prevent individuals from developing a substance use disorder; focuses on prevention as a science and highlights several theories and methodologies that govern prevention practice. Designed to meet chemical dependency educational content for Ohio's Licensed Chemical Dependency Counselor credentials.

Prerequisites:
- Grad standing in Social Work.
- Not open to students enrolled in the following subplans: ASP, ASF, ASP/ONL, ASF/ONL.

Course Focus:
- Introduces students to the knowledge, skills, and values needed to prepare for and engage in social work with vulnerable and oppressed populations.
- Prereq: Grad standing in Social Work. Not open to students in the following subplans: ASAP, ASF, ASF/ONL, ASF/ONL.

This course is graded S/U.

Prerequisites:
- Grad standing in Social Work.
- Not open to students enrolled in the following subplans: ASP, ASF, ASP/ONL, ASF/ONL.

Course Focus:
- Introduces students to evidence-based, evidence-supported, and evidence-informed strategies and techniques used with individuals to treat a substance use disorder. It is also designed to meet chemical dependency educational content for Ohio's Licensed Chemical Dependency Board's Prevention Professional credentials.

Prerequisites:
- Grad standing in Social Work.
- Not open to students enrolled in the following subplans: ASP, ASF, ASP/ONL, ASF/ONL.

Course Focus:
- Introduces students to evidence-based, evidence-supported, and evidence-informed strategies and techniques used with individuals to treat a substance use disorder. It is also designed to meet chemical dependency educational content for Ohio's Licensed Chemical Dependency Board's Prevention Professional credentials.

Prerequisites:
- Grad standing in Social Work.
- Not open to students enrolled in the following subplans: ASP, ASF, ASP/ONL, ASF/ONL.

Course Focus:
- Introduces students to evidence-based, evidence-supported, and evidence-informed strategies and techniques used with individuals to treat a substance use disorder. It is also designed to meet chemical dependency educational content for Ohio's Licensed Chemical Dependency Board's Prevention Professional credentials.

Prerequisites:
- Grad standing in Social Work.
- Not open to students enrolled in the following subplans: ASP, ASF, ASP/ONL, ASF/ONL.

Course Focus:
- Introduces students to evidence-based, evidence-supported, and evidence-informed strategies and techniques used with individuals to treat a substance use disorder. It is also designed to meet chemical dependency educational content for Ohio's Licensed Chemical Dependency Board's Prevention Professional credentials.

Prerequisites:
- Grad standing in Social Work.
- Not open to students enrolled in the following subplans: ASP, ASF, ASP/ONL, ASF/ONL.

Course Focus:
- Introduces students to evidence-based, evidence-supported, and evidence-informed strategies and techniques used with individuals to treat a substance use disorder. It is also designed to meet chemical dependency educational content for Ohio's Licensed Chemical Dependency Board's Prevention Professional credentials.

Prerequisites:
- Grad standing in Social Work.
- Not open to students enrolled in the following subplans: ASP, ASF, ASP/ONL, ASF/ONL.

Course Focus:
- Introduces students to evidence-based, evidence-supported, and evidence-informed strategies and techniques used with individuals to treat a substance use disorder. It is also designed to meet chemical dependency educational content for Ohio's Licensed Chemical Dependency Board's Prevention Professional credentials.

Prerequisites:
- Grad standing in Social Work.
- Not open to students enrolled in the following subplans: ASP, ASF, ASP/ONL, ASF/ONL.

Course Focus:
- Introduces students to evidence-based, evidence-supported, and evidence-informed strategies and techniques used with individuals to treat a substance use disorder. It is also designed to meet chemical dependency educational content for Ohio's Licensed Chemical Dependency Board's Prevention Professional credentials.
420 Social Work

7510 Strengths-based Clinical Social Work with Individual Adults
Students will learn several research-informed clinical social work approaches for working with the strengths of individual adults to effect client change such as solution-focused therapy, narrative therapy, strategic therapy, and cognitive-behavioral therapy. Prereq: 6201, 6301, 6401, and 6501; or 7400 and 7500.

7511 Clinical Social Work with Children and Adolescents G 3
Course focuses specifically on the preschool, school aged children and adolescents and provides an overview of: 1) the background of mental health treatment of children/adolescents; 2) development in context; 3) developmental psychopathology; 4) the helping process; and 5) common childhood/adolescent disorders. Prereq: 6201, 6301, 6401, and 6501; or 7400 and 7500.

7512 Clinical Social Work with Couples and Families G 3
Emphasizes a treatment approach that views family members as making up an interlocking system that is the context for the formation and resolution of problems of the family and its members. Focuses on the family as the client rather than individual family members and emphasizes the process and stages of intervention. Prereq: 6201, 6301, 6401, and 6501; or 7400 and 7500.

7513 Clinical Social Work with Groups G 3
Process and methods of advanced clinical social work with groups using various theoretical approaches with different types of groups and member diversity in various settings. Prereq: 6201 (720 and 721), 6301 (733), 6401 (770 and 771), and 6501 (744 or 745); or 7400 and 7500. Not open to students with credit for 741.02.

7514 Behavioral Methods in Social Work G 3
Fundamental principles and practice of cognitive behavioral treatment (CBT) methods in social work across a variety of settings, practice problems, and client populations. Prereq: 6201 (720 and 721), 6301 (733), 6401 (770 and 771), and 6501 (744 or 745); or 7400 and 7500.

7515 Crisis Intervention and Trauma Treatment G 3
Covers different approaches and common steps involved in intervening with clients experiencing a crisis. Given that many clients find experiencing a crisis to be traumatic, this course will also cover several research-informed approaches for treating trauma and post-traumatic stress disorder (PTSD). Prereq: 6201, 6301, 6401, and 6501; or 7400 and 7500.

7516 Assessment and Diagnosis in Clinical Social Work Practice G 3
This course looks at patterns of human behavior and psychosocial functioning conceptualized as psychopathology, deviance, or stressors as resistant to extreme stress. The content addresses such concepts as function and dysfunction, mental health and mental illness, and normality and abnormality. Prereq: 6201, 6301, 6401, and 6501; or 7400 and 7500.

7517 Social Work Practice in Schools G 3
Prepares students to work effectively in the education setting as a licensed school social worker. Prereq: 6201, 6301, 6401, and 6501; or 7400 and 7500.

7518 Advanced Case Management G 1½
Development of competencies in the provision of case management services to address various complex client problems. Prereq: 6201 (720 and 721), 6301 (733), 6401 (770 and 771), and 6501 (744, 745, or 746); or 7400 and 7500.

7519 Advanced Practice in Motivational Interviewing G 1½
Course provides students with advanced practice knowledge, skills, and values related to engaging clients in motivational interviewing conversations for the purpose of promoting their intentional behavior change processes. Prereq: 6201, 6301, 6401, and 6501; or 7400 and 7500.

7520 Pharmacotherapy in Social Work Mental Health and Substance Abuse G 1½
A survey of key principles, issues, and social work practice implications related to common interventions involving medications for addressing mental health and substance abuse problems. Prereq: 6201, 6301, 6401, and 6501; or 7400 and 7500.

7521 Evidence-based Substance Abuse Treatment G 3
Examines specific evidence-informed social work practices in assessment, diagnosis, treatment, prevention, and relapse prevention with substance misuse, abuse, and dependence. Prereq: 6201 (720 and 721), 6301 (733), 6401 (770 and 771), and 6501 (744, 745, or 746); or 7400 and 7500.

7523 Clinical SW Practice with Older Adults G 3
Advanced clinical practice with a focus on evidenced-based treatment modalities for older persons and their families. Prereq: 6201 (720 and 721), 6301 (733), 6401 (770 and 771), and 6501 (744, 745, or 746); or 7400 and 7500. Not open to students with credit for 751.02.

7530 Needs Assessment and Program Design G 3
Introduces program development and design, the skills for program implementation and management, needs assessment and program design for collective decision-making in organizations, systems and communities. Prereq: 6201, 6301, 6401, and 6501; or 7400 and 7500.

7531 Resource Acquisition for Human Service Organizations G 3
Offers methods of acquiring financial and material resources for human service programs through grant writing, fund raising, lobbying, and campaigns. Prereq: 6201 (720 and 721), 6301 (733), 6401 (770 and 771), and 6501 (744, 745, or 746); or 7400 and 7500. Not open to students with credit for 742.07.

7532 Supervision and Human Resource Management G 3
Provides an overview of models and specific skills used in social work supervision and effective management of the human resources which are appropriate to both clinical and community practice settings. The focus of the course is to acquire the knowledge and skills needed to manage human service workers effectively. Prereq: 6201, 6301, 6401, and 6501; or 7400 and 7500.

7533 Financial Management G 3
Basic knowledge and skills of financial management in nonprofit human service organizations. Financing, budgeting and accounting are covered. Prereq: 6201 (720 and 721), 6301 (733), 6401 (770 and 771), and 6501 (744, 745, or 746); or 7400 and 7500. Not open to students with credit for 742.05.

7534 Prevention Strategies in Social Work Practice G 1½
Examines prevention models, the evidence surrounding specific preventive interventions, and practice issues related to implementing prevention approaches. Prereq: 6201 (720 and 721), 6301 (733), 6401 (770 and 771), and 6501 (744, 745, or 746); or 7400 and 7500.

7550 Community Practice and Development G 3
Prepares students for social work practice in community settings including engagement, assessment, intervention, evaluation in community practice. Prereq: 6201 (720 and 721), 6301 (733), 6401 (770 and 771), and 6501 (744, 745, or 746); or 7400 and 7500. Not open to students with credit for 730.03.

7551 Strategic Planning for Organizational and Community Change G 3
Use strategic planning methods for engaging others; assessing strengths, needs, and environment; setting goals; developing plans; fostering support and partnerships; and evaluating and monitoring results. Prereq: 6201 (720 and 721), 6301 (733), 6401 (770 and 771), and 6501 (744, 745, or 746); or 7400 and 7500.

7570 Policy Analysis and Social Legislation Process G 3
Covers the legislative process of social welfare policy making and provides analytical skills of policy analysis to help legislators with policy choices at both state and federal government levels. Prereq: 6201 (720 and 721), 6301 (733), 6401 (770 and 771), and 6501 (744, 745, or 746); or 7400 and 7500.

7600 Longitudinal Practice G ½
Experiential opportunity to build competencies in communication, physical examination, and clinical reasoning emphasizing active participation in team-based care. Prereq: Enrollment in Interprofessional Healthcare certificate program, or permission of instructor. This course is graded S/U. Cross-listed in Nursing.

7601 Patients within Populations G ½
Incorporation of patients' concerns, health care provider goals and skills in team based care for patients vulnerable for illnesses and health issues as a result of their ages, social and demographic conditions, culture, and lifestyle choices. Prereq: Enrollment in Interprofessional Healthcare certificate program, or permission of instructor. This course is graded S/U. Cross-listed in Nursing.

7604 Hotspotting G 1
Strategic use of data to reallocate resources to a small subset of high-needs, high-cost patients among interdisciplinary teams of pharmacy, health and rehabilitation sciences, nursing, medicine and social work students. Prereq: Enrollment in Interprofessional Healthcare certificate program, or permission of instructor. This course is graded S/U. Cross-listed in Nursing.

7610 Integrative Seminar I on Aging and Health G 3
Introduces students to health, illness and geriatric social work. Theories and psychosocial implications are presented, as are experiences and outcomes for diverse populations.

7611 Integrative Seminar II on Aging and Health G 3
Introduces students to the critical issues, theories, and knowledge need to understand and work with older persons from an interdisciplinary perspective and at multiple levels. Prereq: 6201 (720 and 721), 6301 (733), 6401 (770 and 771), and 6501 (744, 745, or 746); or 7400 and 7500.
Integrative Seminar I on Mental Health and Substance Abuse

This course surveys: mental health practice approaches; mental health program and policy issues; mental health research and evaluation. Critical consideration is given to issues relevant to mental health and mental illness across time and stakeholder interests. Students examine public, professional, cultural, economic, and political influences on the development and delivery of mental health care.
Prereq: 6201 (720 and 721), 6301 (733), 6401 (770 and 771), and 6501 (744, 745, or 746); or 7400 and 7500.

Integrative Seminar II on Mental Health and Substance Abuse

Surveys social work practice, program, and policy issues, theories, and evidence related to substance use, misuse, abuse, and dependency across the lifespan.
Prereq: 6201 (720 and 721), 6301 (733), 6401 (770 and 771), and 6501 (744, 745, or 746); or 7400 and 7500.

Integrated Seminar I on Child and Youth Services

Course provides students with the opportunity to develop beginning level knowledge and skills for social work practice in the field of services to children and families, as well as knowledge of policies which affect practices in this field. The course is an integrative seminar to explore the continuum of services, programs, and policies which affect families and children.
Prereq: 6201, 6301, 6401, and 6501; or 7400 and 7500.

Integrated Seminar II on Child and Youth Services

The second of two in a series, prepares students with competencies essential for working with children, youth, and families in various service settings.
Prereq: 7630.

Integrative Seminar I on Community and Social Justice

Focuses on multiple social systems associated with social and economic inequality. Social intervention and social work practice are critically reviewed for advancing community and social justice.
Prereq: 6201 (720 and 721), 6301 (733), 6401 (770 and 771), and 6501 (744, 745, or 746); or 7400 and 7500.

Integrative Seminar II on Community and Social Justice

Focuses on social issues and intervention strategies at the organizational, community, and policy levels using a social structural perspective to assess social interventions and discusses alternative interventions.
Prereq: 7640.

Interdisciplinary Perspective on Developmental Disabilities

Provides an introduction to the psychosocial, medical, and educational implications of developmental disabilities.
Prereq: Permission of instructor. Not open to students with credit for 717.01 or 717.03. Cross-listed in HTHRSc, EduSt, Nursing, Psych, and SphHrng.

Interdisciplinary Perspective on Autism Spectrum Disorders

Teaches the analytical skills necessary to comprehend and formulate an interdisciplinary framework relating to major scientific and theoretical perspectives in autism spectrum disorders.
Prereq: Permission of instructor. Not open to students with credit for 717.01 and 717.02. Cross-listed in HTHRSc, EduSt, Nursing, Psych, and SphHrng.

Research and Professional Development Seminar

Provides a foundation for doctoral study in social work, emphasizing issues in translational research, standards for research and scholarship, transition from practitioner to academic.
Prereq: Doctoral standing in Social Work or permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

Individual Studies

Independent study under the supervision of a faculty member.
Prereq: Doctoral standing in SocWork. Repeatable to a maximum of 8 cr hrs or 8 completions. This course is graded S/U.

Group Studies

Specialized topic courses in areas of social work and social welfare.
Prereq: Doctoral student in SocWork. Repeatable to a maximum of 9 cr hrs or 9 completions.

Knowledge Building

Examines the role of theory and elements of knowledge development for social work, social policy, and social change.
Prereq: Doctor standing. Not open to students with credit for 900.01.

Theories of Change for Social Problem Interventions

Develops students' knowledge of theory and research concerning processes of change with individuals and larger systems, occurring with or outside of planned interventions. Not open to MSW students, but could be open to thesis master's students in other disciplines with permission of instructor.
Prereq: Doctor standing, or permission of instructor. Not open to students with credit for 900.02 or 900.03.

Methods for Social Work Research

Course introduces the components and features of qualitative, quantitative, and mixed methods research that contributes to the interdisciplinary knowledge base used in social work, spanning, for example, developmental processes, behavior, health, mental health, social ecological influences, and social intervention.
Prereq: Doctor standing in SocWork; or Grad standing, and permission of instructor.

Qualitative Methods in Social Work Research

Course reviews basic knowledge on qualitative research; the epistemologies, ontologies, and methodologies pertinent to qualitative inquiry. Paradigmatic, ethical, theoretical, historical, and political issues involved in the conceptualization and conduct of qualitative research are reviewed, with specific application to social work research.
Prereq: Doctor standing, or permission of instructor.

Intervention Development and Research in Social Work

Course guides students in the development of an intervention that addresses an issue in their practice area. They will use/build upon knowledge related to their area of interest. Students will gain knowledge of the prevalence and nature of the issue, the understanding of the individual and social environmental factors contributing to it, and familiarity with existing interventions that address it.
Prereq: or concurrent: 8401, and Doctor standing in SocWork; or Grad standing, and permission of instructor.

Implementation Science in Health and Human Service Organizations and Systems

Familiarizes students with the current state of the knowledge, theories and frameworks, research design, and methods for studying the dissemination, adoption, implementation, and sustainment of interventions in the context of organizations and systems. Given the complex and multi-level context of implementation research, course will cover pragmatic designs and an array of methodological approaches.
Prereq: 8402, or equiv: qualitative research course, as determined by instructor, with permission granted by instructor.

Structural Equation Modeling for the Social and Behavioral Sciences

Students will learn fundamental concepts, best practices, and skills to conduct and interpret results from three common types of SEM: path analysis, confirmatory factor analysis, and general structural equation models. Appropriate methods for typical types of social science data will be emphasized. Students will also be introduced to two approaches to longitudinal modeling in SEM.
Prereq: Doctor standing in SocWork, or permission of instructor.

Mixed Methods Research in Social and Health Sciences

Course provides an overview of mixed methods approaches, with an emphasis on application to social and health sciences research. Discusses the history and philosophy underlying mixed methods research with a focus on the epistemological underpinnings of mixed methods designs and their components. Research traditions incorporated under the umbrella of quantitative/qualitative methods are considered.
Prereq: 8401 and 8402, and Doctor standing in SocWork; or Grad standing, and permission of instructor.


Course focuses on the use of empirical methods in social welfare policy research and acquaints students with several key analytic approaches through a series of directed readings on quantitative work in social welfare policy. Discusses the strengths and limitations of multiple regression analysis and the relationship between regression and causal modeling. Extensions and alternatives are discussed.
Prereq: or concurrent: 8401, and Doctor standing in SocWork; or Grad standing, and permission of instructor.

Statistics I for Social Work Research

Stats I will equip students with knowledge of the role of quantitative analyses in social work research and its relationship to other components of the research process. Content in the course will be related to topics studied in students' research methods and theory courses. Will focus on the application of skills using SPSS and Stata software and on the reporting of findings from analyses.
Prereq: Doctor standing in SocWork; or Grad standing, and permission of instructor.

Statistics II for Social Work Research

Stats II focuses on two topics central to social science research: multiple regression and the development of measures or scales. Introductory to intermediate regression topics will be covered, such as mediation, moderation, dummy variables in regression, and hierarchical regression. The course will prepare students to conduct power analyses, and to generate and interpret confidence intervals.
Prereq: Doctor standing in SocWork; or Grad standing, and permission of instructor.

International Social Work and Social Development

This course focuses on the multidimensional and dynamic local, national, regional, and international contexts and issues that help shape human welfare and social development in various parts of the globe. The course is designed to analyze theories, models, and strategies of social development in industrialized and developing countries.
Prereq: Doctor standing in SocWork, or permission of instructor. Not open to students with credit for 822.04.
## Sociology

### 1101 Introductory Sociology
- **Units:** 3
- **Description:** Fundamental concepts of sociology and introduction to the analysis of social problems and interactions (e.g., wealth, gender, race, inequality, family, crime) using sociological theories. Ao, Sp, Su Sems. Prereq: Not open to students with credit for 1101H (101H), 1101E, 101 RurlSoc 1500 (105), or equiv. GE soc sci orgs and polities and diversity soc div in the US course.

### 1101H Introduction to Sociology (Honors)
- **Units:** 3
- **Description:** Fundamentals of sociology and introduction to the analysis of social problems and social interactions, (e.g., wealth, gender, race inequality, family, crime) using sociological theories. Ao, Sp, Su Sems. Prereq: Honors standing, or permission of department or instructor. Not open to students with credit for 1101H (101H), 1101E, 101 RurlSoc 1500 (105), or equiv. GE soc sci orgs and polities and diversity soc div in the US course. SS Admis Cond course.

### 2194 Group Studies
- **Units:** 3
- **Description:** Topics vary each semester offered. Repeatable to a maximum of 6 cr hrs.

### 2202 Social Problems and Public Policy
- **Units:** 3
- **Description:** Analysis of contemporary social problems such as inequality, discrimination, and crime.

### 2209 Introduction to Criminal Justice
- **Units:** 3
- **Description:** Examination of the development and administration of criminal law and agencies (police, courts, corrections); emphasis on criminal proceedings and their justification. Prereq: Not open to students with credit for 209.

### 2210 Sociological Aspects of Deviance
- **Units:** 3
- **Description:** Study of the definition, identification, treatment, and control of types of legal, moral, and status deviance, such as crime, mental illness, alcoholism, and other individual pathologies. Ao, Sp Sems. Prereq: Not open to students with credit for 210. GE soc sci indivs and groups course.

### 2211S Corrections: An Inside-Out Course
- **Units:** 3
- **Description:** Examines theory and policy, and is comprised of OSU students and prison inmates with class meetings held in a local state prison. Though course is repeatable, only one iteration will count for GE credit. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs. GE service learning course.

### 2290 Sociology of Death and Dying
- **Units:** 3
- **Description:** Provides a sociological overview of death and dying, including the demographics of death, social epidemiology, and social meanings of death and dying. Prereq: Not open to students with credit for 290.

### 2300 Sociology of Culture and Popular Culture
- **Units:** 3
- **Description:** Provides a sociological understanding of culture including the influence of culture on inequality and social change and sociological interpretations of popular culture. The course will examine how sociologists define and empirically study culture; theoretical approaches; aspects of culture including media, consumer goods, etc; prevalence of cultural patterns in all societies.

### 2309 Introduction to Law and Society
- **Units:** 3
- **Description:** Introduction to the law as a social institution, including the origins of law and its relationship to other social institutions, social control, and social change.

### 2310 Sociology of Gangs
- **Units:** 3
- **Description:** Broad range of topics related to gang activity with a focus on why individuals join gangs, societal consequences of gangs, and social policy. Prereq: Not open to students with credit for 310.

### 2320 Sociology of Education
- **Units:** 3
- **Description:** Current social trends as they affect education; backgrounds of school children, social status of teachers, role of power and bureaucracy. Prereq: Not open to students with credit for 320. GE soc sci human, nat, and econ resources course.

### 2330 Marriage and Society
- **Units:** 3
- **Description:** The impact of modern society and social policies on marriage forms emphasizing mate selection, cohabitation, marriage alternatives, and interactional patterns within the family. Prereq: Not open to students with credit for 330.

### 2340 Sex and Love in Modern Society
- **Units:** 3
- **Description:** How behavior and meanings relating to sex and love have changed in recent decades; what explains these changes and the consequences of these changes. Prereq: Not open to students with credit for 340.

### 2345 The Social Structure of American Society
- **Units:** 3
- **Description:** An expositions of the structural patterns of American society, using sociological theories and data to form an integrated perspective. Prereq: Not open to students with credit for 345. GE soc sci orgs and polities course.

### 2367.01H The Political Elite and Interest Groups (Honors)
- **Units:** 3
- **Description:** Sociological analysis of American politics and society, emphasizing political elites and interest groups, and the changing role of the state in the economy. Prereq: Honors standing, and English 1110 (110), 1111, or 111, or equivalent; or permission of department or instructor. Not open to students with credit for 367.01H. GE writing and comm: level 2 and soc sci orgs and polities course.

### 2367.02 Urban Social Problems
- **Units:** 3
- **Description:** The place of the city in social organization; the emergence, nature, and problems of modern urbanism; projects based in census and field data. Prereq: English 1110 (110) or 1111 (111) or equiv. Not open to students with credit for 367.02. GE writing and comm course: level 2 and soc sci orgs and polities course.

### 2370 Social Psychology in Sociological Perspective
- **Units:** 3
- **Description:** Analysis of relationships between society and the individual. Learning of motives and social roles, socialization, group organization and disorganization. Development of self and personality. Prereq: Not open to students with credit for 370. GE soc sci indivs and groups course.

### 2391 Social Organization of Communities
- **Units:** 3
- **Description:** Development of the modern community; approaches to the study of communities; significance of processes and value systems for community organization and disorganization. Prereq: Not open to students with credit for 391.

### 2797 Study at a Foreign Institution
- **Units:** 1 - 9
- **Description:** An opportunity for students to study at a foreign institution and receive Ohio State credit for their work. Students will pay Ohio State fees in excess of Ohio State tuition as well as all travel and subsistence costs. Prereq: Permission of department chairperson. Repeatable to a maximum of 27 cr hrs or 3 completions. This course is graded SU.

### 3191 Internship Program in Sociology and Criminology
- **Units:** 1 - 6
- **Description:** An opportunity for work experience and on-the-job learning in sociology and criminology related employment. Employment or experience through the Internship Program conducted under the supervision of the internship coordinator. Requires completion of internship learning agreement. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded SU.

### 3200 Sociology of Immigration
- **Units:** 3
- **Description:** Provides a sociological understanding of contemporary migration both globally and with a particular focus on the U.S. The course will examine why migration occurs; how it is sustained over time; and how immigrants are incorporated into the host society. Social relations as central to understanding immigration will be a focus of the course. GE diversity soc div in the US course.

### 3302 Technology and Global Society
- **Units:** 3
- **Description:** Social aspects of technology, social change, and technological development; underdevelopment and the global economy. Prereq: Not open to students with credit for Sociol 302.

### 3306 Sociology of Poverty
- **Units:** 3
- **Description:** A study of low-income peoples, especially concerning the effect of poverty on them, and their consequent social participation. GE diversity soc div in the US course.

### 3315 Sociology of Terrorism
- **Units:** 3
- **Description:** Provides a broad review of the definitions, histories, types, and theories of terrorism from a sociological perspective. Prereq: Not open to students with credit for 315.

### 3380 Racial and Ethnic Relations in America
- **Units:** 3
- **Description:** Historical and contemporary study of race and ethnicity in the U.S. with a focus on relations within and between groups. Prereq: Not open to students with credit for 3380 or 380. GE soc sci indivs and groups course.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3410</td>
<td>Criminology</td>
<td>U 3</td>
<td>Theories of delinquency, crime, and criminal careers; scientific aspects of crime measurement. Prereq: Not open to students with credit for 410.</td>
</tr>
<tr>
<td>3410H</td>
<td>Criminology (Honors)</td>
<td>U 3</td>
<td>Theories of delinquency, crime, and criminal careers; scientific aspects of crime measurement. Prereq: Honors standing, or permission of department or instructor. Not open to students with credit for 410H.</td>
</tr>
<tr>
<td>3430</td>
<td>Sociology of the Family</td>
<td>U 3</td>
<td>Analysis of relationships between the family and the larger society including mate selection, status of women, and patterns of husband-wife and parent-child relationships. Prereq: Not open to students with credit for 430.</td>
</tr>
<tr>
<td>3434</td>
<td>The Child and Society</td>
<td>U 3</td>
<td>A study of the ways in which society socializes children; current breakdown in the socializing processes and implications for the school and other educational agencies. Prereq: Not open to students with credit for 434.</td>
</tr>
<tr>
<td>3435</td>
<td>Sociology of Gender</td>
<td>U 3</td>
<td>Analyzes multilevel processes that differentiate women and men in education, employment, and relationships. Examines variations in gendered experiences across race-ethnicity, social class, and sexuality. Prereq: Not open to students with credit for 435. GE diversity soc div in the US course.</td>
</tr>
<tr>
<td>3460</td>
<td>Environmental Justice</td>
<td>U 3</td>
<td>Examines environmental issues from a sociological perspective, especially human causes of environmental change such as technology, population, and consumption, and social reactions. Prereq: Not open to students with credit for 460. GE soc sci human, nat, and ecos resources course.</td>
</tr>
<tr>
<td>3463</td>
<td>Social Stratification: Race, Class, and Gender</td>
<td>U 3</td>
<td>The study of social inequality with a focus on inequalities by class and status, race and ethnicity, and gender. GE soc sci human, nat, and ecos resources course.</td>
</tr>
<tr>
<td>3463H</td>
<td>Social Stratification: Race, Class, and Gender (Honors)</td>
<td>U 3</td>
<td>The study of social inequality with a focus on inequalities by class and status, race and ethnicity, and gender. Prereq: Honors standing, or permission of department or instructor. Not open to students with credit for 463H. GE soc sci human, nat, and ecos resources course.</td>
</tr>
<tr>
<td>3464</td>
<td>Work, Employment, and Society</td>
<td>U 3</td>
<td>Analysis of work organization; control and authority relationships in the workplace; comparative studies of work and labor movements; industrial decline; automation. Prereq: Not open to students with credit for 464.</td>
</tr>
<tr>
<td>3467</td>
<td>Sociology of Religion</td>
<td>U 3</td>
<td>The social role of religious institutions and beliefs, with particular reference to the United States; the relation between religion and other aspects of society. Prereq: Not open to students with credit for 467. GE diversity soc div in the US course.</td>
</tr>
<tr>
<td>3487</td>
<td>Research Methods in Sociology</td>
<td>U 3</td>
<td>Introduction to sociological research techniques, methodological approaches, and relevant quantitative procedures. Prereq: Not open to students with credit for 487.</td>
</tr>
<tr>
<td>3487H</td>
<td>Research Methods in Sociology (Honors)</td>
<td>U 3</td>
<td>Introduction to sociological research techniques, methodological approaches, and relevant quantitative procedures. Prereq: Honors standing, or permission of department or instructor. Not open to students with credit for 487H.</td>
</tr>
<tr>
<td>3488</td>
<td>Introduction to Sociological Theory</td>
<td>U 3</td>
<td>Introductory statement of the nature of sociological theory, its basic problems, assumptions, major types and orientations, and principal contributions to the discipline. Prereq: 3 cr hrs taken at 2000-3000 level. Not open to students with credit for 488.</td>
</tr>
<tr>
<td>3549</td>
<td>Statistics in Sociology</td>
<td>U 3</td>
<td>An introduction to the application and interpretation of quantitative analysis in sociological research; emphasis on the description of social variables and hypothesis testing. Au, Sp, Su Semes. Prereq: Not open to students with credit for 549. GE data science course.</td>
</tr>
<tr>
<td>3597.01</td>
<td>World Problems in Global Context</td>
<td>U 3</td>
<td>Sociological analysis of contemporary world societies - non-industrialized, industrializing, and industrialized - with special attention to major social institutions and patterns of social change. Prereq: Not open to students with credit for 597.01. GE diversity global studies and cross-disciplinary seminar course.</td>
</tr>
<tr>
<td>3597.02</td>
<td>World Population Problems</td>
<td>U 3</td>
<td>General introduction to population studies, emphasizing how population growth and structure have caused or aggravated social problems in various countries. Prereq: A general education quantitative reasoning course. Not open to students with credit for 597.02. GE diversity global studies and cross-disciplinary seminar course.</td>
</tr>
<tr>
<td>3630</td>
<td>Medical Sociology</td>
<td>U 3</td>
<td>Sociological analysis of the distribution of disease, and the nature of health care institutions, health professions, and the delivery of health care services. Prereq: Not open to students with credit for 630.</td>
</tr>
<tr>
<td>3798.03</td>
<td>Genocide and Its Aftermath in Rwanda</td>
<td>U 3</td>
<td>Course explores the 1994 Rwandan genocide through active learning experiences in Rwanda. Topics include: origins and causes of the genocide in Rwanda and globally; forms of violence, participants, and victims; aftermath and legal response including gacaca courts and collective memorials; and human rights, development, and economic growth in Rwanda today. Prereq: Permission of instructor. GE education abroad course.</td>
</tr>
<tr>
<td>4000E</td>
<td>Social Science Business Collaborative: A Service Learning Approach</td>
<td>U 3</td>
<td>Sociology 4000E is an Honors Embedded course in which students learn to develop research projects through collaboration with a local business on a service project. Uses University resources to address community issues, facilitate data collection, learn project management and present research findings in academic and applied settings and learn through improving the community. Prereq: Honors standing, and 1101; or permission of instructor. Repeatable to a maximum of 6 cr hrs. GE service learning course.</td>
</tr>
<tr>
<td>4000S</td>
<td>Social Science Business Collaborative: A Service Learning Approach</td>
<td>U 3</td>
<td>Sociology 4000S is a course that helps students develop research projects through collaboration with a local business to work on a service project; link university resources to bear on community issues, facilitate data collection, learn project management, present research findings in academic and applied settings, learn through improving the community. Prereq: 1101, or permission of instructor. Repeatable to a maximum of 6 cr hrs. GE service learning course.</td>
</tr>
<tr>
<td>4189.02</td>
<td>Fieldwork in Criminology and Criminal Justice</td>
<td>U 3</td>
<td>Practicum in criminology and/or the criminal justice system. Credit does not apply to hours in the sociology/criminology major. Prereq: Enrollment in Sociology or Criminology major, or permission of instructor. Not open to students with credit for 589.02. This course is graded S/U.</td>
</tr>
<tr>
<td>4198.03</td>
<td>Criminal Investigation</td>
<td>U 3</td>
<td>Theory and practice of criminal investigation and prosecution in the U.S. Criminal Justice System with attention to: (1) the roles of the law enforcement officer, prosecutor, and court personnel; (2) familiarization with various investigatory techniques; (3) the collection and preservation of physical evidence; and (4) constitutional limitations and ethical considerations. Prereq: Enrollment in Criminal Justice major or minor, or permission of instructor.</td>
</tr>
<tr>
<td>4193</td>
<td>Individual Studies</td>
<td>U 1 - 6</td>
<td>Individual studies. Prereq: 12 cr hrs in Soc, and permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>4463</td>
<td>Food and Inequality in the United States</td>
<td>U 3</td>
<td>An examination of the topic of social inequality through the lens of food. An analysis of how social stratification affects individual's access to food, as well as the meaning people attach to food. Prereq: Jr or Sr standing, or permission of instructor or department. GE soc sci orgs and politics and diversity soc div in the US course.</td>
</tr>
<tr>
<td>4505</td>
<td>Capital Punishment in the United States</td>
<td>U 3</td>
<td>Examines the role of capital punishment in the contemporary United States. Prereq: Jr or Sr standing; or permission of instructor, or department. Not open to students with credit for 505.</td>
</tr>
<tr>
<td>4506</td>
<td>Drugs and Society</td>
<td>U 3</td>
<td>Sociological perspective on substance use. Exploration of the causes, consequences, and criminalization of substance use; consideration of race and class differences in drug enforcement; media portrayals of substance use; global perspectives on drug use and drug law. Prereq: Jr standing or higher, or permission of instructor.</td>
</tr>
<tr>
<td>4507</td>
<td>The Criminal Justice System</td>
<td>U 3</td>
<td>Advanced study of the role and operation of the criminal justice system: police, courts, and corrections. Prereq: Jr standing or above, or permission of instructor or department.</td>
</tr>
<tr>
<td>4508</td>
<td>Violence</td>
<td>U 3</td>
<td>Examines societal definitions of violence, theories that are most commonly invoked to explain violence, and research designed to critically evaluate theories of violence. Prereq: Jr standing or above, or permission of instructor or department. Not open to students with credit for 4670.02, 506, or 673.</td>
</tr>
<tr>
<td>4509</td>
<td>Sociology of Law</td>
<td>U 3</td>
<td>The relationship between law and social order emphasizing the structure of law, social origins of law, and law as a source of social change. Prereq: Jr standing or above, or permission of instructor or department. Not open to students with credit for 509.</td>
</tr>
</tbody>
</table>
4510 Gender, Crime, and the Criminal Justice System U 3
Analysis of females as participants in and victims of crime, the treatment of women in the criminal justice system, women as workers in criminal justice fields. Prereq: Jr or Sr standing; or permission of instructor, or department. Not open to students with credit for 510.

4511 Juvenile Delinquency U 3
A sociological perspective in youth and crime; special attention to the magnitude of youth crime, theories, juvenile justice systems, and prevention and control efforts. Prereq: Jr or Sr standing; or permission of instructor, or department.

4609 Neighborhoods and Crime U 3
Exploration of the social distribution of crime, with attention to the patterns and sources of neighborhood crime, and the impact of crime on fear of crime and on neighborhood decline. Prereq: Jr or Sr standing; or permission of instructor, or department. Not open to students with credit for 609.

4610 Sociology of Deviant Behavior U 3
An examination of the nature, types, and societal reactions to deviant behavior; special emphasis on the process of stigmatization and the emergence of deviant subcultures. Prereq: Jr or Sr standing; or permission of instructor, or department. Not open to students with credit for 610.

4611 Prisons, Jails, and Community Corrections U 3
Overview of prisons, jails, and community corrections from institutional and prisoner perspectives. Prereq: Jr or Sr standing; or permission of instructor, or department. Not open to students with credit for 611.

4615 Control and Prevention of Crime and Delinquency U 3
Analysis of the operational effectiveness of special measures and programs pointed toward the control and prevention of crime and delinquency. Prereq: Jr or Sr standing; or permission of instructor, or department. Not open to students with credit for 615.

4635 Gender and Society U 3
Advanced seminar on the social and personal meanings of masculinity and femininity and variations across race-ethnicity, sexuality, and social class. Examines gender as a social phenomenon and system of social practices. Prereq: Jr or Sr standing; or permission of instructor, or department.

4650 Undergraduate Seminar in Social Networks U 3
In this seminar, we will study both the theoretical and substantive development of the field of social networks as well as methodological tools necessary for conducting research. We will explore how our relationships significantly shape many aspects of our lives including cognition, motivations, identity, social mobility, group organization and resource distribution. Prereq: Any GE Basic Computation, or GE Mathematical or Logical Analysis course; or permission of instructor.

4655 Sociology of Sport U 3
Sport from a sociological perspective; relationship of sport to social institutions; socialization into sport; stratification within sports; sport and small group analysis. Prereq: Not open to students with credit for 655.

4998 Undergraduate Research in Sociology U 1 - 9
Undergraduate research or creative activities in variable topics. Prereq: Permission of Instructor. Repeatable to a maximum of 9 cr hrs or 9 completions. This course is graded S/U.

4999.01 Thesis Research: Sociology (Non-Honors) U 1 - 3
A conference-thesis course for students not enrolled in the Honors program; subject matter will vary depending upon student's topic. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

4999.01H Honors Thesis Research: Sociology (Honors) U 1 - 3
A conference-thesis course; subject matter will vary depending upon student's topic. At least 2 semesters are required for the degree BA with social distinction. Failure to receive a mark of S in this course is a disqualification for special honors. Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

4999.02 Thesis Research: Criminology and Criminal Justice (Non-Honors) U 1 - 3
A conference-thesis course for students not enrolled in the Honors program; subject matter will vary depending on student's topic. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

4999.02H Honors Thesis Research: Criminology and Criminal Justice (Honors) U 1 - 3
A conference-thesis course; subject matter will vary depending upon student's topic. At least 2 semesters are required for the degree BA with criminology distinction. Failure to receive a mark of S in this course is a disqualification for special honors. Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

5194.01 Group Studies: Sociological Theory U G 3
Topics vary each semester offered. Prereq: 3 cr hrs in Sociology at 2000-3000 (200-400) level or above. Repeatable to a maximum of 9 cr hrs.

5194.02 Group Studies: Social Organization U G 3
Topics vary each semester offered. Prereq: 3 cr hrs in Sociology at 2000-3000 (200-400) level or above. Repeatable to a maximum of 9 cr hrs.

5194.03 Group Studies: Medical Sociology U G 3
Topics vary each semester offered. Prereq: 3 cr hrs in Sociology at 2000-3000 (200-400) level or above. Repeatable to a maximum of 9 cr hrs.

5194.04 Group Studies: Criminology and Criminal Justice U G 3
Topics vary each semester offered. Prereq: 3 cr hrs in Sociology at 2000-3000 (200-400) level or above. Repeatable to a maximum of 9 cr hrs.

5194.05 Group Studies: Sociology of Education U G 3
Topics vary each semester offered. Prereq: 3 cr hrs in Sociology at 2000-3000 (200-400) level or above. Repeatable to a maximum of 9 cr hrs.

5194.06 Group Studies: Race/Ethnicity/Minority Relations U G 3
Topics vary each semester offered. Prereq: 3 cr hrs in Sociology at 2000-3000 (200-400) level or above. Repeatable to a maximum of 9 cr hrs.

5194.07 Group Studies: Social Psychology U G 3
Topics vary each semester offered. Prereq: 3 cr hrs in Sociology at 2000-3000 (200-400) level or above. Repeatable to a maximum of 9 cr hrs.

5194.08 Group Studies: The Family U G 3
Topics vary each semester offered. Prereq: 3 cr hrs in Sociology at 2000-3000 (200-400) level or above. Repeatable to a maximum of 9 cr hrs.

5194.09 Group Studies: Research Methodology U G 3
Topics vary each semester offered. Prereq: 3 cr hrs in Sociology at 2000-3000 (200-400) level or above. Repeatable to a maximum of 9 cr hrs.

5194.10 Group Studies: Urban/Community/Ecology U G 3
Topics vary each semester offered. Prereq: 3 cr hrs at 2000-3000 (200-400) or higher level. Repeatable to a maximum of 9 cr hrs.

5194.11 Group Studies: Labor Markets/Economy and Society U G 3
Topics vary each semester offered. Prereq: 3 cr hrs in Sociology at 2000-3000 (200-400) level or above. Repeatable to a maximum of 9 cr hrs.

5194.12 Group Studies: Political Sociology U G 3
Topics vary each semester offered. Prereq: 3 cr hrs in Sociology at 2000-3000 (200-400) level or above. Repeatable to a maximum of 9 cr hrs.

5194.13 Group Studies: Population/Demography U G 3
Topics vary each semester offered. Prereq: 3 cr hrs in Sociology at 2000-3000 (200-400) level or above. Repeatable to a maximum of 9 cr hrs.

5194.14 Group Studies: Gender U G 3
Topics vary each semester offered. Prereq: 3 cr hrs in Sociology at 2000-3000 (200-400) level or above. Repeatable to a maximum of 9 cr hrs.

5194.15 Group Studies: Unclassified U G 3
Topics vary each semester offered. Prereq: 3 cr hrs in Sociology at 2000-3000 (200-400) level or above. Repeatable to a maximum of 9 cr hrs.

5450 Sociology of Global Health and Illness U G 3
Sociological study of health and illness from a global perspective. Topics include health, illness, and related behaviors; disease processes, correlates of diseases, global efforts to improve health, and comparative health care systems. Prereq: Jr, Sr, Grad standing; or permission of instructor, or department. Not open to students with credit for 450. GE diversity global studies course.

5463 Advanced Social Stratification U G 3
In-depth theoretical and empirical questions driving the field of inequality, poverty, and social mobility in the 21st century will be explored. We will focus on class, race, and gender inequality in the US, though the course will also develop tools for understanding inequality and poverty across times and places. Prereq: Jr, Sr, Grad standing; or permission of instructor or department.
5503 Social Change in Central and Eastern Europe U G 3
Examines and discusses various approaches to social change, focusing on Central and Eastern Europe and its transition to the post-communist era. It deals with political, economic, and cultural aspects of life in the region.
Prereq: 3 cr hrs at 2000-3000 (200-400) or higher level. Not open to students with credit for 503.

5525 Global Criminology U G 3
Provides students an introduction to global crime from a criminal justice perspective.
Prereq: Jr, Sr, Grad standing; or permission of instructor, or department. Not open to students with credit for 525.

5605 Sociology of Sexuality U G 3
A social and institutional approach to the study of sexuality with a focus on sexual identities, practices, institutions, communities, and sexuality movements.
Prereq: Jr, Sr, Grad standing; or permission of instructor, or department. Not open to students with credit for 605.

5618 Sociology of Police and Policing U G 3
Sociological understanding of the origins of routine police conduct and misconduct; representative topics include police-citizen encounters and police abuse of discretion.
Prereq: Jr, Sr, or Grad standing; or permission of instructor, or department. Not open to students with credit for 618.

5629 Health Disparities in Social Context U G 3
Analysis of the social determinants of health and health disparities with a focus on stratification/inequality. Includes variations in health disparities over the life course.
Prereq: Jr standing or above, or permission of instructor or department. Not open to students with credit for 629.

5650 Presenting and Communicating Quantitative Data U G 3
Course will broaden knowledge of social science data sources, sharpen analytic skills, utilize software to graphically present research findings, and develop skills in writing about quantitative research for professional and lay audiences.
Prereq: 3647 and 3549, and Jr standing; or permission of instructor.

5797 Study at a Foreign Institution U G 1 - 9
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Students will pay Ohio State fees in excess of Ohio State tuition, as well as all travel and subsistence costs.
Prereq: Permission of department chairperson. Repeatable to a maximum of 27 cr hrs or 3 completions. This course is progress graded (SU).

5925 Offender Decision Making and Prisoner Reentry U G 3
Introduces students to research on contemporary issues faced by state and federal correctional systems. The course draws from multidisciplinary scholarship that examines offender decision making, factors that promote recidivism, and how to successfully reintegrate inmates back into society.
Prereq: Completion of a 3000-level or higher Sociol course, and Jr or Sr standing; or Grad standing; or permission of instructor or department.

5950 Evidence-Based Practice in Criminal Justice U G 3
This course examines the history and principles of effective evidence-based programs in criminal justice settings. Students will develop an evidence-based solution to a real world problem, in a criminal justice agency of their choosing.
Prereq: Completion of a 3000-level or higher Sociol course, and Jr or Sr standing; or Grad standing; or permission of instructor or department.

6193 Individual Studies G 1 - 12
Individual Studies. Repeatable. This course is graded S/U.
Prereq: 18 cr hrs in Sociol; or Grad standing, and permission of instructor. Repeatable to a maximum of 99 cr hrs or 99 completions. This course is graded S/U.

6582 Sociological Theory U G 3
Analysis of classical systems and their representatives, e.g., positivist social evolutionism (Comte, Spencer, Durkheim), historical materialism (Marx-Engels), and humanist idealistic reactions (Toennies, Simmel, M. Weber).
Prereq: Grad standing. Not open to students with credit for 782.

6608 Qualitative Methods in Sociology U G 3
A survey of qualitative approaches to social research, including participant observation, intensive interviewing, and archival/documentary analysis.
Prereq: Grad standing. Not open to students with credit for 704.

6649 Intro to Quantitative Research/Multiple Regression G 3
Assumptions, principles, and applications of the multiple regression model in sociological practice; basic model, dummy variables, and special functional forms.
Prereq: Honors standing, and Grad standing; or permission of instructor. Not open to students with credit for 646 or 645.

6650 Categorical Data Analysis G 3
Techniques of analysis for examining nominally measured dependent variables, and treatment of error structures that are heteroskedastic or correlated across cases.
Prereq: 6649 (649) and Grad standing, or permission of instructor. Not open to students with credit for 703.

6655 Sociological Research Methods G 3
Theory and practice in essentials of the research process; comparison of alternative approaches and design models; questionnaire construction, interview techniques, and related problems.
Prereq: 6649 (649) or equiv, or permission of instructor. Not open to students with credit for 651.

6708 Design and Analysis of Qualitative Sociological Research G 3
Problems and techniques of non-quantitative data analysis including case studies, participant observation, field diary, autobiography, and historical records.
Prereq: 6649. Not open to students with credit for 708. Repeatable to a maximum of 10 cr hrs.

6710 Design and Analysis of Sociological Research G 3
Problem formulation, hypothesis testing, argumentation from data, and writing for professional audiences; research practicum leading to a research project.
Prereq: Grad standing in Sociol, or permission of instructor.

6800 Proseminar in Sociology G 1
Each week an area of specialization within sociology will be discussed by a professor whose major interest is in that area; provides an overview of special topics and current issues. Open only to 1st year graduate students.
Prereq: Not open to students with credit for 800. This course is progress graded (SU).

6802 Teaching Sociology G 2
Designed to prepare sociology graduate students to teach independent sections of basic sociology classes.
Prereq: Grad standing in Sociol, or permission of instructor. Not open to students with credit for 802. This course is progress graded (SU).

6999 Research for Thesis G 1 - 12
Research for thesis purposes only. Au and Sp Semesters Repeatable. This course is graded S/U.
Prereq: Not open to students with credit for 998. This course is graded S/U.

7700 Writing and Publishing in Sociology G 3
Designed to review the mechanics of writing and publishing in sociology and related specialty journals.
Prereq: 6655 (651). Not open to students with credit for 700.

7710 Introduction to Social Networks G 3
Focuses on the theoretical and methodological bases of social network analysis.
Prereq: Grad standing, and enrollment in Comm or Sociol program; or permission of instructor.
Not open to students with credit for Comm 7710. Cross-listed in Comm.

7711 Sociology of Work G 3
A survey of selected topics in sociology of workplace relations; control, administration, leadership, and occupations; theoretical approaches to the study of workplace relations.
Prereq: Grad standing or permission of instructor. Not open to students with credit for 711.

7712 Seminar in Social Networks G 3
The theory, substance, and methods for understanding patterns, causes, and consequences of relationships among populations of actors. Sociol 6649 and 6651 recommended.
Prereq: Grad standing, and enrollment in Comm or Sociol program; or permission of instructor.
Not open to students with credit for Comm 7712. Cross-listed in Comm.

7718 Criminology Theory and Research G 3
An advanced introduction and critical study of measurement, theory and research in criminology.
Prereq: Grad standing or permission of instructor. Not open to students with credit for 718.

7723 Sociology of Crime Control and Punishment G 3
Theoretical survey of reactions to crime including arrest, charge, and sentencing.
Prereq: Grad standing. Not open to students with credit for 723.

7735 Sociology of Gender G 3
An examination of current theory and research on the sociology of gender through extensive readings.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 735.

7753 Introduction to Demographic Analysis G 3
An exposition of census data and vital statistics, demographic rates, life tables, cohort analysis, and similar elementary techniques and data sources in demography.
Prereq: Graduate standing, or permission of instructor with approval by Graduate School for undergraduate credit.

7754 Introduction to Demography G 3
An exposition of census data and vital statistics, demographic rates, life tables, cohort analysis, and similar elementary techniques and data sources in demography.
Prereq: One course in Stat. Not open to students with credit for 754.

7755 Fertility G 3
A critical and methodological analysis of fertility, with special emphasis on the social context of reproductive behavior in American society.
7756 Sociology of Immigration G 3
Theories and models of population mobility; determinants and consequences of migration and immigration processes; policy implications of cross-national and rural-urban migration.
Prereq: Not open to students with credit for 756.

7758 Health Disparities in the United States G 3
Social and demographic forces that affect well being, health, and survival.
Prereq: Grad standing, or permission of instructor with approval by Graduate School for undergraduate credit.

7760 Sociology of Conflict and Violence G 3
Comparative analysis of the sources and impact of conflict and violence.
Prereq: 10 cr hrs in Socio, or Grad standing. Not open to students with credit for 765.

7761 Social Stratification G 3
A survey of major theories, issues, and empirical literature on societal stratification and inequality with particular focus on the United States.
Prereq: Not open to students with credit for 761.

7780 Racial and Ethnic Differences G 3
An analysis of the origin, persistence, adaptation and change of systems and racial and ethnic differentiation.
Prereq: Not open to students with credit for 780.

7790 Social Organization of the Community G 3
An examination of the nature, structures, processes, and trends of social organization of modern communities.
Prereq: Not open to students with credit for 790.

7806 Social Movements G 3
Explores how and why social movements arise and their impact on society.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 806.

7820 Sociology of Education G 3
Special problems will be considered in different semesters, including urban education, student movements, bureaucratic-professional problems, school-community relations, and innovation.
Prereq: Not open to students with credit for 820.

7837 Political Sociology G 3
Selected topics in political sociology.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 837.

7884.01 Seminar: Sociological Theory G 3
Topics in sociological theory selected to give the advanced student opportunity to pursue special studies not otherwise offered. Repeatable to a maximum of 12 cr hrs.

7884.03 Seminar: Medical Sociology G 3
Topics in medical sociology selected to give the advanced student opportunity to pursue special studies not otherwise offered. Repeatable to a maximum of 12 cr hrs.

7884.04 Seminar: Criminology and Criminal Justice G 3
Topics in criminology and criminal justice selected to give the advanced student opportunity to pursue special studies not otherwise offered. Repeatable to a maximum of 12 cr hrs or 4 completions.

7884.06 Seminar: Race/Ethnic/Minority Relations G 3
Topics in race/ethic/minority relations selected to give the advanced student opportunity to pursue special studies not otherwise offered. Repeatable to a maximum of 12 cr hrs or 4 completions.

7884.08 Seminar: The Family G 3
Topics in family studies selected to give the advanced student opportunity to pursue special studies not otherwise offered. Repeatable to a maximum of 12 cr hrs.

7884.09 Seminar: Research Methodology G 1 - 3
Topics in research methodology selected to give the advanced student opportunity to pursue special studies not otherwise offered. Repeatable to a maximum of 12 cr hrs or 4 completions.

7884.10 Seminar: Urban/Community G 3
Seminar on current topics in the sociological study of social and structural aspects of community and urban life.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 12 cr hrs.

7884.11 Seminar: Labor Markets/Economy and Society G 3
Topics in labor market and economy selected to give the advanced student opportunity to pursue special studies not otherwise offered. Repeatable to a maximum of 12 cr hrs.

7884.12 Seminar: Political Sociology G 3
Topics in political sociology selected to give the advanced student opportunity to pursue special studies not otherwise offered. Repeatable to a maximum of 12 cr hrs.

7884.13 Seminar: Population/Demography G 3
Topics in population/demography selected to give the advanced student opportunity to pursue special studies not otherwise offered. Repeatable to a maximum of 12 cr hrs.

7884.14 Seminar: Gender G 3
Topics in the sociology of gender selected to give the advanced student opportunities to pursue special studies not otherwise offered.
Prereq: Not open to students with credit for 884.14. Repeatable to a maximum of 12 cr hrs.

7884.15 Seminar: Unclassified G 3
Unclassified seminar.
Prereq: Not open to students with credit for 884.15. Repeatable to a maximum of 12 cr hrs.

8580 Issues in Contemporary Theory G 3
A critical examination of contemporary theory in sociology with an emphasis on individual action in the social context.
Prereq: 8582 (762), or 8584 (784), or permission of instructor.

8607 Causal Modeling G 3
A survey of advanced problems in the multivariate analysis of sociological data.
Prereq: 6649 (649). Not open to students with credit for 707.

8632 Analysis of Longitudinal Data G 3
Provides an introduction to event history analysis and other types of longitudinal data analysis.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 862.

8651 Hierarchical Linear Models G 3
Introduction to hierarchical linear and nonlinear models; review of three level, latent growth curve, cross-classified, and latent variable models for hierarchical data.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 851.

8801 PhD Proseminar G 1
Orientation for new PhD students in sociology.
Prereq: Doct standing in Socio. Not open to students with credit for 801. This course is progress graded (SU).

8802 Seminar for Graduate Interdisciplinary Specialization in G 3
Demography
Core required course for students enrolled in the Graduate Interdisciplinary Specialization in Demography (GISD). Presents an introduction to demography (the study of populations) and population health.
Prereq: Grad standing, or permission of instructor with approval by Graduate School for undergraduate credit. Repeatable up to a maximum of 12 cr hrs. Cross-listed in PubHlth.

8999 Research For Dissertation G 3 - 16
Research for dissertation purposes only. Repeatable. This course is graded SU.

Somali

1101.01 Elementary Somali I U 4
Development of oral proficiency in Somali through basic listening, speaking, and reading skills using a competency-based curriculum. Not open to native speakers of the language through regular course enrollment.
Prereq: Not open to students with credit for 1101.02. This course is available for EM credit. GE for lang course.

1101.02 Elementary Somali I (Online) U 4
Development of oral proficiency in Somali through basic listening, speaking, and reading skills using a competency-based curriculum. Not open to native speakers of the language through regular course enrollment.
Prereq: Not open to students with credit for 1101 or 1101.01. This course is available for EM credit. GE for lang course.

1102.01 Elementary Somali II U 4
Continuation of 1101; further work on developing oral proficiency in Somali through basic listening, speaking, and reading skills using a competency-based curriculum. Not open to native speakers through regular course enrollment or EM credit.
Prereq: 1101, 1101.01, or 1101.02, or permission of instructor. Not open to students with credit for 1102.02. This course is available for EM credit. GE for lang course.

1102.02 Elementary Somali II (Online) U 4
Further develop oral, listening, reading, and written proficiencies in elementary conversational Somali using a competency-based approach. Lexicon control will be developed to a further range of nominal, verbal, and attributive and miscellaneous items. Students are encouraged to practice what they have learned from the course materials, to do and complete all activities and exercises.
Prereq: 1101, 1101.01, or 1101.02, or permission of instructor. Not open to students with credit for 1102 or 1102.01. This course is available for EM credit. GE for lang course.

1103 Elementary Somali III U 4
Continuation of 1102; further work on developing oral proficiency in Somali through basic listening, speaking, and reading skills using a competency-based curriculum. Not open to native speakers through regular course enrollment or EM credit.
Prereq: 1102. Not open to students with credit for 101. This course is available for EM credit. GE for lang course.
2201 Intermediate Somali I  
U  3  
Students gain enhanced proficiency in the speaking, reading, listening, and writing of the Somali language in a meaningful communicative context. Prereq: 1103. This course is available for EM credit.

2241 Intermediate Somali II  
U  3  
Students develop skills in the ability to understand other cultures and patterns of thought and to communicate across culture, cultural ideologies, and national boundaries. Prereq: 2201. This course is available for EM credit.

2220 Introduction to South Asia Studies  
U  3  
A multi-disciplinary introduction to South Asia's geographical, political, cultural, and religious contexts and connections. Prereq: English 1110 or equiv. Not open to students with credit for CompStd 2220 or NELC 2220. GE culture and ideas and diversity global studies course. Cross-listed in CompStd.

3620 Everyday Life in South Asia  
U  3  
An examination of everyday life as experienced by members of the culturally diverse population of South Asia. Prereq: English 1110. Not open to students with credit for NELC 3620 or CompStd 3620. GE cultures and ideas course. Cross-listed in CompStd.

3625 Understanding Bollywood, Knowing India: Hindi Cinema Since 1960  
U  3  
Explores life in India from the lens of Hindi language cinema. Course engages with social class, gender, sexuality, Indian diaspora in the West, family structure, marriage, politics, caste, language (special focus on multilingualism in India), religion, and globalization, and how these relate to lived experiences of people in Indian society. Not for Film Studies credit. Prereq: Not open to students with credit for NELC 3625, 3625.01, or 3625.02. GE cultures and ideas and diversity global studies course.

3630S South Asian Identities in the United States: Assimilation and Enculturation  
U  3  
The course aims to introduce students to diversity of identities within the immigrant South Asian community in the United States. Students read about how people define, interpret, and understand identity. This is a service learning course and students spend significant time getting to know the range of experiences of South Asians in Central Ohio. GE cultures and ideas and diversity course. Offered fall only. Cross-listed in CompStd.

5241 Interdisciplinary Approaches to South Asian Studies  
U  3  
A connection of the disparate threads of the geographic and cultural entity of South Asia, offering an overview and interdisciplinary perspective on the factors that affect everyday life in the region. Prereq: English 1110. Not open to students with credit for NELC 5241.

Spanish

1101 Spanish I  
U  4  
Development of listening, reading, speaking, and writing skills in cultural contexts. Not open to native speakers of this language through regular course enrollment or EM credit to or students with 3 or more years of high school Spanish. Students with 1+ years of high school Spanish must take the MultiCAT placement exam. Prereq: Not open to students with credit for 1101.01, 1102, 1102.01, 1103, 1103.01, 1113, 1155, or equiv. courses. This course is available for EM credit. GE for lang course.

1102 Spanish II  
U  4  
Further development of listening, reading, speaking, and writing skills in cultural contexts. Both classroom-based and 100% online sections available each semester. Not open to native speakers of this language through regular course enrollment or EM credit. Prereq: 1101 or 1101.01. Not open to students with credit for 1102.01, 1103.01, 1103.51, 1155, or equiv. courses. This course is available for EM credit. GE for lang course.

1103 Spanish III  
U  4  
Continuing development of listening, reading, speaking, and writing skills in cultural contexts. Both classroom-based and 100% online sections available each semester. A grade of C- or above is required to continue to 2202. Not open to native speakers of this language through regular course enrollment or EM credit. Prereq: 1102 or 1155 or equiv. Not open to students with credit for 1103.01, 1103.51, 2202.01, or 2202.51. This course is available for EM credit. GE for lang course.

1113 Intensive Spanish III for Heritage Learners  
U  4  
This course builds on Heritage learners’ prior knowledge and skills of spoken and written Spanish, expanding on their ability to communicate in a variety of contexts. It employs a multifaceted approach that fosters the development of the four skills (listening, speaking, reading, and writing). This course requires consistent attendance, pre-class preparation, and active-in-class participation. Course is not open to second language learners of Spanish (SLL). Prereq: 1102 or 1155. Not open to students with credit for 1103. GE for lang course.

1155 Intensive Spanish for Review  
U  4  
Intensive beginning Spanish; emphasis on development of proficiency in listening, speaking, reading and writing in cultural contexts. Not open to native speakers of this language through regular course enrollment or EM credit, or to students with less than 3 years of high school Spanish. Prereq: By placement exam only. Not open to students with credit for 1101.01, 1102.01, 1103, 1103.51, 101.01, 102.66, 102.01, 103.66, 103.01, 104, or 111. This course is available for EM credit. GE for lang course. FL Admis Cond course.

2150 Culture and Literature of Spain  
U  3  
Introduction to the principal developments of the culture of Spain through literature, art, music, film, and folklore. Prereq: Not open to students with credit for 150. GE cultures and ideas course. GE diversity global studies course.

2151 Latin American Culture and Literature  
U  3  
Introduction to the culture of Spanish America and Brazil through literature, art, music, film, and folklore. Prereq: Not open to students with credit for 151. GE cultures and ideas and diversity global studies course.

2193 Individual Studies  
U  1 - 9  
Individual studies. Prereq: Written permission of department and additional paperwork required. Repeatable to a maximum of 60 credits or 60 completions. This course is graded S/U.

2194 Group Studies  
U  1 - 9  
Group studies. Prereq: Written permission of department is required. Repeatable. This course is graded S/U.

2202 Spanish IV  
U  3  
Ongoing development of listening, reading, speaking, and writing skills and knowledge of Hispanic cultures. Taught in Spanish. Both classroom-based and 100% online sections available each semester. A grade of C- or above is required to move on to Spanish 3000-level. Not open to native speakers of this language through regular course enrollment or EM credit. Prereq: 1103, or equiv. Not open to students with credit for 2202.01 or 2202.51.

2208.22 Andean Music Ensemble  
U  ½ - 1  
Learning to playing and performing music from Bolivia, Peru, Ecuador, Chile, Colombia and Argentina. The course explores various musical genres within the Andean region. Students study techniques and methods for playing Andean instruments and learn to sing in Spanish, Quechua and Aymara. Repeatable to a maximum of 10 or hrs or 10 completions. Cross-listed in Music.

2213 Spanish IV for Heritage Speakers  
U  3  
This course identifies & expands on Spanish heritage students’ diverse identities & bilingual range through grammar review, vocabulary building, spelling and punctuation, & the development of composition skills. Listening, speaking, reading, & writing are emphasized through readings, written essays, & oral presentations. A grade of C- or above is required to move on to Spanish 3000-level. Not open to native, non-native, or non-heritage speakers of this language through regular course enrollment or EM credit. Prereq: 1103.01 or equiv., or permission of instructor. Not open to students with credit for 2202.01 or 2202.51 or equiv. This course is available for EM credit.

2342 Introduction to Latino Studies  
U  3  
Introduction to the cultures, experiences, histories and definitions of Latino peoples in the United States; taught in English. Prereq: English 1110 (110) or equiv. Not open to students with credit for 242 or CompStd 2322 (242). GE cultures and ideas and diversity course. Cross-listed in CompStd 2322.

2302 Spanish Conversation  
U  3  
Intensive practice in conversation on selected topics. Only available through transfer credit or study abroad. Prereq: 1103.01 (103.01 & 104, or 111), or 1155 (103.66), or 2200H (104H), or equivalent with a grade of C- or higher. Repeatable to a maximum of 9 or hrs.

2320 Don Quijote in Translation  
U  3  
Intro to Cervantes’s masterpiece, Don Quijote. Students explore the novel through critical reading, writing, and class discussion. The course surveys the most salient features of Baroque Spanish art, and introduces major themes and narrative techniques included in the novel. An informed reading of DQ fosters the awareness of homologous artistic features and social issues in contemporary society. GE III and diversity global studies course.

2322 Spanish Society and the Arts  
U  3  
Introduction to Spanish art and its relationship to society, from Goya to Toral: a visual approach to culture. Prereq: Not open to students with credit for 322. GE VPA and diversity global studies course.

2330 Reinventing America  
U  3  
Introduction to visual and verbal representation of Latin American multi-ethnic cultures through literature and visual arts; emphasis on construction of American identities and nations. Prereq: Not open to students with credit for 330. GE VPA and diversity global studies course.
2332 Introduction to Andean and Amazonian Cultures U 3
Historical formation of contemporary societies in the Andean and Amazonian regions, including
their ethnic, social, and cultural features; taught in English.
Prereq: Not open to students with credit for 332. GE cultures and ideas and diversity global
studies course.

2380 Introduction to Latin American Film U 3
Introduction to Latin American film traditions; analysis of genres, filmmakers, and alternate
aesthetics; focus on relation of film to social, political, and economic processes.
Prereq: Not open to students with credit for 380. GE VPA and diversity global studies course.

2389 Spanish in the US: Language as Social Action U 3
Spanish in the US teaches students to understand and analyze discourses surrounding
language and ethnicity in the media today. We focus on connecting theoretical tools to social
patterns, with a strong emphasis on current media and culture.
Prereq: Not open to students with credit for Comm 2704. GE diversity soc div in the US course.
Cross-listed in Comm 2704.

2506 Latin American Culture in a Business Context U 3
Examination of cultural differences and similarities between the U.S. and Latin America to
understand the effects of conducting business with competent cultural understanding. Taught
in English. Course applies to the Spanish Minor for Business.
Prereq: Not open to students with credit for 510. Priority given to Scholars program students.

2520 Latin American Literature (in Translation): Fictions and Realities U 3
Critical examination of modern Latin American literature (in English translation), paying close
attention to its own literary and cultural traditions. Taught in English. Credit does not apply
toward a major or minor in Spanish.
Prereq: Not open to students with credit for 520. GE lit and diversity global studies course.

2797 Topics in Foreign Study U 1 - 9
Credit from study abroad for courses not offered by department. Not applicable to Spanish
Major or Minor.
Prereq: Permission of departmental study abroad advisor. Repeatable.

2798.11 Bolivia: Cultures and Identities U 3
This interdisciplinary course introduces students to the History, Politics, Cultures, and Identities
of Bolivia. It explores its main geographical regions; the heritage and traditions of its peoples;
and the different political and cultural currents within the country and its different regions.
Students will be encouraged to think critically about Bolivia, the U.S. and different global
forces.
Prereq: 4516 or permission of instructor. GE education abroad course.

2798.12 Globalization in the Mayan Country, History, Culture, Tourism, and the Environment in the Yucatan U 3
The Yucatan offers a unique scenario in the Americas in which relevant issues of socio-
economic development; preservation of archeological or historical sites; protection of the
environment; reinvigoration of indigenous culture, & emergence of alternative models of
tourism can be studied altogether. The program will offer a comparative framework for a
diversity of academic projects or interests.
GE education abroad course.

2798.30 Madrid in the World, the World in Madrid: The Spanish Capital as a Global City, Past and Present U 3
This interdisciplinary Global May course offered with the Office of International Affairs (OIA)
introduces students to the multicultural and global history of the city of Madrid, Spain through
readings and films, site visits, and lectures by local scholars and residents. Enrollment in course
contingent on acceptance to the program through OIA.
GE education abroad course.

2798.80 Latin America Study Tour U 1
This short study tour offers students the opportunity to apply and expand on what they have
learned in co-requisite coursework about the language, history & culture of Latin America
through guided tours and outdoor activities. Faculty-led study abroad program offered through
Newark campus only.
Concur: 2151 or 1113.01; or permission of instructor. Repeatable to a maximum of 2 cr hrs.

3401 Advanced Grammar U 3
In-depth examination of difficult points of Spanish grammar; emphasis on comprehension of
critical grammatical concepts in the language.
Prereq: A grade of C- or above in 2202 or 2213. Not open to students with credit for 3401H.

3403 Intermediate Spanish Composition U 3
Spanish prose forms and practice in writing descriptive, narrative, and expository compositions.
Prereq: A grade of C- or above in 2202 or 2213. May be taken concurrently with 3401, 3401H,
and/or 3404. Not open to students with credit for 3413, 4603, or 4613.

3403H Intermediate Spanish Composition U 3
Students work toward a final portfolio featuring the following genres: literary essay, self-portrait,
argumentative essay, interview feature article, & short story. During the short-story portion, students collaborate with Spanish-speaking children in Columbus City Schools as part of the
literacy outreach initiative, which culminates in publishing bilingual storytbooks in "Que pasa?" OHIO STATE.
Prereq: Honors standing, a grade of C- or above in 2202 or 2213, and GPA 3.4 or above. May
be taken concurrently with 3401H and/or 3404. Not open to students with credit for 3403, 3413,
4603, or 4613.

3404 Spanish Phonetics U 3
The fundamental principles of phonetic analysis are introduced in a simple and concise manner
to show how Spanish sounds are produced, how they fall into patterns, and how they change
in different environments. Major attention is devoted to practice with corrective exercises,
introduction training in phonetic transcription and, to a lesser extent, the problems of teaching
pronunciation.
Prereq: A grade of C- or above in 2202 or 2213. May be taken concurrently with 3401, 3403,
and/or 3403H.

3406 Intermediate Business Spanish U 3
An introduction to business Spanish with emphasis on business terminology, commercial
transactions, and international procedures.
Prereq: 3403 (403), or 3403H (403H) with a grade of C- or higher. Not open to students with
credit for 406. FL Admis Cond course.

3413 Spanish for Heritage Speakers U 3
Covers, reviews and practices grammatical structure through language, literature, and culture
of the Hispanic world, as well as incorporate the experiences of heritage speakers in the United
States. Students will produce writing in various forms & genres, including literary responses,
expository essays, & short stories (narrative).
Prereq: A grade of C- or above in 2202 or 2213. Prereq or concur: 3401, 3401H, or 3404. Not
open to students with credit for 3450H.

3450 Introduction to the Study of Literature and Culture in Spanish U 3
Required course for Spanish majors and minors. An introduction to literary and cultural
analysis of texts in Spanish. This course presents strategies for reading and analyzing literary
and cultural texts from various Spanish speaking countries to prepare students for more advanced
courses in the Spanish program.
Prereq: A grade of C- or above in 3403, 3413, 4603, or 4613; and GPA 3.4 or above. Not open to students with credit for 3450H.

3450H Introduction to the Study of Literature and Culture in Spanish U 3
Required course for Honors Spanish majors and minors. An introduction to literary and cultural
analysis of texts in Spanish. This course presents strategies for reading and analyzing literary
and cultural texts from various Spanish speaking countries to prepare students for more
advanced courses in the Spanish program.
Prereq: Honors standing; and a grade of C- or above in 3403, 3413, 4603, or 4613; and GPA
3.4 or above. Not open to students with credit for 3450H.

3570 CLLC Radio U 3
Student partners prepare 3 target language broadcasts, each 1 hour in length. Broadcasts
stream live over the Internet, then become podcast for public use. Student "DJs" conduct target
language research on radio broadcast history and at least 15 thematic topics and related music
that interests them. Students choose their music and content with approval and guidelines,
then produce scripts.
Prereq: Permission of instructor.

4193 Individual Studies U 1 - 9
Individual studies.
Prereq: A grade of C- or above in 3450 (450), Repeatable. This course is graded SU.

4194 Group Studies U 1 - 9
Group studies.
Prereq: A grade of C- or above in 3450 (450), and permission of instructor. Repeatable. This
course is graded SU. FL Admis Cond course.

4430 Introduction to Spanish Linguistics U 3
Introduction to the analysis of Spanish from the perspective of modern linguistic theory.
Prereq: A grade of C- or above in 3401 (401), or 3401H (401H) and 3404 (404). Not open to
students with credit for 4534 (604), 4534H (604H), 4430H (5303H), or 430. FL Admis Cond course.

4430H Honors Introduction to Spanish Linguistics U 3
Introduction to the analysis of Spanish from the perspective of modern linguistic theory.
Prereq: Honors standing, and a grade of C- or above in 3401 (401), or 3401H (401H) and 3404
(404), and GPA 3.4 or above. Not open to students with credit for 4534, 430, or 530H. FL Admis
Cond course.

4501.51 Advanced Spanish for the Professions: STEM U 3
Provides students in STEM disciplines with background about their majors in Spanish-speaking
countries; teaches culturally and linguistically appropriate presentational skills. Special project
required.
Prereq: Permission of department. Repeatable to a maximum of 9 cr hrs.
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
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<tbody>
<tr>
<td>4515</td>
<td>Andean Art, Culture, and Society</td>
<td>U 3</td>
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<td></td>
<td>Representations of cultural, social, and literary identities in the Andean</td>
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<td>regions in early and modern societies' daily life as embodied in maps,</td>
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<td>narratives, art, photography, autobiographical and literary texts. Taught</td>
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<td>4516</td>
<td>The Formation of Bolivian National Cultures</td>
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<td>Overview of Bolivian literatures and cultures, and how they reflect the</td>
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<td>country's identities as well as its changing social, political, and cultural</td>
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<td>realities in the process of national formation. Taught in English.</td>
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<td>4534</td>
<td>Spanish Phonology</td>
<td>U 3</td>
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<td>Analysis of the phonological structure of Spanish and a comparison with</td>
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<td>English; practical problems of teaching pronunciation. Embedded Honors</td>
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<td>4534E</td>
<td>Spanish Phonology</td>
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<td>Analysis of the phonological structure of Spanish and a comparison with</td>
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<td>English; practical problems of teaching pronunciation. Embedded Honors</td>
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<td>Honors standing, and a grade of C- or above in 4430 or 4430H.</td>
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<td>4536</td>
<td>Language Change in Spanish</td>
<td>U 3</td>
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<td>Historical development of the Spanish language, including details of</td>
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<td>phonological, morphosyntactic, and semantic changes; external history; and</td>
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<td>changes currently in progress.</td>
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<td>4537</td>
<td>Spanish Psycholinguistics</td>
<td>U 3</td>
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<td>Overview of child language acquisition, second language acquisition and child</td>
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<td>and adult language disorders in Spanish-speaking populations.</td>
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<td>4551</td>
<td>Spanish Golden Age Literature</td>
<td>U 3</td>
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<td>Introductory critical study of major literary works from the 16th and 17th</td>
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<td>centuries in Spain.</td>
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<td>Prereq: A grade of C- or above in 3450 (450) or 4430H (530H).</td>
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<tr>
<td>4551E</td>
<td>Spanish Golden Age Literature</td>
<td>U 3</td>
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<tr>
<td></td>
<td>Introductory critical study of major literary works from the 16th and 17th</td>
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<td></td>
<td>centuries in Spain.</td>
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<td>Prereq: Honors standing; and a grade of C- or above in 3450H (450H); and</td>
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<td>GPA 3.4 or above.</td>
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<td>Not open to students with credit for 536.</td>
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<tr>
<td>4552</td>
<td>Modern Spanish Literature</td>
<td>U 3</td>
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<td></td>
<td>Introductory critical study of major literary works from the 18th to the</td>
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<td>present to Spain.</td>
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<td>Prereq: A grade of C- or above in 3450 (450) or 4350H (450H).</td>
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<tr>
<td>4552H</td>
<td>Modern Spanish Literature</td>
<td>U 3</td>
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<tr>
<td></td>
<td>Introductory critical study of major literary works from the 18th century</td>
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<td>to the present in Spain.</td>
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<td>Prereq: Honors standing; and a grade of C- or above in 4350H (450H); and</td>
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<td>GPA 3.4 or above.</td>
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<td>Not open to students with credit for 552 or 552H.</td>
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<tr>
<td>4555</td>
<td>Indigenous, Colonial, &amp; National Literatures and Cultures of Spanish America</td>
<td>U 3</td>
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<td>Introductory study of issues and processes in the formation of indigenous,</td>
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<td>colonial, and national expression through 19th century regional discourses.</td>
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<td>Prereq: A grade of C- or above in 3450 (450) or 3420H (450H).</td>
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<tr>
<td>4555E</td>
<td>Indigenous, Colonial &amp; National Literatures and Cultures of Spanish America</td>
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<td>Introductory study of issues and processes in the formation of indigenous,</td>
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<td>colonial, and national expression through 19th century regional discourses.</td>
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<td>Prereq: Honors standing; and a grade of C- or above in 3450H; and GPA 3.4 or</td>
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<td>above.</td>
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<td>Not open to students with credit for 555E.</td>
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<tr>
<td>4556</td>
<td>Modern Spanish American Literature</td>
<td>U 3</td>
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<tr>
<td></td>
<td>Introductory study of issues and processes in Spanish American writing from</td>
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<td>Modernism through the present.</td>
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<td>Prereq: A grade of C- or above in 3450 (450) or 3450H (450H).</td>
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<td>4557.20</td>
<td>Introduction to Other Latino Literature in the U.S.</td>
<td>U 3</td>
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<td></td>
<td>Study of works by “other Latino” writers, that is, authors from less</td>
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<td>represented groups within the larger Latino population in the U.S. The “other</td>
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<td>Latino” writers are part of the new migratory flows between the U.S. and</td>
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<td>Latin America. Their literary production complements the Latino experience</td>
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<td>represented by Chicanos, Puerto-Rican, and Cuban-American authors.</td>
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<td>Prereq: 3450 (450) or 3450H (450H).</td>
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<td>4558</td>
<td>Introduction to Spanish American Culture</td>
<td>U 3</td>
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<tr>
<td></td>
<td>Major elements in the culture of the peoples of Spanish America.</td>
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<td>Prereq: A grade of C- or above in 3450 (450) or 3450H (450H).</td>
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<tr>
<td>4559H</td>
<td>Introduction to Spanish American Culture</td>
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<td>Major elements in the culture of the peoples of Spanish America.</td>
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<td>Prereq: Honors standing; and a grade of C- or above in 3450H; and GPA 3.4 or</td>
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<td>above.</td>
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<td>Not open to students with credit for 560 or 560H.</td>
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<tr>
<td>4561</td>
<td>Introduction to the Culture of Spain</td>
<td>U 3</td>
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<tr>
<td></td>
<td>Major developments in the culture of Spain.</td>
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<td>Prereq: A grade of C- or above in 3450 (450) or 3450H (450H).</td>
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<td>4564</td>
<td>Spanish Culture During Francois</td>
<td>U 3</td>
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<td>Panoramic view of the culture of Spain during the dictatorship of Franco.</td>
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<td>Use of literary and filmic productions as representations of the historical,</td>
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<td>political &amp; economic experiences Spain lived during those years.</td>
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<tr>
<td>4565H</td>
<td>Latin American Indigenous Literatures and Cultures</td>
<td>U 3</td>
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<td>Introduction to continuities and transformations that link Latin American</td>
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<td>colonial indigenous texts with contemporary cultural expression.</td>
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<td>Prereq: Honors standing; and a grade of C- or above in 3450H; and GPA 3.4 or</td>
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<td>Not open to students with credit for 560H.</td>
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<td>4567H</td>
<td>Spanish Mosaic: Catalonia, Basque Country, Galicia and Andalusia</td>
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<td></td>
<td>Explores the fragmentation and renegotiation of Spanish cultural and political</td>
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<td>identity in tension with its peripheral &quot;nations&quot;: Catalonia, Basque Country,</td>
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<td>Galicia, Andalusia.</td>
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<td>Prereq: A grade of C- or above in 3450 or 3450H.</td>
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<td>4570</td>
<td>Latin Soundscapes: Musical Cultures of Latin America</td>
<td>U 3</td>
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<tr>
<td></td>
<td>Since colonial times, the Latin American region has produced a wealth of</td>
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<td>musical genres, styles, hybrids, &amp; fusions that allows for exploration of</td>
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<td>relevant social, cultural, economic, and political issues. This course</td>
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<td></td>
<td>surveys the richness, diversity, &amp; representation of Latin American music</td>
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<td>through selection of musical, literary, filmic, &amp; historical texts.</td>
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<td>Prereq: A grade of C- or above in 3450 (450) or 3450H (450H).</td>
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<tr>
<td>4580</td>
<td>Latin American Film</td>
<td>U 3</td>
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<td>Study of Latin American film; special attention is paid to the relationship</td>
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<td>between film and the society in which it is produced.</td>
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<td>Prereq: A grade of C- or above in 3450 (450) or 3450H (450H).</td>
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<td>4582</td>
<td>Latina Cinema: Filmmaking, Production &amp; Consumption</td>
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<td>Explores how films by and about Latinas respond to the U.S. Latinx experience</td>
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<td>Analyzes how representational strategies (in terms of race, sexuality,</td>
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<td>ethnicity, gender, and class) and the deployment of formal devices (such as</td>
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<td>narrative structure, lighting, cinematography, sound, editing, and mise-en-</td>
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<td>scene) give various shapes to Latinx experiences and identities.</td>
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4590H Interdisciplinary Protocols: Identity and National Formation in Latin America: Perspectives from Lit. 
Examines the intersections between history and literature, and exposes students to core discussions in contemporary historical and cultural scholarship. 
Prereq: Honors standing, and a grade of C- or above in 3450H, and GPA 3.4 or above. Not open to students with credit for 590H. FL Admis Cond course. 

4595.01 Special Topics in Foreign Study 
Credit from study abroad for major level courses in Hispanic Linguistics concentration not offered by department but eligible for Spanish major core. Used only to convert 5797 (697) credit to more appropriate content level. 
Prereq: A grade of C- or above in 3450 (450) or 3450H (450H), and permission of departmental study abroad advisor. Repeatable. 

4595.02 Special Topics in Foreign Study 
Credit from study abroad for major level courses in Iberian Literatures & Cultures concentration not offered by department but eligible for Spanish major core. Used only to convert 5697 (697) credit to more appropriate content level. 
Prereq: A grade of C- or above in 3450 (450) or 3450H (450H), and permission of departmental study abroad advisor. Repeatable. 

4595.03 Special Topics in Foreign Study 
Credit from study abroad for major level courses in Latin America Literatures and Cultures concentration not offered by department but eligible for Spanish major core. Arranged only with permission of departmental study abroad advisor. 
Prereq: A grade of C- or above in 3450 (450) or 3450H (450H). Used only to convert 5797 (697) credit to more appropriate content level. Repeatable to a maximum of 60 cr hrs. 

4603 Advanced Spanish Composition 
Analysis of different prose styles and practice in writing fluent Spanish compositions. 
Prereq: A grade of C- or above in 3450 (450) or 3450H (450H). Not open to students with credit for 4613 (613). FL Admis Cond course. 

4606 Advanced Business Spanish 
An in-depth study of the Hispanic economic, social, and cultural environment as it relates to business. 
Prereq: 3403 (403) or 3403H (403H), or permission of instructor. Not open to students with credit for 606. FL Admis Cond course. 

4610 Contrastive Structures of Spanish and English 
Phonetics, phonemics, morphology, and syntax of Spanish contrasted with English. 
Prereq: A grade of C- or above in 4430 (450) or 4430H (450H). Not open to students with credit for 610. FL Admis Cond course. 

4695S Translation and Interpreting in the Latino Community 
This course introduces students to foundational concepts in translation and interpretation in community contexts among Latinos in the US. The course analyzes the theoretical, ethical, and sociological dimensions of community translation and interpreting. 
Prereq: 4430, or permission of instructor. 

4998 Undergraduate Research in Spanish 
Undergraduate research or directed experience; non-thesis. 
Prereq: A grade of C- or above in 3450 (450). Repeatable. This course is graded S/U. 

4998H Honors Research 
Honors research. 
Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 59 cr hrs or 16 completions. This course is graded S/U. 

4999 Research for Thesis 
Undergraduate research for Thesis. 
Prereq: Permission of instructor. Repeatable to a maximum of 59 cr hrs or 16 completions. This course is graded S/U. 

4999H Honors Research 
An individual program of research culminating in an Honors thesis and oral defense. 
Prereq: Honors standing; and a grade of C- or above in 3450H (450H); and GPA 3.4 or above. Repeatable. This course is graded S/U. FL Admis Cond course. 

5201 Spanish in the Health Professions 
Introduction to Spanish discourse about health and wellness within the cultural contexts of the US and Latin America. Highlights the complex relationships between language, culture, and power in discourse on health and wellness. 
Prereq: 3403, or Grad standing and permission of instructor. 

5202 Spanish in the Health Professions II 
This course introduces students to the practice of interviewing for health and human services in Spanish. The course analyzes the theoretical, ethical, and sociological dimensions of medical and motivational interviewing in the context of the Spanish-speaking population in the United States. 
Prereq: 5201, or permission of instructor. 

5398 US Latino Languages and Communities 
We discuss the diversity of Latino experiences and the central role of language in the development of a “Latino” identity, as well as its role in local understandings of ethnicity, gender, and social class. Theoretical concepts include language ideologies, identity, and critical approaches to race and ethnicity. Previous coursework in Latin Studies and/or Sociolinguistics is desirable. 
Prereq: 5201 or 4430H, or equiv, or Grad standing, or permission of instructor. 

5461 Latino Urbanism and the Reinvention of the American City 
Interdisciplinary course that examines a new trend of urbanism based on the urban experiences of Latinos and the study of this group’s social, economic, and cultural impact on cities across the US. Taught in English. Team-taught course cross-listed in Spanish & City and Regional Planning. 
Prereq: Second-level writing course, Jr or Sr standing; or Grad standing; or permission of instructor. Not open to students with credit for 4461 or CRPlan 4461 or 5461. Cross-listed in CRPlan. 

5501.10 Amerindian Languages & Cultures (Study Abroad) 
Amerindian languages and cultures (e.g., Guarani, Aymara) offered through study abroad programs. May count toward US Spanish or Portuguese major/minor by petition. Graduate students must consult with their Program Advisor and complete any documentation required by their program of enrollment. Course may be taught in Target Language, Spanish or English. 
Prereq: Permission of department. Repeatable to a maximum of 9 cr hrs or 4 completions. 

5501.20 Amerindian Languages & Cultures (Domestic) 
Amerindian languages and cultures (e.g., Guarani, Aymara) offered through OSU or other domestic institution. May count toward the US Spanish or Portuguese major/minor by petition. Graduate students must consult with their Program Advisor and complete any documentation required by their program of enrollment. Course may be taught in Target Language, Spanish or English. 
Prereq: Permission of department. Repeatable to a maximum of 9 cr hrs or 4 completions. 

5620 Gender and Power in the Americas 
Taught in Spanish, the course focuses on the interpretation of gender and power in hemispheric Latin American and U.S. Latina/o cultural production. The seminar promotes inquiry in the areas of gender and power, performance studies, and the problems and prospects of Latinas as peoples shaped by the legacies of colonial, neoliberal, and patriarchal social orderings. 
Prereq: 3450. 

5630 Seminar in Hispanic Linguistics 
Intensive study of major topic in Hispanic Linguistics. Topics vary: e.g., the Spanish pronoun system, American Spanish dialectology, Spanish orthography. Required for students completing the Hispanic Linguistics track of the Spanish Major. 
Prereq: A grade of C- or above in 4430 or 4430H, plus any two of: 4532, 4534, 4534E, 4536, 4537, 4538, 4565.04, 4610, 46895, 5389, or Portgse 5611. Repeatable to a maximum of 9 cr hrs. 

5630E Seminar in Hispanic Linguistics - Embedded Honors 
Intensive study of major topic in Hispanic Linguistics. Topics vary: e.g., the Spanish pronoun system, American Spanish dialectology, Spanish orthography. Fulfills seminar requirement for students completing the Hispanic Linguistics Concentration of the Honors Spanish Major. 
Prereq: A grade of C- or above in 4430 or 4430H, plus any two of: 4532, 4534, 4534E, 4536, 4537, 4538, 4565.04, 4610, 46895, 5389, or Portgse 5611. Repeatable to a maximum of 9 cr hrs. 

5640 Globalization and Latin America: Multi-disciplinary Approaches 
Explores current debates on globalization in Latin America and recent and interrelated transformations in the economies, politics, and cultures of the region. 
Prereq: A grade of C- or above in 3450 (450) or 3450H (450H), or Grad standing. Not open to students that have credit for 640 or IntStds 640. Cross-listed in IntStds. 

5650 Seminar in Iberian Literatures and Cultures 
Intensive study of a major theme, author, literary, or cultural problem related to the Iberian Peninsula. Required for students completing the Iberian Concentration of the Spanish major. 
Prereq: A grade of C- or above in 3450 or 3450H, plus any two of: 4551, 4551E, 4552, 4552H, 4561, 4561H, 4564, 4567, 4567H, 4568, 4581, or 4595.02. Repeatable to a maximum of 9 cr hrs. 

5650E Seminar in Iberian Literatures and Cultures - Embedded Honors 
Intensive study of a major theme, author, literary, or cultural problem related to the Iberian Peninsula. Required for students completing the Iberian Concentration of the Honors Spanish major. 
Prereq: A grade of C- or above in 3450 or 3450H, plus any two of: 4551, 4551E, 4552, 4552H, 4561, 4561H, 4564, 4567, 4567H, 4568, 4581, or 4595.02. Repeatable to a maximum of 9 cr hrs. 

5660 Seminar in Latin American Literatures and Cultures 
Intensive study of a major theme, author, literary or cultural problem related to Latin America. 
Prereq: A grade of C- or above in 3450 or 3450H, plus any two of: 4515, 4516, 4555, 4556, 4557, 4570, 4590, 4590H, 4590H, 4570, 4580, 4589, 4595.03, 5461, 5620, or 5640. Repeatable to a maximum of 9 cr hrs.
Seminar in Latin American Literatures and Cultures

Intensive study of a major theme, author, literary or cultural problem related to Latin America. Required for students completing the Latin American Concentration of the Spanish major. Only one course taught in English at the 4000 or 5000-level may count toward the Spanish Major program.

Prereq: A grade of C- or above in 3450 or 3450H, plus any two of: 4515, 4516, 4555, 4555E, 4556, 4557, 4557.20, 4557.30, 4557.40, 4569H, 4570, 4580, 4582, 4590H, 4595.03, 5461, 5620, or 5840. Repeatable to a maximum of 9 cr hrs.

Seminar in LatinX Literatures and Cultures

Intensive study of a major theme, author, literary, or cultural problem related to LatinX languages, literatures and cultures. Required for students completing the LatinX track of the Spanish major.

Prereq: A grade of C- or above in 3450 or 3450H, plus any two of: 4575.10, 4575.20, 4575.01, 4595.03, 4461, 4570, 4582, 4678S, 5201, 5389, 5620; Anthro 3419, 3416; CompStd 3360, 3689, 4804, 4805; English 4578, 4588; HCS 3380, WGSS 4375, 4560, 4404. Repeatable to a maximum of 9 cr hrs.

Seminar in LatinX Literatures and Cultures

Intensive study of a major theme, author, literary, or cultural problem related to LatinX languages, literatures, and cultures. Required for students completing the LatinX track of the Spanish major.

Prereq: Honors standing or permission of instructor, and a grade of C- or above in 3450 or 3450H, plus any two of: Spanish 4575.10, 4575.20, 4595.01, 4595.03, 4461, 4570, 4582, 4689S, 5201, 5389, 5620; Anthro 3419, 3416; CompStd 3360, 3689, 4804, 4805; English 4578, 4588; HCS 3380; WGSS 4375, 4560, 4404. Repeatable to a maximum of 9 cr hrs.

Spanish in Ohio: An Experiential Course

Interaction with Hispanic and LatinX community organization representatives, educators and business leaders in Ohio; intensive & extensive practice with Spanish as spoken by native and heritage speakers from the U.S. & abroad. Fulfills the Experiential Component of the Spanish Major.

Prereq: 3450 or 3450H.

Study at a Foreign Institution

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Prereq: Not open to students with credit for 697. Repeatable. This course is progress graded.

Spanish Phonetics for Teachers

Comprehensive study of the Spanish sound system, as well as preparation for, and practice in, the teaching of pronunciation. The course covers the principles of orthography, articulatory descriptions of sounds, phonetic transcription, phonological analysis, contrasts with English, issues in L2 phonological research, and best practices in the teaching of Spanish pronunciation to English speakers.

Prereq: Grad standing.

Introduction to Literary and Cultural Analysis

Introduction to literary and cultural theory and methods of analysis; emphasis on the study and articulation of critical concepts.

Prereq: Grad standing.

Introduction to Latino Studies

Introduces graduate students to the broad themes, concepts, and questions raised in the interdisciplinary field of Latin/latino studies.

Prereq: Grad standing, or permission of instructor and approved petition to the Graduate School. Not open to students with credit for 705; ArtsSci 705, or CompStd 6425 (705). Cross-listed in CompStd 6425.

MA Exam Preparation

Independent study to prepare for an upcoming MA examination.

Prereq: Permission of instructor. Repeatable. This course is progress graded (S/U).

Spanish Syntax and Semantics

Introduction to structural and semantic characteristics of Spanish in light of recent theoretical frameworks in linguistics.

Prereq: Grad standing, or permission of instructor. Not open to students with credit for 732.

Spanish Phonology and Morphology

Introduction to phonological and morphological characteristics of Spanish in light of recent theoretical frameworks in linguistics.

Prereq: Grad standing, or permission of instructor. Not open to students with credit for 734.

History of the Spanish Language

Basic concepts of historical linguistics: the major factors of change in the history of the Spanish language from Latin to the present.

Prereq: Grad standing, or permission of instructor. Not open to students with credit for 736.

Spanish Sociolinguistics

Introduction to the analysis of linguistic and social factors which contribute to variation in modern Spanish.

Prereq: Grad standing, or permission of instructor. Not open to students with credit for 738.

Mapping Medieval and Renaissance Iberian Literatures

Study of significant socio-cultural moments, issues, problematics, and concepts in Iberian literatures and cultures from the medieval period to the 18th century.

Prereq: Grad standing, or permission of instructor.

Mapping Modern and Contemporary Iberian Literatures and Cultures

Study of significant socio-cultural moments, issues, problematics, and concepts in Iberian literatures and cultures from the 19th century to the contemporary period.

Prereq: Grad standing, or permission of instructor.

Mapping Modern and Contemporary Latin American Literatures and Cultures

Study of significant socio-cultural moments, issues, problematics, and concepts in Latin American literatures and cultures from the late 19th century to the contemporary period.

Prereq: Grad standing, or permission of instructor. Not open to students with credit for 760.

Studies in Medieval Iberia

In-depth study of a major topic or problem in Medieval Iberia.

Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 12 cr hrs.

Studies in Renaissance and Baroque Iberia

In-depth study of a major topic or problem in 16th- and 17th-century Iberian literatures and cultures.

Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 12 cr hrs.

Studies in Contemporary Iberian Literatures and Cultures

In-depth study of a major topic or problem in 20th- and 21st-century Iberian literatures and cultures.

Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 12 cr hrs.

Studies in Indigenous and Colonial Latin American Literatures and Cultures

In-depth study of a major topic or problem in indigenous and colonial Latin American literatures and cultures.

Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 12 cr hrs.

Studies in Independence and 19th-Century Latin American Literatures and Cultures

In-depth study of a major topic or problem in Latin American literatures and cultures of the independence period and the 19th century.

Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 12 cr hrs.

Studies in Contemporary Latin American Literatures and Cultures

In-depth study of a major topic or problem in contemporary Latin American literatures and cultures.

Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 12 cr hrs.

Comparative Topics in Luso-Hispanic Literature and Culture

In-depth study of a major topic comparing the literatures and cultures of the Portuguese- and Spanish-speaking worlds.

Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 12 cr hrs.

Topics in Latin American Cultures

Analysis of Latin American culture through the study of selected topics in literature, film, and the arts; topics vary.

Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 9 cr hrs.

Andean Music Ensemble

In this course students learn to play and perform music from Bolivia, Peru, Ecuador, Chile, Colombia and Argentina. The course explores various musical genres within the Andean region. Students study techniques and methods for playing Andean instruments and learn to sing in Spanish, Quechua and Aymara.

Repeatable to a maximum of 10 cr hrs or 10 completions. Cross-listed in Music.

Latin American Film

Study of Latin American film focusing on historical periods, dominant genres, distinguished directors, and relation of film to larger social, cultural and political dynamics.

Prereq: Grad standing, or permission of instructor. Not open to students with credit for 780.

College Teaching of Spanish and Portuguese

Methods and techniques for teaching Spanish and Portuguese language at the college level. Three-week intensive workshop prior to beginning of semester followed by a 2-hr seminar during semester. Course does not count towards degree.

Prereq: Teaching associate in Spanish and Portuguese, or permission of instructor. Not open to students with credit for 801 or 6801.

Interdepartmental Studies

Two or more departments present colloquia on subjects of mutual interest; topics to be announced.

Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 9 cr hrs or 9 completions.
432 Spanish

8193.01 Individual Studies G 1 - 9
Independent Study of a focused problem or topic in the various fields of Iberian and Latin American literatures and cultures and Hispanic Linguistics.
Prereq: Permission of Instructor. Repeatable. This course is progress graded (S/U).

8193.02 PhD Exam Preparation G 1 - 9
Independent study to prepare for an upcoming PhD examination.
Prereq: Permission of instructor. Repeatable. This course is graded S/U.

8194 Group Studies G 1 - 9
Group study of a focused problem and topic in the various fields of Iberian and Latin American literatures and cultures and Hispanic Linguistics.
Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs or 18 completions. This course is graded S/U.

8320 Studies in Synchronic Spanish Syntax, Semantics and Pragmatics G 3
Investigation of theoretical concepts in syntax, semantics, and pragmatics and how they have been applied to the analysis of the Spanish language.
Prereq: 7320 (722), or permission of instructor. Repeatable to a maximum of 12 cr hrs.

8330 Studies in Synchronic Spanish Linguistics G 3
Investigation of selected topics in synchronic Spanish linguistics (formal problems in Spanish phonology, morphology, syntax, semantics, and lexicology). Individual topics not repeatable.
Prereq: 7320 (722) or 7340 (734) (depending on topic), or permission of instructor. Repeatable to a maximum of 12 cr hrs.

8340 Studies in Synchronic Spanish Phonetics, Phonology and Morphology G 3
Investigation of theoretical concepts in phonetics, phonology, and morphology and how they have been applied to the analysis of the Spanish language.
Prereq: 7340 (734), or permission of instructor. Repeatable to a maximum of 12 cr hrs.

8370 Studies in Spanish Psycholinguistics G 3
Studies in child language acquisition, second language acquisition and child and adult language disorders in Spanish-speaking populations.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 12 cr hrs.

8380 Studies in Spanish Sociolinguistics G 3
Study of selected topics in Spanish sociolinguistics, for example: syntactic variation, discourse analysis.
Prereq: 7380 (738), or permission of instructor. Repeatable to a maximum of 12 cr hrs.

8390 Seminar in Spanish Linguistics G 3
Collaborative investigation of specific problems in Spanish linguistics (synchronic and historical, formal, and applied topics). Individual topics not repeatable.
Prereq: 8330 (833) or 8360 (836), or permission of instructor. Repeatable to a maximum of 12 cr hrs.

8510 Seminar in Medieval Iberia G 3
Detailed exploration of advanced issues in Medieval Iberia.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 18 cr hrs.

8530 Seminar in Modern Iberian Literatures and Cultures G 3
Detailed exploration of advanced issues in Iberian literatures and cultures of the 18th to 20th centuries.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 18 cr hrs.

8540 Seminar in Contemporary Iberian Literatures and Cultures G 3
Detailed exploration of advanced issues in 20th- and 21st-century Iberian literatures and cultures.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 18 cr hrs.

8550 Seminar in Indigenous and Colonial Latin American G 3
Detailed exploration of advanced issues in indigenous and colonial Latin American literatures and cultures.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 18 cr hrs.

8560 Seminar in Independence and 19th-Century Latin American Literatures and Cultures G 3
Detailed exploration of advanced issues in Latin American literatures and cultures of the independence period and the 19th century.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 18 cr hrs.

8570 Seminar in Modern Latin American Literatures and Cultures G 3
Detailed exploration of advanced issues in Latin American literatures and cultures of the modern period from approximately 1880 to 1950.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 18 cr hrs.

8595 Seminar in Comparative Luso-Hispanic Literature and Culture G 3
Detailed exploration of advanced issues comparing the literatures and cultures of the Portuguese- and Spanish-speaking worlds.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 18 cr hrs.

8650 Seminar in Latin American Cultures G 3
Intensive exploration of a cultural period, topic, or problem. Topic varies.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 12 cr hrs.

8780 Research Methods and Design G 3
Introduction to research methods and design in Iberian and Latin American literatures and cultures. Required course for Literature and Culture PhD programs.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 803.

8800 Seminar in Literary and Cultural Theory G 3
Intensive study of special topics in literary and/or cultural theory with attention to their relationship to Iberian and Latin American literatures and cultures.
Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 12 cr hrs.

8890 Publication Workshop G 3
Revision and expansion of a seminar paper for potential publication in an academic journal, based on feedback from instructor and classmates.
This course is progress graded (S/U).

8893 Hispanic Linguistics Colloquium G 1
Forum for presentation of research in Hispanic linguistics; introduction to professional issues in workshop format.
Repeatable to a maximum of 15 cr hrs. This course is progress graded (S/U).

8894 Literatures and Cultures Colloquium G 1
Forum for presentation of research in Iberian and Latin American literatures and cultures; introduction to professional issues in workshop format.
Repeatable to a maximum of 15 cr hrs. This course is progress graded (S/U).

8998 Research for Dissertation (Pre-candidacy) G 1 - 12
Research for dissertation (pre-candidacy).
Prereq: Pre-candidacy status, and permission of faculty advisor. Repeatable to a maximum of 64 cr hrs or 15 completions. This course is graded S/U.

8999 Research for Dissertation (Post-candidacy) G 1 - 12
Research for dissertation (Post-candidacy).
Prereq: Post-candidacy status, and permission of faculty advisor. Repeatable to a maximum of 99 cr hrs or 16 completions. This course is progress graded (S/U).

Speech and Hearing Science

2194 Group Studies U 1 - 3
Designed to give groups of students an opportunity to pursue special studies not otherwise offered.
Prereq: Permission of instructor. Not open to students with 5 cr hrs or 294. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

2230 Introduction to Communication and Its Disorders U 3
Survey of the topics, methodologies, and applications of speech and hearing science in normal and aberrant communication; lectures and readings.
Prereq: Not open to students with credit for 230.

3200 Principles of Phonetics U 3
Provides articulatory and acoustic descriptions of speech sounds and a comparative study of phonetic transcription systems.
Prereq: Not open to students with credit for 320.

3330 Language Acquisition U 3
Introduction to language acquisition in normal children. GE soc sci indivs and groups course.

3330H Language Acquisition U 3
Introduction to language acquisition in normal children. GE soc sci indivs and groups course.

3340 Introduction to the Art and Science of Sound U 3
Designed to teach the basic principles of acoustics to undergraduate students in the Arts and Sciences who have had little previous experience with math or biological and physical sciences. The student should gain an appreciation of the concepts underlying the generation, transmission and measurement of sound waves traveling through air.
Prereq: Not open to students with credit for 340.

3350 Speech-Language Communication Across the Life Span: Issues and Problems in Our Communities U 3
Exploration of the development of communication skills throughout the life span and the consequences of communication disorders for individuals, their families, and their communities.
Prereq: Not open to students with credit for 350. GE soc sci indivs and groups course.

3360 Observation in Speech-Language Pathology and Audiology U 3
Observation in appraisal and treatment of communication disorders.
Prereq: 2230 (230). Not open to students with credit for 360. This course is graded S/U.

Service Learning in Adult Neurogenics for Speech-Language Pathology
This course involves advancing students' knowledge of disorders resulting from acquired brain injury in adult populations. Students will gain knowledge related to understanding, developing, and utilizing tools to support communication. Through a mutually beneficial community service activity, students will also gain appreciation on the impact a communication disability has on quality of life.
Prereq: 2230. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

Anatomy, Physiology and Science of Speech
Anatomy and physiology of the structures involved in speech production and the acoustic characteristics of speech sounds.
Prereq: 3320 (320), or equiv course in Phonetics, and Biology 101, 102, 113, 114, 115H, or 116H. Not open to students with credit for 420.

Introduction to Language Science and Language Disorders
Foundational understanding of normal/disordered language development or language altered by neurological disorders is the structure of language and associated cognitive processes.
Prereq: 2230 (230) or 3330 (330) or equiv, or permission of instructor.

Anatomy, Physiology, and Science of Hearing
The anatomical properties and physiological processes of the system of hearing and balance in humans and the stimulus processing capabilities of the normal auditory system.
Prereq: 3340 (340) or equiv, or Biology 1101 (101), 1102 (102), 1113 (113), or 1114 (114); or permission of instructor. Not open to students with credit for 440.

Disability Studies in Context
The history, nature, meaning, and consequences of disability from the differing viewpoints of disability studies.
Prereq: Not open to students with credit for 510.

Introduction to Clinical Methods in Speech-Language Pathology
Etiology, appraisal, and management of disorders of speech and language in children and adults.
Prereq: 3320, 3330, and 4420, or equiv, or permission of instructor.

Introduction to Autism
This course provides an overview of the identification and diagnosis of autism, scientific perspectives on etiology, and the neurobiological underpinnings of autism, as well as treatment components of autism.

Introduction to Audiology
The nature, causes, identification, and rehabilitative treatment of persons with hearing disorders.
Prereq: 4440 (440), or equiv. Not open to students with credit for 540.

Neuroscience of Speech, Language, and Music
Music and language are integral and universal components of human nature, as proved by their ubiquity across all cultures. This course is designed to offer a general overview of the neuroscience of speech, language, and music, a glimpse of research in this emerging discipline, and a sample of the current and possible applications for the health and well-being of healthy and clinical populations.

Baccalaureate Research and Thesis
A program of directed independent study for the academically strong student with an interest in research and the desire to complete a thesis.
Prereq: GPA 3.4 or above in SphHrng, and Jr or Sr standing, and permission of the instructor. Not open to students with maximum or hrs in 499H or 763H. Repeatable to a maximum of 10 cr hrs or 5 completions. This course is graded S/U.

Honors Research and Thesis
A program of independent study for the student with special aptitudes, individual conferences and reports, leading to the completion of the Honors thesis.
Prereq: SphHrng GPA 3.4 or above, Sr. standing, permission of the instructor and permission of the ASC Honors Committee. Not open to students with 15 or more hrs in 763H. Repeatable to a maximum of 10 or 5 completions. This course is graded S/U.

Individual Studies
Conference, library, and laboratory work.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

Multicultural Aspects of Communication
Examination of normal communicative behavior, including development, and the assessment and management of speech-language-hearing disorders of culturally and linguistically diverse populations.
Prereq: 3330, Ling 3601, or 3602, or equiv, or permission of instructor.

Introduction to Sign Language
Introductory course in manual sign language systems.
Prereq: Not open to students with credit for 714.

Introduction to Aural Rehabilitation I
Assessment and management of communication disorders associated with hearing loss.
Prereq: 4540 (540), or permission of instructor. Not open to students with credit for 734.

Voice Disorders and Cleft Palate
Advanced studies of anatomy and physiology of the vocal tract with clinical emphasis on assessment and treatment of voice disorders, laryngectomy, and cleft lip and/or palate.
Prereq: Grad standing in SphHrng or permission of instructor. Not open to students with credit for 741.

Neurology of the Speech and Hearing Mechanism
Introduction to neuroanatomy and neuroscience for undergraduates in the Speech and Hearing Science major or those planning to apply for graduate school in speech-language pathology or audiology. The course includes discussion of the sensory and motor nervous systems at the cellular and system levels.
Prereq: Biology 1101 (101) or above. Not open to students with credit for 765.

Research Methods I
Introduction to research design and data analysis for the hearing and speech sciences.
Prereq: Grad standing or permission of instructor. Not open to students with credit for 785.

Augmentative and Alternative Communication for the Multidisciplinary Professional
This course is designed to provide students with knowledge of augmentative communication/augmentative & alternative communication (AAC). The course will explore the various types of AAC, the procurement process, funding of AAC, and intervention for people with complex communication needs secondary to a variety of diagnoses.
Prereq: HthRhSc 5100. Not open to students with credit for HthRhSc 5860. Cross-listed in HthRhSc 5891.

Proseminar in Cognitive Science
Provides an in-depth examination of cognitive science from an interdisciplinary perspective.
Prereq: Permission of instructor. Repeatable to a maximum of 4 cr hrs. Cross-listed in CSE, Ling, Philos, and Psych.

Professional Issues I
Consideration is given to the audiological scope of practice, health privacy issues, and the role of professional organizations.
Prereq: Requires acceptance in AuD program. First year AuD students only. Not open to students with credit for 643.01. This course is graded S/U.

The SLPs Role Working with Individuals with Autism
This course is designed to provide students with knowledge in the area of autism by integrating research results with clinical practice. Implications for assessment and treatment for individuals with autism will be discussed.
Prereq: Grad standing, and coursework in language development, or permission of instructor.

Clinical and Educational Methods in the Schools
Models, strategies, methodologies, and curriculum involved in planning, implementing, and evaluating team-based instruction for students with communication, language, and learning disabilities.
Prereq: Grad standing in SphHrng; or permission of instructor. Not open to students with credit for 670.

Field Experience in the Schools
Major practicum experience for students pursuing certification to practice speech/language pathology in schools.
Prereq: Grad standing in SphHrng, and permission of instructor. Repeatable to a maximum of 8 cr hrs or 2 completions. This course is graded S/U.

Group Studies
Designed to give groups of students an opportunity to pursue advanced studies not otherwise offered.
Prereq: Permission of instructor. Repeatable to a maximum of 7 cr hrs or 7 completions. This course is graded S/U.

Professional Issues II
Discussion centers on ethical practices and licensure issues in audiology. Issues related to counseling, voluntary credentials, and professional advocacy are considered.
Prereq: Requires acceptance in AuD program. Not open to students with credit for 643.02. This course is graded S/U.

Audiologic Assessment I
Detailed treatment of the theoretical and practical aspects of standard audiologic assessment.
Prereq: Not open to students with credit for 705.

Audiologic Assessment II
Detailed treatment of the theoretical and practical aspects of the physiologic evaluation of the auditory system using immittance and otoacoustic emissions.
Prereq: 6705 (705). Not open to students with credit for 706.

Audiologic Assessment III
Study of the techniques involved in the administration and interpretation of electronystagmography, rotation, and posturography assessments.
Prereq: 6706 (706). Not open to students with credit for 750.
434 Speech and Hearing Science

6708 Audiologic Assessment IV G 3
Detailed treatment of the theoretical and practical aspects of electrophysiologic measures, including electrocochleography, auditory brainstem responses, middle latency responses, and cognitive potentials.

6710 Speech Sound Disorders in Children G 3
Approaches to understanding the nature and clinical management, especially assessment and treatment, of speech sound disorders in children and youth.
Prereq: Grad standing in Speech and Hearing Science, or permission of instructor. Not open to students with credit for 710.

6725 Language Acquisition and Early Intervention in Language Delay G 3
Development of language in children with an emphasis on the interaction between the development of language and cognition with implications for delay. The emphasis is on children aged zero to five years.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 725.

6726 Child Language Disorders: Assessment G 3
Assessment and treatment of language disorders in preschool and school-aged children; both norm-referenced and criterion-referenced. The emphasis is on school-aged children.
Prereq: 6725 (725). Not open to students with credit for 726.

6733 Adult Audiologic Rehabilitation G 3
The impact of hearing loss on social, vocational, and psychological well-being. Treatment options and measures of treatment outcome.
Prereq: Not open to students with credit for 733.

6735 Hearing Aids I G 3
The physical and electroacoustic characteristics of hearing aids, including electroacoustic analysis, acoustic of amplification systems, signal processing strategies, and devices used in specialized fittings.
Prereq: 6705 (705). Not open to students with credit for 735.

6740 Fluency: Theory and Treatment G 3
Theories, principles, and procedures for the appraisal and treatment of persons with dysfluencies in speech.
Prereq: Grad standing in SpHrng, or permission of instructor. Not open to students with credit for 740.

6742.01 Clinical Seminar in Speech and Language Disorders I: Fundamentals of Treatment Designs G 3
Lectures, discussions and labs covering the fundamentals of treatment design and case management for Speech-Language Disorders.
Prereq: Grad standing in SpHrng, or permission of instructor. Not open to students with 9 cr hrs of 744. This course is graded S/U.

6742.02 Clinical Methods in Speech Language Disorders: Specialized Topics in Treatment Designs G 3
Lectures, discussions and labs covering methodology for speech sound disorders and oral and written language.
Prereq: Grad standing in SpHrng, or permission of instructor. This course is graded S/U.

6742.03 Clinical Methods in Speech and Language Disorders I: Advanced Topics G 1
SHS 6742.03 is a 1 credit hour course to encompass one hour per week of classroom instruction to supplement clinical practicum placements. This seminar is designed for first year SHS graduate clinicians to gain knowledge in clinical methodology, specific to individual populations/disorders; and the policies and procedures used at The Ohio State University Speech-Language-Hearing Clinic.
Prereq: Grad standing in SpHrng, or permission of instructor. This course is graded S/U.

6743 Clinical Seminar in Speech and Language Disorders I G 1
Lectures, discussions and labs covering the fundamentals of treatment design and case management for Speech-Language Disorders.
This course is graded S/U.

6745 Clinical Seminar in Speech and Language Disorders II G 1
Lectures, discussions and labs covering the fundamentals of treatment design and case management for Speech-Language Disorders.
This course is graded S/U.

6753 Clinical Seminar in Speech and Language Disorders III G 1
Lectures, discussions and labs covering the fundamentals of treatment design and case management for Speech-Language Disorders.
Prereq: 6752. This course is graded S/U.

6754 Clinical Seminar in Speech and Language Disorders IV G 1
Lectures, discussions and labs covering the fundamentals of treatment design and case management for Speech-Language Disorders.
This course is graded S/U.

6755 Clinical Seminar in Speech and Language Disorders V G 2
Lectures, discussions and labs covering the fundamentals of treatment design and case management for Speech-Language Disorders.
Prereq: 6754. This course is graded S/U.

6756 Cognitive Communication Disorders in Adults G 3
Impairments in communication due to neurologically related changes in cognition. Pertinent topics include traumatic brain injury, dementia and right hemisphere disorder.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 762 or 763.

6762 Language Disorders in Adults G 3
Language disorders resulting from neurological pathology in adults.
Prereq: Grad standing, or permission of instructor and approved petition to the Graduate School.

6763 Motor Speech Disorders G 3
Speech disorders resulting from neurological pathology in adults.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 762.

6764 Evaluation and Treatment of Dysphagia in Adults and Children G 3
The role of the speech-language pathologist in assessment and treatment of swallowing disorders in children and adults.
Prereq: 5761 or 760 or equiv, and Grad standing; or permission of instructor. Not open to students with credit for 763.

6765 Acoustics and Instrumentation G 3
Principles underlying the use of electro-acoustic instrumentation in the speech and hearing sciences.
Prereq: Enrollment in Doctor of Audiology program, or Speech and Hearing Science Grad program; or permission of instructor. Not open to students with credit for 766.

6770 Topics in Pediatric Medical Speech-Language Pathology G 2
Introduction to specialty topics related to complex pediatric medical conditions and their relevance to speech-language pathologists in all clinical settings.
Prereq: 6761, 6762, 6763, and 6764.

6771 Counseling in Communication Disorders G 2
This course will introduce counseling skills and considerations for individuals and families of individuals with communication disorders across the lifespan.
Prereq: 6761, 6762, 6763, and 6764. This course is graded S/U.

6775 Anatomy and Physiology of the Auditory System G 4
The structure, function, and stimulus processing capacities of the ear and central auditory pathways as they relate to performance on tests of auditory function in normal and impaired listeners.
Prereq: Not open to students with credit for 775.

6786 Statistics in Speech and Hearing Science G 3
Introduction to descriptive and inferential statistics as they are utilized in speech and hearing science.

6843 Practicum in Audiology G 3
Students are placed in local audiology clinics to put into practice skills learned in the classroom.
Prereq: Successful completion of AuD qualifying examination. Repeatable to a maximum of 30 cr hrs or 10 completions. This course is graded S/U.

6844 Practicum in Communication Disorders G 1 - 2
Practicum with children and adults having speech, language, or hearing problems.
Prereq: Grad standing in Speech and Hearing Science. Repeatable to a maximum of 14 cr hrs or 9 completions. This course is graded S/U.

6850 Advanced Hearing Science G 4
This course is designed to provide beginning graduate students with an understanding of the measurement of stimuli and responses commonly used in clinical and experimental hearing testing.
Prereq: Grad standing; or permission of instructor, and approved petition to the Graduate School. Not open to students with credit for 6768 or 8586.

6858 Introduction to Auditory Neuroscience G 3
Theoretical concepts and psychophysical data relative to hearing and related laboratory experiments.
Prereq: Not open to students with credit for 858 or 8586.

6860 Augmentative Communication G 3
This lecture course is designed to provide students with knowledge in the areas of augmentative communication/augmentative & alternative communication (AAC). The course will explore the assessment and management of people requiring augmentative communication secondary to a variety of diagnoses.
Prereq: 6725, Grad standing, or permission of instructor.

6990 Capstone Experience in Speech-Language Pathology G 1
This course provides students with an opportunity to consolidate their clinical and theoretical education by applying the principles of evidence-based practice to a clinical case or topic within their specialization.
Prereq: 5765. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.
7143  Clinical Seminar in Hearing Disorders: Hearing Aid Applications  G  1
Readings and discussion of topics pertinent to the assessment and treatment of hearing disorders.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 743. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

7193  Directed Doctoral Studies  G  1 - 6
Directed, individualized areas of study for doctoral students in either the laboratory or clinical research tracks; conference, library, clinic and/or laboratory involvement.
Prereq: Doctoral standing in SphHrng, or permission of instructor. Repeatable to a maximum of 30 cr hrs or 20 completions. This course is graded S/U.

7243  Clinical Seminar in Hearing Disorders: Ethics & Evidence Based Practice  G  1
Readings and discussion of topics pertinent to the assessment and treatment of hearing disorders.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 743. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

7343  Clinical Seminar in Hearing Disorders: Counseling and Report Writing  G  1
Readings and discussion of topics pertinent to the assessment and treatment of hearing disorders.
Prereq: Grad standing; or permission of instructor. Repeatable to a maximum of 2 cr hrs or 2 completions. This course is graded S/U. Not open to students with credit for 743.

7717  Interdisciplinary Perspective on Developmental Disabilities  G  3
Provides an introduction to the psychosocial, medical, and educational implications of developmental disabilities.
Prereq: Permission of Instructor. Not open to students with credit for 717.01 or 717.03. Cross-listed in HHRsSc, EduSc, SocWork, Nursing, and Psych.

7718  Interdisciplinary Perspective on Autism Spectrum Disorders  G  3
Teaches the analytical skills necessary to comprehend and formulate an interdisciplinary framework relating to major scientific and theoretical perspectives in autism spectrum disorders.
Prereq: Permission of Instructor. Not open to students with credit for 717.01 and 717.02. Cross-listed in HHRsSc, EduSc, SocWork, Nursing, and Psych.

7742  Advanced Clinical Seminar in Speech and Language Disorders  G  1
Readings and discussion of topics pertinent to the assessment and treatment of speech and language disorders and to preparation for the professional life in Speech-Language Pathology.
Prereq: 6751, 6752, 6753, and 6754; and Grad standing in SphHrng. Repeatable to a maximum of 5 cr hrs. This course is graded S/U.

7805  Pediatric Audiology I  G  3
Etiology and assessment of hearing loss in children.
Prereq: 6707 or 707. Not open to students with credit for 805.

7806  Adult Hearing Disorders  G  3
The nature, diagnosis, and treatment recommendations of adult hearing disorders.
Prereq: 7505, 7506, 7607, or equiv. Not open to students with credit for 806.

7807  Pediatric Audiology II  G  4
Prereq: 6735, 7805, 7835. Not open to students with credit for 807.

7820  Acoustic Phonetics  G  3
An introduction to the acoustic characteristics of human speech sounds, the acoustic theory of speech production, and spectrographic analysis.
Prereq: Grad standing in Speech and Hearing Science, or permission of instructor. Not open to students with credit for 820.

7825  Speech Perception in the Normal and Impaired Ear  G  3
This course is a graduate seminar-format course in speech and hearing science. We will discuss the auditory processing of speech sounds and examine the ramifications of hearing loss and cochlear implantation on this processing.
Prereq: Grad standing in SphHrng, or permission of instructor. Not open to students with credit for 820.

7835  Hearing Aids II  G  3
The selection and fitting of amplification devices and the verification of patient outcomes.
Prereq: 6735. Not open to students with credit for 835.

7843  Advanced Practicum in Audiology  G  3
Students are placed in local audiology clinics, medical practices, and medical centers to put into practice skills learned in the classroom.
Prereq: Satisfactory completion of second year of AuD program. Repeatable to a maximum of 6 cr hrs or 2 completions. This course is graded S/U.

7844  Advanced Practicum in Communication Disorders  G  1 - 4
Advanced practicum with children and adults who have speech, language, or hearing problems.
Prereq: Grad standing in SphHrng. Repeatable to a maximum of 20 cr hrs or 5 completions. This course is graded S/U.

7891  Clinical Seminar in Hearing Disorders: Resumes & Interviewing  G  1
Readings and discussion of topics pertinent to the assessment and treatment of hearing disorders with particular emphasis on preparing for professional practice.
Prereq: Grad standing; or permission of instructor. This course is graded S/U. Not open to students with credit for 743.

7799  Research in Speech and Hearing Science: Thesis  G  1 - 12
Research for thesis purposes only.
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 6 completions. This course is graded S/U.

8193  Directed Doctoral Studies  G  1 - 6
Directed, individualized areas of study for doctoral students in either the laboratory or clinical research tracks; conference, library, clinic, and/or laboratory involvement.
Prereq: Doctoral standing in SphHrng, or permission of instructor. Repeatable to a maximum of 30 cr hrs or 10 completions. This course is graded S/U.

8900  Doctoral Proseminar in Speech and Hearing Science  G  1
Advanced studies in speech and hearing science to acquaint doctoral students with departmental research, to pose possible dissertation topics, and to improve research/design skills.
Prereq: Grad standing and permission of instructor. Repeatable to a maximum of 4 cr hrs or 4 completions. This course is graded S/U.

8931  Cochlear Implants  G  2
Cochlear implant components and functions. Patient candidacy, implant programming, and rehabilitation procedures.
Prereq: Grad standing; or permission of instructor. Not open to students with credit for 930.01

8933  Tinnitus  G  2
Potential physiologic causes of tinnitus and hyperacusis; options for assessment and treatment of the disorders.
Prereq: Grad standing, or permission of instructor. Not open to students with credit for 930.03.

8934  Hearing Conservation  G  2
The effect of noise on hearing, physiological and psychological function, productivity, and communication; federal and state regulations reviewed and effects on communities discussed.
Prereq: Grad standing; or permission of instructor. Not open to students with credit for 930.05.

8935  Research to Practice  G  2
A seminar course designed to provide audiology and hearing science students with an opportunity to read and discuss recent journal articles relevant to the practice of audiology. In addition, this course is designed to provide an opportunity for audiology and hearing science students to improve their ability to conduct grand round discussions on audiological cases.
Prereq: Grad standing. Repeatable to a maximum of 8 cr hrs.

8940  Advanced Studies in Speech and Hearing Science  G  2
Advanced studies in speech and hearing science to provide doctoral students with special opportunities in advanced areas of speech and hearing science and disorders.
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions. Not open to students with 44 qtr cr hrs for 940.

8943  Evidence Based Practice  G  3
Students are placed in clinical sites for extended periods to solidify clinical skills and gain experience in the day to day workings of an audiology practice.
Prereq: Completion of AuD curriculum with exceptions of 8943 and 8997. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

8950  Seminar in Speech and Hearing Science  G  2
Advanced seminars in speech and hearing science and disorders.
Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 15 completions. Not open to students with 44 qtr cr hrs for 950.

8997  Capstone Project  G  1 - 5
Students complete clinical or research-centered project depending on their career interests.
Prereq: Completion of first two years' curriculum in AuD program or permission of academic adviser. Repeatable to a maximum of 14 cr hrs or 9 completions. This course is graded S/U.

8998  Research in Speech and Hearing Science: Thesis  G  1 - 12
Research for thesis purposes only.
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 5 completions. This course is graded S/U.

8999  Research in Speech and Hearing Science: Dissertation  G  1 - 12
Research for dissertation purposes only.
Prereq: Permission of instructor. Repeatable to a maximum of 60 cr hrs or 20 completions. This course is graded S/U.

Speech and Hearing Science
436 Statistics

1350.01 Elementary Statistics U 3
Introduction to probability and statistics, experiments, and sampling, data analysis and interpretation. Prereq: Math 1050, or Math Placement Level S, or permission of instructor. Not open to students with credit for GE Data Analysis course (AE&Econ 2005, AniSci 2260, Astro 3350, Chem 2210, 2210H, Com.Lit 3537, Earth Sci 2245, Econ 3400, ENR 2000, Geog 2200.01, 2200.02, HCS 2260, Inf 3810, Ling 2201, 2301H, Philos 1520, Physics 3700, PolSci 3780, 4781, Sociol 3454, Stat 1350, 1430, 1430.01, 1430.02, 1430H, 1450, 1450.01, 1450.02, 2450, 2450.01, 2450.02, 2480, 2480.01, 2480.02, 2480.02, 2480.03, 3450, 3450.01, 3450.02, 3460, 3470, 3470.01, 3470.02, 4202, 5301, or 5302). GE data any course.

1350.02 Elementary Statistics U 3
Introduction to probability and statistics, experiments, and sampling, data analysis and interpretation. Offered online. Prereq: Math 1050, or Math Placement Level S, or permission of instructor. Not open to students with credit for GE Data Analysis course (AE&Econ 2005, AniSci 2260, Astro 3350, Chem 2210, 2210H, Com.Lit 3537, Earth Sci 2245, Econ 3400, ENR 2000, Geog 2200.01, 2200.02, HCS 2260, Inf 3810, Ling 2201, 2301H, Philos 1520, Physics 3700, PolSci 3780, 4781, Sociol 3454, Stat 1350, 1430, 1430.01, 1430.02, 1430H, 1450, 1450.01, 1450.02, 2450, 2450.01, 2450.02, 2480, 2480.01, 2480.02, 2480.02, 2480.03, 3450, 3450.01, 3450.02, 3460, 3470, 3470.01, 3470.02, 4202, 5301, or 5302). GE data any course.

1430.01 Statistics for the Business Sciences U 4
Fundamentals of probability and statistics: Data collection and summaries, random variables, simple linear regression, two-way tables, conditional probability, sampling distributions, confidence intervals, hypothesis tests, analysis of variance. In-person recitation. Prereq: Math 1131, 1141, 1151, 1156, 1161.xx, or 1181H, or permission of instructor. Not open to students with credit for 1430, 1430.02, or Bus&Mgt 2320. GE data any course.

1430.02 Statistics for the Business Sciences U 4
Fundamentals of probability and statistics: Data collection and summaries, random variables, simple linear regression, two-way tables, conditional probability, sampling distributions, confidence intervals, hypothesis tests, analysis of variance. Partially or fully offered online. Prereq: Math 1131, 1141, 1151, 1156, 1161.xx, or 1181H, or permission of instructor. Not open to students with credit for 1430, 1430.02, or Bus&Mgt 2320. GE data any course.

1430H Statistics for the Business Sciences U 4
Calculation-based fundamentals of probability and statistics: Data collection and summaries, random variables, simple linear regression, two-way tables, conditional probability, sampling distributions, confidence intervals, hypothesis tests, ANOVA. Prereq: Honors standing, and Math 1131, 1151, 1156, 1161.xx, or 1181H, or permission of instructor. Not open to students with credit for 1430, 1430.02, or Bus&Mgt 2320. GE data any course.

1450.01 Introduction to the Practice of Statistics U 3
Algebra-based introduction to data analysis, experimental design, sampling, probability, inference, and linear regression. Emphasis on applications, statistical reasoning, and data analysis using statistical software. Prereq: Math 1116 or 1130 or above, or Math Placement Level L or M, or permission of instructor. Not open to students with credit for 1450, 1450.02, 2450, 2450.01, 2450.02, 2480, 2480.01, or 2480.02. GE data any course.

1450.02 Introduction to the Practice of Statistics U 3
Algebra-based introduction to data analysis, experimental design, sampling, probability, inference, and linear regression. Emphasis on applications, statistical reasoning, and data analysis using statistical software. Prereq: Math 1116 or 1130 or above, or Math Placement Level L or M, or permission of instructor. Not open to students with credit for 1450, 1450.02, 2450, 2450.01, 2450.02, 2480, 2480.01, or 2480.02. GE data any course.

1550 Introduction to Statistical Reasoning U 3
Introduction to statistical reasoning through data and application examples, including an introduction to coding in the R software, intended for students considering the Statistics major. Prereq or concur: Math 1152, or permission of instructor. GE data any course.

2480.02 Statistics for the Life Sciences U 3
Calculation-based introduction to the statistical analysis of biological data, including probability, common discrete and continuous distributions, experimental design, hypothesis testing, linear regression and correlation. Prereq: Math 1131, 1141, 1151, 1156, 1161.xx, or 1181H, or equiv, or permission of instructor. Not open to students with credit for 2450, 2450.01, 2450.02, 2480, 2480.01, or 3202. GE data any course.

2480.02 Statistics for the Life Sciences U 3
Calculation-based introduction to the statistical analysis of biological data, including probability, common discrete and continuous distributions, experimental design, hypothesis testing, linear regression and correlation. Prereq: Math 1131, 1141, 1151, 1156, 1161.xx, or 1181H, or equiv, or permission of instructor. Not open to students with credit for 2450, 2450.01, 2450.02, 2480, 2480.01, or 3202. GE data any course.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>EEK</th>
<th>Hours</th>
</tr>
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<tbody>
<tr>
<td>3470.01</td>
<td>Introduction to Probability and Statistics for Engineers</td>
<td>U</td>
<td>3</td>
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<tr>
<td>3470.02</td>
<td>Introduction to Probability and Statistics for Engineers</td>
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<tr>
<td>4193</td>
<td>Individual Studies</td>
<td>U</td>
<td>1 - 3</td>
</tr>
<tr>
<td>4193H</td>
<td>Honors Individual Studies in Undergraduate Topics in Statistics</td>
<td>U</td>
<td>1 - 4</td>
</tr>
<tr>
<td>4194</td>
<td>Group Studies</td>
<td>U</td>
<td>1 - 5</td>
</tr>
<tr>
<td>4201</td>
<td>Introduction to Mathematical Statistics I</td>
<td>U</td>
<td>4</td>
</tr>
<tr>
<td>4202</td>
<td>Introduction to Mathematical Statistics II</td>
<td>U</td>
<td>4</td>
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<tr>
<td>4301</td>
<td>Advanced Statistical Inference</td>
<td>U</td>
<td>3</td>
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<tr>
<td>4302</td>
<td>Computational Statistics</td>
<td>U</td>
<td>3</td>
</tr>
<tr>
<td>4620</td>
<td>Introduction to Statistical Learning</td>
<td>U</td>
<td>2</td>
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<tr>
<td>4911</td>
<td>Data Analytics Capstone</td>
<td>U</td>
<td>4</td>
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<td>4998</td>
<td>Undergraduate Research in Statistics</td>
<td>U</td>
<td>1 - 5</td>
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<td>4999</td>
<td>Undergraduate Thesis Research in Statistics</td>
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<td>4999H</td>
<td>Undergraduate Honors Thesis Research in Statistics</td>
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<td>5301</td>
<td>Intermediate Data Analysis I</td>
<td>U</td>
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<tr>
<td>5302</td>
<td>Intermediate Data Analysis II</td>
<td>U</td>
<td>G</td>
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<tr>
<td>5510</td>
<td>Statistical Foundations of Survey Research</td>
<td>U</td>
<td>G</td>
</tr>
<tr>
<td>5550</td>
<td>Introductory Time Series Analysis</td>
<td>U</td>
<td>G</td>
</tr>
<tr>
<td>5730</td>
<td>Introduction to R for Data Science</td>
<td>U</td>
<td>G</td>
</tr>
<tr>
<td>5740</td>
<td>Introduction to SAS Software</td>
<td>U</td>
<td>G</td>
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<tr>
<td>5760</td>
<td>Statistical Consulting Support from the SCS</td>
<td>U</td>
<td>G</td>
</tr>
<tr>
<td>6193</td>
<td>Individual Studies in Foundational Graduate Topics in Statistics</td>
<td>G</td>
<td>1 - 4</td>
</tr>
<tr>
<td>6194</td>
<td>Group Studies in Foundational Graduate Topics in Statistics</td>
<td>G</td>
<td>1 - 5</td>
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<tr>
<td>6201</td>
<td>Mathematical Statistics</td>
<td>G</td>
<td>4</td>
</tr>
<tr>
<td>6301</td>
<td>Probability for Statistical Inference</td>
<td>G</td>
<td>3</td>
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<td>6302</td>
<td>Theory of Statistical Analysis</td>
<td>G</td>
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<td>Course Code</td>
<td>Course Title</td>
<td>Credits</td>
<td>Prerequisites</td>
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<tr>
<td>6410</td>
<td>Design and Analysis of Experiments</td>
<td>G 4</td>
<td>Principles of designing experiments; analysis of variance techniques for hypothesis testing, simultaneous confidence intervals; block designs, factorial experiments, random effects and mixed models, split plot designs, response surface design. Prereq: 6201 (521), 6302 (623), or 8802 (622), and 6450 (645) or 6950; or permission of instructor. Not open to students with credit for 6910 (641).</td>
</tr>
<tr>
<td>6450</td>
<td>Applied Regression Analysis</td>
<td>G 4</td>
<td>Simple and multiple linear regression, diagnostics, model selection, models with categorical variables. Prereq: 6201, or equiv, or permission of instructor. Not open to students with credit for 6950.</td>
</tr>
<tr>
<td>6500</td>
<td>Statistical Machine Learning</td>
<td>G 3</td>
<td>Statistical models and algorithms for supervised and unsupervised learning; linear and logistic regression; classification and LDA; cross-validation and bootstrap; variable selection; ridge and LASSO penalization; smoothing splines and GAMs; SVM and kernels; CART and random forests; bagging; boosting; feed-forward and convolutional neural networks; k-means clustering and Gaussian mixtures; PCA. Prereq: 6450, or permission of instructor. Not open to students with credit for 7620.</td>
</tr>
<tr>
<td>6510</td>
<td>Survey Sampling Methods</td>
<td>G 3</td>
<td>Sampling from finite populations, simple random, stratified, systematic and cluster sampling design, ratio and regression estimates, non-sampling errors, models. Prereq: 5301 (529) or PubHBl 6122 (703), or equiv. Not open to students with credit for 651 or PubHBl 7225 (651). Cross-listed in PubHBl 7225.</td>
</tr>
<tr>
<td>6520</td>
<td>Applied Statistical Analysis with Missing Data</td>
<td>G 3</td>
<td>Models and methods for the dataset with missing values, including imputation, likelihood-based, and Bayesian models. Prereq: 6201, 6302 (623), or 6802 (622), and 6450 (645), 6950, PubHBl 6203, or 703; or permission of instructor. Not open to students with credit for 6520 (652) or PubHBl 7240 (652). Cross-listed in PubHBl 7240.</td>
</tr>
<tr>
<td>6530</td>
<td>Introduction to Spatial Statistics</td>
<td>G 2</td>
<td>Provides an introduction to spatial statistical methods based on the viewpoint that spatial data are a realization from a random process. Prereq: 6450 (645), 6950, or Geog 883.02, or permission of instructor. Not open to students with credit for 6930 (639), 630, or 6950; or permission of instructor. Not open to students with credit for 632.</td>
</tr>
<tr>
<td>6540</td>
<td>Applied Stochastic Processes</td>
<td>G 3</td>
<td>An introduction to some of the most commonly encountered stochastic processes. Goals include understanding basic theory as well as applications. Students should be familiar with basic probability, including conditional probability and expectation. Prereq: 6301 (610) or equiv, or permission of instructor. Not open to students with credit for 632.</td>
</tr>
<tr>
<td>6550</td>
<td>The Statistical Analysis of Time Series</td>
<td>G 2</td>
<td>To develop knowledge of time series processes, modeling (identification, estimation, and diagnostics), and forecasting methods. Experience is gained in the statistical theory so as to be able to analyze time series data in practice. Prereq: 6201, 6302, or 6802, and 6450 or 6950; or permission of instructor.</td>
</tr>
<tr>
<td>6560</td>
<td>Applied Multivariate Analysis</td>
<td>G 3</td>
<td>An introduction to classical multivariate statistical methods based on the multivariate normal distribution. Sufficient matrix algebra will be covered to enable students to understand multivariate methods using matrix notation. Prereq: 6450 (645) or 6950, or equiv, or 6950, or Math 2568 (568), or equiv, or permission of instructor. Not open to students with credit for 656.</td>
</tr>
<tr>
<td>6570</td>
<td>Applied Bayesian Analysis</td>
<td>G 3</td>
<td>Introduces various aspects of Bayesian modeling (including conditionally specified models and models for non-normal data) and simulation-based model-fitting strategies. Prereq: 6301 (610) or 6801 (621 and 622), or permission of instructor. Prereq or concur: 6450 (645) or 6950, and 6302 (623) [with 6301 prerequisite] or 6802 [with 6801 prerequisite]; or permission of instructor. Not open to students with credit for 625.</td>
</tr>
<tr>
<td>6605</td>
<td>Applied Survival Analysis</td>
<td>G 3</td>
<td>Introduction to time-to-event data analysis. Topics include summary statistics, non-parametric methods, semiparametric and parametric models, and competing risks analysis. Focus is on analysis of health data using statistical software. Prereq: 6450, 6950, or PubHBl 6211. Not open to students with credit for 6605 or PubHBl 7235. Cross-listed in PubHBl 7235.</td>
</tr>
<tr>
<td>6610</td>
<td>Applied Nonparametric Statistics</td>
<td>G 3</td>
<td>Nonparametric treatment of nonparametric tests, confidence intervals, estimation; topics include one- and two-sample problems, one- and two-way analysis of variance, multiple comparisons, correlation. Prereq: 5301 (529), 6201, or 6302 (623), or equiv, or permission of instructor. Not open to students with credit for 661.</td>
</tr>
<tr>
<td>6615</td>
<td>Design and Analysis of Clinical Trials</td>
<td>G 2</td>
<td>Design, monitoring, and analysis of clinical trials; includes protocol development, randomization schemes, sample size methods, and ethical issues. Prereq: 5301 (528 and 529), or equiv, or permission of instructor. Not open to students with credit for Biostat 615 or PubHBl 7215. Cross-listed in PubHBl 7215.</td>
</tr>
<tr>
<td>6620</td>
<td>Environmental Statistics</td>
<td>G 2</td>
<td>Survey of statistical methods for environmental data, with a focus on applications. Topics include sampling, regression, censoring, risk analysis, bioassay, time series, spatial statistics, and environmental extremes. Prereq: 5302 (529) or 6450 (645) or 6910 or Geog 683.00 or 633.01; prereq or concur: Stat 691C; or permission of instructor. Not open to students with credit for 662.</td>
</tr>
<tr>
<td>6625</td>
<td>Statistical Analysis of Genetic Data</td>
<td>G 3</td>
<td>Introduction to Mendelian principles, genetic epidemiology, and molecular genetics; family studies; model-based and model-free linkage analysis for mapping disease genes; genome wide association studies; association analysis using haplotypes. Prereq: 6301 (610) and 6302 (623), or permission of instructor.</td>
</tr>
<tr>
<td>6650</td>
<td>Discrete Data Analysis</td>
<td>G 2</td>
<td>Two-by-two tables; cross-sectional, prospective, and retrospective studies; measures and tests of association; log linear models; association graphs; analysis of stratified tables. Prereq: 5302 (530), 6450 (645), 6950, PubHBl 6203, or 703, or permission of instructor. Not open to students with credit for 665.</td>
</tr>
<tr>
<td>6730</td>
<td>Introduction to Computational Statistics</td>
<td>G 2</td>
<td>Introduction to computational statistics. Students will learn how to manipulate data, perform statistical analyses, perform simple Monte Carlo experiments, use resampling methods and discuss the results obtained from their analyses. Prereq: 6301 (610), 6302 (623), and 6410 (641) or 6910, and 6450 (645) or 6950; or permission of instructor. Not open to students with credit for 673.</td>
</tr>
<tr>
<td>6740</td>
<td>Data Management and Graphics for Statistical Analyses</td>
<td>G 3</td>
<td>Data manipulation for statistical analyses, missing data calculations, merging and transporting data sets, formatting data analysis results, using relational databases and SQL, character data, graphical presentation of data, and macro programming. No prior knowledge of SAS programming is required. Prereq: Not open to students with credit for 5740.</td>
</tr>
<tr>
<td>6750</td>
<td>Statistical Consulting and Collaboration</td>
<td>G 2</td>
<td>Role of the statistician as both consultant and collaborator; enhancement of analytical and communication skills; structuring working engagements; introduction to consulting-specific technical skills; experience working on consulting projects. Prereq: 6450 (645) or 6950, or permission of instructor. Not open to students with credit for 600 or 601. This course is graded S/U.</td>
</tr>
<tr>
<td>6801</td>
<td>Statistical Theory I</td>
<td>G 4</td>
<td>Introduction to probability, random variables, distribution theory and principles of inference. Intended primarily for students in the PhD program in Statistics or Biostatistics. Prereq: Grad standing in Statistics or Biostatistics, or permission of instructor. Not open to students with credit for 6301 (610) or 620.</td>
</tr>
<tr>
<td>6802</td>
<td>Statistical Theory II</td>
<td>G 4</td>
<td>Introduction to statistical inference: Estimation, hypothesis testing, confidence intervals, and decision theory. Intended primarily for students in the PhD program in Statistics or Biostatistics. Prereq: 6801, or permission of instructor. Not open to students with credit for 622.</td>
</tr>
<tr>
<td>6860</td>
<td>Foundations of the Linear Model</td>
<td>G 2</td>
<td>Linear models; Least squares estimates; Multivariate normal distribution; Maximum likelihood estimators; Covariance matrices, information matrices; Quadratic forms; Principal components; Orthogonal polynomial regression; Non-central distributions. Prereq: Math 2568 (568) or equiv, or permission of instructor. Concur: 6802. Not open to students with credit for 742.</td>
</tr>
<tr>
<td>6910</td>
<td>Applied Statistics I</td>
<td>G 4</td>
<td>One and two-sample problems, randomization-based inference, contingency tables, analysis of variance, the mixed model, experimental designs. Intended primarily for students in the PhD program in Statistics or Biostatistics. Prereq or concur: 6801, or permission of instructor. Not open to students with credit for 6410 (641).</td>
</tr>
<tr>
<td>6950</td>
<td>Applied Statistics II</td>
<td>G 4</td>
<td>Simple and multiple linear regression, diagnostics, model selection, the mixed model, and generalized linear models. Intended primarily for students in the PhD program in Statistics or Biostatistics. Prereq: 6801 (620) and 6910 (641), or permission of instructor. Not open to students with credit for 6450 (645).</td>
</tr>
<tr>
<td>6998</td>
<td>Research in Foundational Graduate Topics in Statistics</td>
<td>G 1 - 5</td>
<td>Research topics in foundational graduate topics in Statistics. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 6 completions. This course is graded S/U.</td>
</tr>
<tr>
<td>7201</td>
<td>Theory of Probability</td>
<td>G 3</td>
<td>Measure and integration, random variables, independence, integration and expectation, convergence, characteristic functions, central limit theorems. Intended primarily for students in the PhD program in Statistics or Biostatistics. Prereq: 6802 (622), or permission of instructor. Not open to students with credit for 722 or 723.</td>
</tr>
</tbody>
</table>
7301 Advanced Statistical Theory I  
G 3
Exponential families, sufficiency, Rao-Blackwell theorem, information, efficiency, maximum likelihood estimation, M-estimation, asymptotics, density estimation. Intended primarily for PhD students in Statistics or Biostatistics.
Prereq: 6802 (622), or permission of instructor. Not open to students with credit for 621.

7302 Advanced Statistical Theory II  
G 3
Hypothesis testing: likelihood ratio tests, resampling and permutation based tests, sequential tests, multiple testing, asymptotic distributions of test statistics. Intended primarily for PhD students in Statistics or Biostatistics.
Prereq: 7301, or permission of instructor. Not open to students with credit for 622.

7303 Bayesian Analysis and Decision Theory  
G 3
Decision theory, loss functions, subjective and objective prior distributions, posterior distribution, estimation, testing, prediction, sensitivity analysis, hierarchical modeling. Intended primarily for PhD students in Statistics or Biostatistics.
Prereq: 7301 or 622, or permission of instructor. Not open to students with credit for 620.

7410 Theory of the Linear Model  
G 3
Prereq: 6802 (622), 6860, and 6950 (645) or 6910 (641); or permission of instructor. Not open to students with credit for 742.

7430 Generalized Linear Models  
G 3
Introduces the statistical theory and methods to extend regression and analysis of variance to non-normal data. Students will learn to use fixed and random effect generalized linear models to model univariate and multivariate data.
Prereq: 6801 (620 and 621), 6802 (621 and 622), 6910 (641), 6960 (645), and 7410 (742); or permission of instructor. Not open to students with credit for 743.

7470 Advanced Longitudinal Data Analysis  
G 3
Classical and modern statistical approaches for continuous and discrete longitudinal data. Random effects and growth curve models, measurement error, generalized estimating equations, estimation with missing data, multivariate longitudinal data.
Prereq: 6802 (622) and 6950 (645), or permission of instructor. Not open to students with credit for 720 or PubHlth 8230. Cross-listed in PubHlth 8230.

7540 Theory of Stochastic Processes  
G 3
Prereq: 7201, or permission of instructor. Not open to students with credit for 632.

7550 Time Series Theory and Methods  
G 3
A systematic advanced treatment of areas of current interest in the statistical theory and methods for the analysis of time series processes. Topics will be announced each semester.
Prereq: 6560 (656) or 6801 (620 and 621), 6802 (621 and 622), and 6950 (645); or permission of instructor.

7560 Multivariate Analysis  
G 3
Matrix normal distribution; Matrix quadratic forms; Matrix derivatives; Fisher scoring algorithm. Multivariate analysis of variance; Random coefficient growth models. Principal components; Factor analysis; Discriminant analysis; Mixture models.
Prereq: 6802 (622), or permission of instructor. Not open to students with credit for 755 or 756.

7605 Advanced Regression Modeling of Time-to-Event Data  
G 3
Advanced topics in survival analysis. Proportional hazards models, parametric regression models, length-bias and prevalent sampling, multivariate survival analysis, counting processes, recurrent events.
Prereq: 6802 (622) and 6950. Not open to students with credit for PubHlth 8235 or 706. Cross-listed in PubHlth 8235.

7610 Theory of Nonparametric Statistics  
G 3
Theory of distribution-free statistics based on counting and ranking; U-statistics; univariate and multivariate rank regression; additional topics on nonparametric statistics.
Prereq: 6950 (622), or permission of instructor. Not open to students with credit for 761.

7620 Elements of Statistical Learning  
G 3
Statistical and Machine Learning - Applied modern regression, pattern recognition and clustering techniques for discovery; understanding of underlying statistical structures within large, complex and noisy data sets.
Prereq: 6301 (610) and 6302 (623), or 6801 (620) and 6802 (622), or ECE 6001, or 7001, or equiv; or permission of instructor. Not open to students with credit for 760.

7630 Nonparametric Function Estimation  
G 2
Function estimation with emphasis on smoothing splines, flexible model building with multivariate data, reproducing kernel Hilbert space methods, additional topics in smoothing.
Prereq: 6802 and 6950, or permission of instructor.

7730 Advanced Computational Statistics  
G 3
Covers modern methods of statistical computing, with emphasis on how and why they work. As a prerequisite, students should be able to program basic functions. Intended primarily for students in the PhD program in Statistics or Biostatistics.
Prereq: 6802 (622) and 6950 (645); or permission of instructor. Not open to students with credit for 773.
8605 Advanced Survival Analysis G 3
Counting process approach to modeling life history data, including Nelson-Aalen, product limit, and K-sample estimators. Topics from parametric models, semiparametric proportional and additive hazards regressions, and multivariate survival models. Prereq: 7201 (722 and 723) and 7540 (832), or permission of instructor. Not open to students with credit for BioStat 805 and 806.

8625 Statistical Methods for Analyzing Genetic Data G 3
Basic principles of population genetics; gene frequency estimation; likelihood computation on pedigrees using peeling algorithm, Lander-Green algorithm, Monte Carlo methods; linkage analysis, population and family based association studies. Prereq: 6802 (622), or permission of instructor. Not open to students with credit for 833.

8750.01 Research Group in Statistical Learning and Data Mining G 1
Research group in Statistical Learning and Data Mining. Topics vary by the offering. Prereq: Grad standing in Statistics or Biostatistics, or permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

8750.02 Research Group in Design of Physical and Computer Experiments G 1
Research group in Design of Physical and Computer Experiments. Topics vary by the offering. Prereq: Grad standing in Statistics or Biostatistics, or permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

8750.03 Research Group in Statistical Genetics and Bioinformatics G 1
Research group in Genetics. Topics vary by the offering. Prereq: Grad standing in Statistics or Biostatistics, or permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

8750.04 Research Group in Quantitative Methods in Consumer Behavior G 1
Research group in Quantitative Methods in Consumer Behavior. Topics vary by the offering. Prereq: Grad standing in Statistics or Biostatistics, or permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

8750.05 Research Group in Ranked Set Sampling G 1
Research group in Ranked Set Sampling. Topics vary by the offering. Prereq: Grad standing in Statistics or Biostatistics, or permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

8750.06 Research Group in Spatial Statistics and Environmental Statistics G 1
Research group in Spatial Statistics and Environmental Statistics. Topics vary by the offering. Prereq: Grad standing in Statistics or Biostatistics, or permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

8750.08 Research Group in Observational Data G 1
Research group in Observational Data. Topics vary by the offering. Prereq: Grad standing in Statistics or Biostatistics, or permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

8810 Advanced Topics in Statistics I G 1 - 3
A systematic advanced treatment of areas of current interest in Statistics. Topics will be announced each semester. Prereq: Grad standing in Statistics or Biostatistics, or permission of instructor. Repeatable to a maximum of 24 cr hrs or 8 completions.

8820 Advanced Topics in Statistics II G 1 - 3
A systematic advanced treatment of areas of current interest in Statistics. Topics will be announced each semester. Prereq: Grad standing in Statistics or Biostatistics, or permission of instructor. Repeatable to a maximum of 24 cr hrs or 8 completions.

8895 Statistics Seminar G 1
Topics range over the current research interests of statisticians from around the world; some lectures are of an expository nature. Prereq: Grad standing in Statistics or Biostatistics, or permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

8998 PhD Dissertation Research in Statistics (Pre-candidacy) G 1 - 18
PhD Dissertation research in Statistics (Pre-candidacy). Prereq: Permission of instructor. Repeatable. This course is graded S/U.

8999 PhD Dissertation Research in Statistics G 1 - 18
PhD Dissertation research in Statistics. Prereq: Permission of instructor. Repeatable. This course is graded S/U.

7010 Seminar in Practice Management for Surgeons I G 1
Provides surgery residents basic information on business principles related to practice of medicine and surgery. Prereq: Medical Degree and one year of Surgical Residency. This course is graded S/U.

7020 Seminar in Practice Management for Surgeons II G 1
Provides surgery residents basic information on business principles related to practice of medicine and surgery. Prereq: Medical Degree and one year of Surgical Residency. This course is graded S/U.

7030 Seminar in Practice Management for Surgeons III G 1
Provides surgery residents basic information on business principles related to practice of medicine and surgery. Prereq: Medical Degree and one year of Surgical Residency. This course is graded S/U.

7040 Seminar in Practice Management for Surgeons IV G 1
Provides surgery residents basic information on business principles related to practice of medicine and surgery. Prereq: Medical Degree and one year of Surgical Residency. This course is graded S/U.

7050 Seminar in Practice Management for Surgeons V G 1
Provides surgery residents basic information on business principles related to practice of medicine and surgery. Prereq: Medical Degree and one year of Surgical Residency. This course is graded S/U.

7060 Seminar in Practice Management for Surgeons VI G 1
Provides surgery residents basic information on business principles related to practice of medicine and surgery. Prereq: Medical Degree and one year of Surgical Residency. This course is graded S/U.

7190.05 Research Studies in Surgery: Pediatric Surgery G 1 - 12
Pediatric Surgery. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions. This course is graded S/U.

7193.01 Individual Studies: General Surgery G 1 - 12
Conducting basic science or clinical research on a surgically related topic under faculty supervision. Prereq: Must be a PGY-2 or more advanced in surgery residency or related programs. Repeatable to a maximum of 12 cr hrs or 12 completions. This course is graded S/U.

7193.02 Individual Studies: Pediatric Surgery G 1 - 12
Conducting basic science or clinical research on a surgically related topic under faculty supervision. Prereq: Must be a PGY-2 or more advanced in surgery residency or related programs. Repeatable to a maximum of 12 cr hrs or 12 completions. This course is graded S/U.

7193.04 Individual Studies: Surgical Infectious Diseases G 1 - 12
Conducting basic science or clinical research on a surgically related topic under faculty supervision. Prereq: Must be a PGY-2 or more advanced in surgery residency or related programs. Repeatable to a maximum of 12 cr hrs or 12 completions. This course is graded S/U.

7193.06 Individual Studies: Surgical Oncology G 1 - 12
Conducting basic science or clinical research on a surgically related topic under faculty supervision. Prereq: Must be a PGY-2 or more advanced in surgery residency or related programs. Repeatable to a maximum of 12 cr hrs or 12 completions. This course is graded S/U.

7193.08 Individual Studies: Transplantation G 1 - 12
Conducting basic science or clinical research on a surgically related topic under faculty supervision. Prereq: Must be a PGY-2 or more advanced in surgery residency or related programs. Repeatable to a maximum of 12 cr hrs or 12 completions. This course is graded S/U.

7193.10 Individual Studies: Wound Healing G 1 - 12
Conducting basic science or clinical research on a surgically related topic under faculty supervision. Prereq: Must be a PGY-2 or more advanced in surgery residency or related programs. Repeatable to a maximum of 12 cr hrs or 12 completions. This course is graded S/U.

7193.12 Individual Studies: Molecular Medicine G 1 - 12
Conducting basic science or clinical research on a surgically related topic under faculty supervision. Prereq: Must be a PGY-2 or more advanced in surgery residency or related programs. Repeatable to a maximum of 12 cr hrs or 12 completions. This course is graded S/U.

8501 Career Development Course for Surgeons G M 2
This course is designed for surgery residents to strengthen their research practices and data collection skills, to gain the skills needed for grant writing, to enhance awareness of the Surgeon-Scientist Career Path, to develop research skills to enhance independence and career success, to facilitate selection and optimization of first faculty position, and to enhance awareness of career resources. Prereq: Surgical Resident, Surgical Fellow, Surgery Junior Faculty, or permission of instructors. Repeatable to a maximum of 6 cr hrs.
8505 Communication Through Scientific Writing

Scientific writing is a critical skill set necessary to facilitate dissemination of new knowledge and research collaborations, and promote effective communication of ideas and research results. This series of facilitated web-based translational science curriculum is designed to help clinicians enhance their communication skills and disseminate their research findings. Course repeatable one time.
PreReq: Enrollment in Masters of Medical Science program, or permission of instructor.
Repeatable to a maximum of 2 cr hrs.

8814 Responsible Conduct of Research: Human Participants and the Use of Animals in Biomedical Research

Responsible conduct of research with human participants and the use of animals in biomedical research is crucial to maintaining the public trust in both the results and the methods of biomedical research. Course repeatable to a maximum of 4 cr hrs.

8815 Training in Clinical Research I

Provide exposure to students to ongoing clinical trials at OSUMC and essential skills that are needed to conduct research.
PreReq: Permission of instructor. This course is graded S/U.

8850 Seminars in Surgery: Grand Rounds

Discussion of current clinical advances in pertinent literature in Surgery with emphasis on Clinical and Basic Sciences as well as translational application.
PreReq: Must be a PGY-2 or more advanced in surgery residency or related programs. Repeatable to a maximum of 4 cr hrs. This course is graded S/U.

8860 Seminars in Surgery: Morbidity and Mortality

Educational seminars in Surgical Complications.
PreReq: Must be a PGY-2 or more advanced in surgery residency or related programs. Repeatable to a maximum of 4 cr hrs. This course is graded S/U.

8900 Applications of Immunology in Surgery

A multi-disciplinary group of students at the graduate, doctoral and post-doctoral level will discuss recently published literature (last 12 months) in the field of immunology and landmark immunology studies from prominent immunology journals as they apply to surgical problems. Students will select articles which are relevant to a broader audience but also relevant to their own research interests. Clinical background in medicine and surgery with interest in immunology, and the application of basic immunology discoveries to surgical practice.
PreReq: Grad, or Prof standing; or permission of instructor. Repeatable to a maximum of 6 cr hrs.

8999 Research in Surgery

Research for thesis purposes.
PreReq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions.

Swahili

1101 Elementary Swahili I

Development of oral proficiency in Swahili through basic listening, speaking, and reading skills using a competency-based curriculum. Not open to native speakers of the language through regular course enrollment.
PreReq: Not open to students with credit for 101. This course is available for EM credit. GE for lang course.

1102 Elementary Swahili II

Continuation of 1101; further work on developing oral proficiency in Swahili through basic listening, speaking, and reading skills using a competency-based curriculum. Not open to native speakers of the language through regular course enrollment.
PreReq: 1101. Not open to students with credit for 102. This course is available for EM credit. GE for lang course.

1103 Elementary Swahili III

Continuation of 1102; further work on developing oral proficiency in Swahili through basic listening, speaking, and reading skills using a competency-based curriculum. Not open to native speakers of the language through regular course enrollment.
PreReq: 1102. Not open to students with credit for 104. This course is available for EM credit. GE for lang course.

2201 Intermediate Swahili I

Enhances the students proficiency in the speaking, reading, listening, and writing of the Swahili language in meaningful communicative contexts.
PreReq: 1103. This course is available for EM credit.

3301 Intermediate Swahili III

A cultural and historical overview of the Swahili people and their location in East Africa.
PreReq: 2241. This course is available for EM credit.

Swedish

1101 Swedish I

Introduction to language and culture of Sweden with emphasis on the acquisition of basic communication skills in a cultural context. Closed to native speakers of this language.
PreReq: Not open to students with credit for 101.01, or to students with 2 or more years of study in this language in high school, except by permission of dept. GE for lang course.

1102 Swedish II

Continued development of Swedish language skills and knowledge for effective communication. Emphasis on more advanced language structures and on more nuanced cultural issues. Not open to native speakers of this language through regular course enrollment or EM credit.
PreReq: A grade of C- or above in 1101. Not open to students with 102.01 and 103.01. GE for lang course. FL Admis Cond course.

1103 Swedish III

Development of skills necessary for the independent use of Swedish. Discussions, presentations, writing and listening/viewing activities address topics of contemporary Sweden.
PreReq: Grade of C- or better in 1102. Not open to students with credit for 103.01, 104.01, or to native speakers of this language through regular course enrollment or EM credit. GE for Lang Course. FL Admis Cond Course.

2101 Texts and Contexts: Contemporary Swedish Language, Culture, and Society

Development of communication skills and knowledge about recent social, political, and cultural developments in Sweden through texts, media, and film.
PreReq: Grade of C- or better in Swedish 1103. Not open to students with credit for 201. FL Admis Cond course.

Technical Physics

1150T Technical Physics

Principles and applications of forces, motion, energy, matter, heat, thermodynamics, electricity, mechanical waves, and electromagnetic radiation.
PreReq: GenMath 1145T (145T) or Math 1146 (146) with a grade of C- or better. Not open to students with credit for 101T or 102T. This course is available for EM credit.

Theatre

2000.02 Technical Production Practicum: Sound

Provides experience in technical production activities. Repeatable to a maximum of 6 cr hrs or 6 completions.

2000.03 Technical Production Practicum: Video

Provides experience in technical production activities. Repeatable to a maximum of 6 cr hrs or 6 completions.

2000.04 Technical Production Practicum: Scenic Construction and Painting

Provides experience in technical production activities. Repeatable to a maximum of 6 cr hrs or 6 completions.

2000.05 Technical Production Practicum: Costuming

Provides hands-on experience in practical costuming skills, such as fabric preparation, machine and hand sewing, costume maintenance, and costume crafts while working collaboratively and communicating professionally with a variety of artists involved in the theatrical production process.
Repeatable to a maximum of 6 cr hrs or 6 completions.

2000.06 Technical Production Practicum: Lighting

Provides training and experience in lighting production activities. Students learn to hang & focus lights & delve into associated technology. This laboratory meets irregularly; students are required to complete 42 hours of work across the semester and attendance at scheduled weekend lighting load-ins is required.
Repeatable to a maximum of 6 cr hrs or 6 completions.

2000.09 Technical Production Practicum: General

Provides experience in technical production activities.
PreReq: Not open to students with credit for 205.

2000.11 Technical Production Practicum: Box Office

Provides experience in technical production activities. Repeatable to a maximum of 6 cr hrs or 6 completions.

2000.12 Technical Production Practicum: Self Production

Provides training and experience in self-production of theatrical events.
Repeatable to a maximum of 3 cr hrs or 6 completions.

2000.21 Technical Production Practicum: Publicity

Provides experience in technical production activities. Repeatable to a maximum of 6 cr hrs or 6 completions.
442  Theatre

2100  Introduction to Theatre  U  3
A study of the art and profession of theatre, with an emphasis on evaluating and appreciating live performance, theatre's cultural importance, and its relationship to issues of social diversity. Students study performance conventions, texts, and spaces from ancient times to present day. While not an acting class, students get firsthand experience in the collaborative process of theatre creation.
Prereq: Not open to students with credit for 2100H or 2114H. GE VPA and diversity soc div in the US course.

2100H  Introduction to Theatre  U  3
A study of the art and profession of live theatre with emphasis on its cultural and social influences in our society.
Prereq: Honors standing or permission of instructor. Not open to students with credit for 2114H (101H). 100, or 100H. GE VPA and diversity soc div in the US course.

2110  Script Analysis  U  3
Fundamental principles for intensive study of the theatrical script as the basis for actor training, performance, and production.
Prereq: 2100 or 2101H. Not open to students with credit for 210.

2211  Introduction to Production Design  U  3
Introduction to scenic, costume, lighting and sound design techniques for production; experience in research and designing projects.

2341H  Moving Image Art  U  3
The issues and concepts fundamental to the development of an understanding of the aesthetics of film and video from the standpoint of the producer and maker.
Prereq: Honors standing or by permission of instructor. Not open to students with credit for 230H. GE VPA course.

2351  Fundamentals of Radio and TV Production  U  3
Broadcasting techniques, skills and styles.
Prereq: Not open to students with credit for 560.

2367.01  Self Images: America on Stage, 1830 to the Present  U  3
Exploration of the images of Americans presented on popular stages through written analysis of theatrical and critical texts.
Prereq: English 1110, and Soph standing or above. Not open to students with credit for 2367. GE writing and comm course: level 2 and diversity soc div in the US course.

2367.01H  Self Images: America on Stage, 1830 to the Present  U  3
Exploration of the images of Americans presented on popular stages through written analysis of theatrical and critical texts.
Prereq: Honors and Soph standing, and English 1110 or equiv. Not open to students with credit for 2367 (367). GE writing and comm course: level 2 and Lit and diversity soc div in the US course.

2367.02  African American Theatre History  U  3
Examination of aesthetic and sociological evolution in America of African American theatre, literature, and film.
Prereq: English 1110 (110) or equiv, and Soph, Jr, or Sr standing. Not open to students with credit for 2367 (367). GE writing and comm course: level 2 and Lit and diversity soc div in the US course.

2367.03  Criticizing Television  U  3
Study of theatre history at an intermediate level with emphasis on writing skills. A critical analysis of a wide variety of television programs through viewing, discussing, reading, and writing.
Prereq: English 1110 (110) or equiv, and Soph, Jr, or Sr standing. Not open to students with credit for 2367.xx (367.xx) or ArtEduc 2367.03 (367.03). GE writing and comm course: level 2 and diversity soc div in the US course. Cross-listed in ArtEduc.

2811  The Craft of Acting  U  3
An introductory acting class exploring the basic techniques of imagination, concentration, character development, and script analysis through work on monologues, scenes, and plays.
Prereq: Not open to students with credit for 280. GE VPA course.

3000  Production Run Crew Practicum  U  1 - 2
Hands-on involvement in the production of live theatre; participation leading to a more thorough understanding of theatre and in particular theatre design and technology. Repeatable to a maximum of 8 cr hrs or 4 completions.

3111  Stage Directing  U  3
An introduction to the basic principles, techniques and challenges of directing for the stage.
Prereq: 2811.

3221  Stage Management  U  3
Principles, practices, and techniques of stage management, and a survey of modern management techniques.
Prereq: 2211. Not open to students with credit for 602.

3241  Theatre Sound Techniques  U  3
An examination of the art of sound design as well as an exploration of the craft of sound engineering for theatre.
Prereq: 2211. Not open to students with credit for 626.

3351  Television Production I  U  3
Fundamentals of television broadcasting through lectures, labs and practicum involvement with OSU's student television station and media lab.
Prereq: Not open to students with credit for 300.

3352  Television Production II  U  3
Intermediate level course providing students with in depth study of television broadcasting through lectures, labs, and practicum involvement with OSU's student television and media lab.
Prereq: 3351 (300).

3411  Introduction to Scenic Design  U  3
Introduction to basic design elements for the stage including research, sketching, color theory, model building, drafting and stagecraft.
Prereq: 2211. Not open to students with credit for 220.

3511  Introduction to Costume Design  U  3
Fundamental exploration of methods of design and production as applies to costumes.
Prereq: 2211. Not open to students with credit for 222.

3551  Stage Make-Up  U  3
Practical application of theories and techniques of make-up design. Emphasis on presentation styles. Purchase of make-up kit required.
Prereq: 2211. Not open to students with credit for 353.

3597  Issues of the Contemporary World: Censorship and Performance  U  3
Exploration of censorship in live performance in both Western and non-Western communities and the ways such practice links to governmental public policy or to pressure groups.
Prereq: Jr or Sr standing. GE cross-disciplinary seminar course.

3611  Introduction to Lighting Design  U  3
Introduction to basic lighting design elements for the stage including research, collaboration, basic electrical practice, color theory, drafting, and lighting stage work.
Prereq: 2211. Not open to students with credit for 221.

3731  History of Performance I  U  3
Survey of representative theatre and performance from Western and non-Western traditions from ancient times to the late 1700s.
Prereq: 2100, 2100H, or 211H.

3732  History of Performance II  U  3
In this course, we will delve into the history of theatre from 1780 to the present. Attention will be paid to global contexts, theatrical texts, as well as the history of the crafts of theatrical design, directing, and acting.
Prereq: 2100, 2100H, or 211H.

3812  Acting Studio I: Stanislavski  U  3
An intermediate acting studio exploring the Stanislavski basic acting technique of given circumstances, intentions, obstacles and strategies, in exercises, scenes and discussion.
Prereq: 2811 (280). Not open to students with credit for 2812 or 380.

3813  Acting Studio II: Contemporary Scene  U  3
An intermediate acting studio focusing on scene study and dramatic analysis, utilizing contemporary plays, and studying current playwrights.
Prereq: 2811 (280). Not open to students with credit for 2813 (381).

3814  Acting Studio III: Special Topics  U  3
An advanced acting studio focused on various acting topics, techniques, and approaches. Topics may include Shakespeare, improvisation, period styles, and others.
Prereq: 2811, and permission of instructor. Not open to students with credit for 382. Repeatable to a maximum of 9 cr hrs.

3815  Acting for the Camera  U  3
An advanced acting class focusing on the specific challenges of acting for the camera.
Prereq: 2811, and permission of instructor.

3821  Accents and Dialects  U  3
The fundamentals of acquiring dialects for the stage.
Prereq: 2811.

3825  Special Topics in Voice for the Stage  U  3
An advanced voice studio exploring various topics including individual voice study, phonetics, vocal design, verbatim theatre, and others.
Prereq: 2811 and 3831, or permission of instructor.

3831  Movement and Voice  U  3
Basic study and training in movement for actors, voice production, and whole body expressiveness.
Prereq: 2811. Not open to students with credit for 2831, or 383 and 386.

3832  Viewpoints Training  U  3
Introduction to Viewpoints Training: A method of improvisation that builds ensembles, strengthens physical range, and develops acting, directorial and choreographic skills.
Prereq: 2811 and 3831, or permission of instructor. Not open to students with credit for 2832.
3921S  Creation of Outreach Theatre  U  3
The creation, development and performance of interactive and instructional theatre for social awareness.
Repeateable to a maximum of 6 cr hrs.
4000.01 Practicum: Stage Management  U  1 - 3
Individual theatrical performance and production activities at an advanced level under faculty supervision.
Prereq: Permission of instructor. Not open to students with credit for 405.01. Repeatable to a maximum of 18 cr hrs or 8 completions.
4000.02 Practicum: Sound  U  1 - 3
Individual theatrical performance and production activities at an advanced level under faculty supervision.
Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs or 8 completions.
4000.03 Practicum: Video  U  1 - 3
Individual theatrical performance and production activities at an advanced level under faculty supervision.
Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs or 8 completions.
4000.04 Practicum: Stage Design  U  1 - 3
Individual theatrical performance and production activities at an advanced level under faculty supervision.
Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs or 8 completions.
4000.05 Practicum: Costuming & Makeup  U  1 - 3
Individual theatrical performance and production activities at an advanced level under faculty supervision.
Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs or 8 completions.
4000.06 Practicum: Lighting  U  1 - 3
Individual theatrical performance and production activities at an advanced level under faculty supervision.
Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs or 8 completions.
4000.07 Practicum: Dramaturgy  U  1 - 3
Individual theatrical performance and production activities at an advanced level under faculty supervision.
Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs or 8 completions.
4000.08 Practicum: Acting  U  1 - 3
Individual theatrical performance and production activities at an advanced level under faculty supervision.
Prereq: Permission of instructor, by audition. Repeatable to a maximum of 18 cr hrs or 8 completions.
4000.09 Practicum: General  U  1 - 3
Individual theatrical performance and production activities at an advanced level under faculty supervision.
Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs or 8 completions.
4000.11 Practicum: Theatre Management  U  1 - 3
Individual theatrical performance and production activities at an advanced level under faculty supervision.
Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs or 8 completions.
4000.14 Practicum: Technical Direction  U  1 - 3
Individual theatrical performance and production activities at an advanced level under faculty supervision.
Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs or 8 completions.
4000.18 Practicum: Directing  U  1 - 3
Individual theatrical performance and production activities at an advanced level under faculty supervision.
Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs or 8 completions.
4191 Internship in Theatre  U  1 - 12
A cooperative education or internship assignment conducted under the supervision of a faculty member.
Prereq: Permission of instructor. Repeatable to a maximum of 36 cr hrs or 3 completions. This course is graded S/U.
4194 Group Studies  U  1 - 3
Group studies.
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 4 completions.
4381 Narrative Filmmaking Fundamentals  U  3
This course provides a foundation in the conceptual and technical building blocks of cinematic narrative, emphasizing collaborative projects. Students will investigate the nature of event, character, and place, developing their production and post-production skills in composition, camera movement, lighting, editing, and sound design to support and enhance storytelling.
Prereq: Permission of instructor.
4821 Singing Actor  U  3
The fundamentals of acting through song.
Prereq: 2611.
4921S Performance Studies in Outreach Theatre  U  3
Use of improvisational acting techniques to develop the performance of an outreach touring theatre production.
Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs.
4998 Undergraduate Scholarship: Research and Creative Activity in Theatre  U  1 - 12
Undergraduate research or creative activities in varying topics leading towards a creative project without a thesis.
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 4 completions. This course is graded S/U.
4998H Undergraduate Scholarship: Research and Creative Activity in Theatre  U  1 - 12
Undergraduate research or creative activities in varying topics leading towards a creative project without a thesis.
Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 12 cr hrs or 4 completions. This course is graded S/U.
4999 Undergraduate Thesis Scholarship: Research and Creative Activity in Theatre  U  1 - 12
Undergraduate research or creative activities in varying topics that will lead to a thesis.
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 4 completions. This course is graded S/U.
4999H Undergraduate Honors Thesis Scholarship: Research and Creative Activity in Theatre  U  1 - 12
Undergraduate research or creative activities in varying topics that will lead to an Honors thesis.
Prereq: Honors standing and permission of instructor. Repeatable to a maximum of 12 cr hrs or 4 completions. This course is graded S/U.
5111 Advanced Stage Directing  U  G  3
Principles, techniques and practices of advanced stage directing with an emphasis on text analysis, research and process.
Prereq: 3111 (310). Not open to students with credit for 610.
5177 Alexander Technique  U  G  1 - 2
The relationship of kinesthetic perception and the postural reflexes to physical coordination in performance.
Prereq: Permission of instructor. Repeatable to a maximum of 8 cr hrs or 4 completions. Cross-listed in Dance and Music.
5189 Field Work in Theatre, Cinema, or Video  U  G  1 - 12
Planned production or management experience in an off-campus professional, educational, community theatre, film or video facility, or other agency under supervision.
Prereq: Permission of instructor. Repeatable to a maximum of 36 cr hrs or 3 completions. This course is graded S/U.
5193 Individual Studies  U  G  1 - 3
Conference, library, and laboratory work.
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 4 completions. This course is graded S/U.
5194 Group Studies  U  G  1 - 3
Group Studies.
Repeateable to a maximum of 12 cr hrs or 4 completions.
5210 Drafting & Modeling for Theatre  U  G  3
An introduction to digital drafting and modeling techniques with an emphasis on design for theatre production; exploration of CAD drafting in 2D and 3D as well as 3D modeling and rendering; exploring different software applications and methods of integrating them.
5220 Professional Aspects  U  G  3
Study of the professional theatre as a business; contracts, unions, the theatre marketplace; preparation of resumes, portfolios, audition pieces, interview.
Prereq: Not open to students with credit for 600.
5225 Period Styles for Production  U  G  3
An exploration of period styles from ancient to contemporary; emphasis on architecture, clothing, furniture, jewelry, textiles, and decorative objects.
5241 Topics in Sound Technology  U  G  3
An exploration of topics on theatrical sound including audio system form and function, live mix, aesthetics of sound, audio engineering and theatrical sound design.
Prereq: 5241 or 5212. Repeatable to a maximum of 9 cr hrs.
5305 Painting and Drawing for Theatre  U  G  3
An introduction to drawing and painting techniques using both physical and digital media; exploration of methods, media, concepts; emphasis on rendering for theatre design.
5310 Fundamentals of Media Design  U  G  3
A foundational introduction to the skills, tools, best practices, collaborative processes, and theories for media and projection design in a live performance production environment.
Prereq: 2211, or permission of instructor.
444 Theatre

5321 Film/Video Production I
Basics of film/video production through lectures, analysis, and projects. Camera, sound, lighting, and editing techniques are practiced in collaborative and individual settings. Prereq: Permission of instructor. Not open to students with credit for 634.

5322 The Art of Editing
Exploration of post-production techniques from editorial concepts to outputting video. Students will expand their knowledge of the editorial process and their analytical skills. Prereq: 5321 and permission of instructor. Not open to students with credit for 633.

5323 Film/Video Production II
Intermediate film/video analysis and production through research and project assignments with camera, sound, lighting, and editing techniques. Prereq: 5321, or permission of instructor. Repeatable to a maximum of 9 cr hrs.

5325 The Film Director's Voice
This advanced-level course offers students an understanding of the fundamentals of directing narrative film, with an emphasis on the director's personal voice and vision. It considers responsibilities and techniques across all stages of production, from early development through the completion of postproduction, as well as an introduction to promoting your finished project. Prereq: 4381 and 5323, or permission of instructor.

5331 Screenwriting
Exploration of creative script-writing for video/cinema; development of short or feature length scripts. Prereq: Permission of instructor. Not open to students with credit for 636.

5341 Studies in the Documentary
Exploration of the conceptual, aesthetic, critical, social, ethical, and practical issues in the practice of documentary and reality production of cinema and video works. Prereq: Permission of instructor. Not open to students with credit for 777.

5401 Engineering for Entertainment
An introduction to the technology and engineering behind theatre and entertainment events; focus on motion technology including rigging, tracking and automated systems.

5403 Scene Painting
An introduction to techniques used in scene painting for the theatre; rendering textures and form on large scale surfaces, both fabric and board; trompe l'oeil and reproductions. Prereq: Enrollment in the MFA-Theatre program, or permission of instructor.

5411 Scenic Design I
Presentation of scenic design in three dimensional form; emphasis on designing for non-proscenium production. Prereq: Not open to students with credit for 643.

5412 Scenic Design II
Presentation of multiple-setting, scenic design in three dimensional models, renderings and sketches; emphasis on story boarding to show clear progression of scenic changes. Prereq: Not open to students with credit for 644.

5501 Costume Technology
This course is a costume construction course intended to acquaint the student with intermediate skills in creating theatrical clothing. Basic understanding of hand and machine sewing is expected. Demonstrations of fabric dying in addition to an introduction to the creation of craft accessories are included.

5502 Costume Draping & Patternning
This is a practical course designed to allow the student to learn to manipulate fabric over a form to create a pattern. Basic contemporary forms are emphasized, with final projects focusing on 20th century period garments.

5503 Advanced Costume Technology
This course emphasizes advanced sewing skills: particularly those involved with men's and women's tailored garments.

5511 Costume Design I
Exploration of methods and techniques of design as applies to costumes.

5512 Costume Design II
This course is an in depth study of advanced projects in Costume Design with an emphasis on musical theatre.

5603 Lighting Technology
An introduction to and examination of the craft of theatre technology, with an emphasis on technical projects as associated with the responsibilities of a production electrician.

5611 Lighting Design
A study of light as a design element for theatrical performance; analysis and preparation of designs for realized and theoretical theatre applications. Prereq: Not open to students with credit for 625.

5720 Dramaturgy: Theory and Practice
Survey of history, theory, and practical exercises in production dramaturgy, the art of interrogating plays in production.

5731 London Theatre and Culture
This course prepares students for the London Theatre Program study abroad experience at Ohio State. Repeatable to a maximum of 6 ch hrs.

5741 Czech Theatre and Culture
An introduction to the language, history, and culture of the Czech Republic designed to prepare students for an international experience. The course is a combination of instructor led lectures, discussions and presentations including a wide variety of Czech visual materials, and is a prerequisite for students participating in the Prague Theatre Study Tour Program. Prereq: 2100 (100), and acceptance to the Prague Theatre Study Tour, and permission of instructor. Repeatable to a maximum of 9 or cr hrs.

5751 Performance and Culture in Cuba
This course explores culture in Cuba, past and present, with emphasis on the performing and visual arts. We consider the important historical, economic, and political contexts that inform Cuban arts today.

5771.01 The History and Practice of Devising Theatre
Advanced study on the history of creating new performance works through the collaborative, collective artistic process of devising.

5771.02 Theatre for Social Change
Advanced study of theatre and performance strategies used for social change and community engagement which includes Theatre for Development, and Augusto Boal's theory and practice.

5771.03 Out There Alone: The History of Solo Performance
Advanced study of the ubiquitous solo performer that considers the classical Greek rhapsodies, to Chautauqua, to contemporary solo artists, many of whom create new works.

5771.04 American Voices
Advanced study of a focused theatre history topic such as African American, Latino/a, Asian American, Native American, women playwrights, and gay and lesbian theatre.

5771.05 All Singing, All Dancing: The History of Musical Theatre
Advanced study on the history and contemporary practice of the art form of musical theatre including an emphasis on the American Rock Musical.

5771.06 International Theatre and Performance
Advanced study of a focused international theatre history topic such as African, Spanish and Portuguese, Asian theatre, theatre masks, puppets, Irish diaspora.

5771.09 Performance in Media: Film, Video and Digital
Advanced study on the history and contemporary practice of technology and media used in contemporary live performance, such as moving lights, projections, film, video and digital animation.

5771.10 Strutting and Fretting Upon the Stage: 400 Years of Shakespeare in Production
Explores the history of Shakespeare's plays in production over the last four centuries. Students will seek to understand how his plays reflect the historical moments in which they are interpreted. Students will research and present on a specific production.

5798.01 Study Tour: Domestic
Group domestic travel experience. Specific content, location, prerequisites, and semester of offering vary. Prereq: Permission of instructor. Repeatable to a maximum of 36 cr hrs or 4 completions.

5798.02 Study Tour: International
Group foreign travel experience. Specific content, location, prerequisites, and semester of offering vary. Prereq: Permission of instructor. Repeatable to a maximum of 36 cr hrs or 4 completions.

5831 Mime
Introduction to Mime: This course will focus on Etienne Decroux and Marcel Marceau's techniques and styles. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs or 2 completions.

5835 Special Topics in Movement for the Stage
Intensive study of a problem related to movement of the actor for the purpose of developing specific principles and practices. Prereq: 3831 (2831), or permission of instructor. Repeatable to a maximum of 9 cr hrs.

5899 Workshops
Intensive study of a problem common to the participants for the purpose of developing principles and practices relating to it. Prereq: Permission of instructor. Repeatable to a maximum of 36 cr hrs or 4 completions.

5911 New Works Lab
New writers experiment with a variety of contemporary techniques to write, act, direct and improv short plays, oral histories, video and solo works. Repeatable to a maximum of 6 cr hrs or 2 completions.
5921 Performing and Teaching Shakespeare for the Actor: A Toolkit
An exploration of methods for interpreting, performing, and teaching Shakespeare. Emphasis on Stand Up for Shakespeare technique, the work of John Basil, John Barton, and the Lessac voice system. Students will develop exercises and lessons intended for K-12 students.
Prereq: 2831 (383), or permission of instructor.

5922S Shakespeare and Autism
An ensemble-based interdisciplinary service-learning course where students are trained in the Hunter Heartbeat Method intervention and then conduct interactive workshops with children on the autism spectrum.
Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs.

5961 Playwriting
Students will write 10-minute plays as exploratory exercises, analyze contemporary plays to deepen familiarity with the theatrical form, and, as a final project, write a one-act play which will receive a staged reading. Seminar and Workshop.
Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs.

5971 Adaptation
In various guises (translation, revision, revival, recycling, burlesque, travesty, parody, adaptation, theft) the stage has long been a site of mythological and textual reiteration. The course examines the ways in which a select group of texts have found their ways onto the English-speaking stage again and again. The course contextualizes adaptation as a theatrical practice elemental to cultures.
Prereq: Permission of instructor.

6194 Group Studies
Group Studies.
Repeatable to a maximum of 12 cr hrs or 4 completions.

6210 Studio Praxis
This is a topics-based, design/scenography class that challenges students to share and build on their experience both within and outside their design disciplines. All MFA design students will participate in the studio each fall semester. Our goal is for you to make work that quickly and creatively respond to the ideas and scripts we work on which hang together under a different theme each year.
Prereq: Enrollment in the MFA-Theatre program, or permission of instructor. Repeatable to a maximum of 9 cr hrs.

6431 Stage Properties
Exploration of scenic/design technology topics including stage properties, advanced scene painting, surface treatments.
Prereq: Not open to students with credit for 646.

6651 Digital and Physical Lighting
Introduction to basic principles and concepts of lighting as used in theatre and computer graphics. Working in collaborative teams, students develop and execute installation schemes.
Prereq: Permission of instructor. Not open to students with credit for 754. Cross-listed in ArtsCo.

6701 Research Methods
Introduction to research methods, tools, and resources in live theatre and recorded performance, and directed research in student's area of focus.
Prereq: Not open to students with credit for 801. Repeatable to a maximum of 4 cr hrs.

6702 Theatre Pedagogy
In this course, we will delve into teaching our discipline on the college level. We will explore best practices, strategies, techniques, and key concerns in our field. We will develop teaching philosophies and portfolios to aid on the job market, but more importantly, we will demonstrably improve our ability to impact our students' lives.

6811 Advanced Acting Studio I
A graduate acting class focused on exploring basic realistic acting techniques.
Prereq: Not open to students with credit for 780.

6812 Advanced Acting Studio II
A graduate acting class focused on Shakespeare and period styles.
Prereq: Not open to students with credit for 781.

6813 Advanced Acting Studio III
A graduate acting class focused on contemporary non-realistic acting and acting for the camera.
Prereq: Not open to students with credit for 782.

6821 Foundational Skills in Voice
A graduate course in voice production for the theatre.
Prereq: Permission of instructor. Not open to students with credit for 786.

6831 Mime and Stage Combat
Focus on Etienne Decroux and Marcel Marceau's techniques and styles and include techniques of Stage Combat.
Prereq: Permission of instructor. Not open to students with credit for 685 and 687.

6999 Research in Theatre: Thesis
Research for thesis purposes only.
Repeatable to a maximum of 16 cr hrs or 4 completions. This course is graded S/U.

7000.03 Practicum: Video
Individual theatrical performance and production activities at an advanced level under faculty supervision.
Prereq: Permission of instructor. Repeatable to a maximum of 32 cr hrs or 8 completions.

7000.04 Practicum: Stage Design
Individual theatrical performance and production activities at an advanced level under faculty supervision.
Prereq: Permission of instructor. Repeatable to a maximum of 32 cr hrs or 8 completions.

7000.05 Practicum: Costuming & Makeup
Individual theatrical performance and production activities at an advanced level under faculty supervision.
Prereq: Permission of instructor. Repeatable to a maximum of 32 cr hrs or 8 completions.

7000.06 Practicum: Lighting
Individual theatrical performance and production activities at an advanced level under faculty supervision.
Prereq: Permission of instructor. Repeatable to a maximum of 32 cr hrs or 8 completions.

7000.07 Practicum: Dramaturgy
Individual theatrical performance and production activities at an advanced level under faculty supervision.
Prereq: Permission of instructor. Repeatable to a maximum of 32 cr hrs or 8 completions.

7000.08 Practicum: Acting
Individual theatrical performance and production activities at an advanced level under faculty supervision.
Prereq: Permission of instructor by audition. Repeatable to a maximum of 32 cr hrs or 8 completions.

7215 TRI Special Collections Research
Advanced study of primary research materials accessed in the Special Collections: Jerome Lawrence and Robert E. Lee Theatre Research Institute Design archives.

7311 Advanced Moving Image Art
Exploration of sketchbook approach to research and development of creative cinematic/video projects.
Prereq: Permission of instructor. Not open to students with credit for 813.

7413 Advanced Scene Design
Advanced exploration of scene design for Broadway style musicals and Operas; emphasis on conceptual development, utilizing scale, large financial and production resources, fluid transitions and the expanded production demands of these forms.

7513 Advanced Costume Design
Advanced exploration of costume design for high concept performance pieces in opera, dance and theatre, hands-on design assignments, and preparation of theoretical designs.

7613 Advanced Lighting Design
Advanced topics in lighting design, including music-based performance, study of lighting designers and the art and craft of design, hands-on design assignments, and preparation of theoretical designs.

7701 Greek, Roman and Medieval Theatre and Performance:
Advanced study and directed research in Greek, Roman, Medieval performance texts, criticism and history.

7702 Early Modern to the Enlightenment: Theatre
Advanced study and directed research in early modern to Enlightenment theatre, performance, theory and criticism.

7703 Mass Entertainment, Modernism and the Rise of Realism
Advanced study of popular entertainment in the mid to late 19th century, the rise of realism, performance, theory and criticism.

7704 Contemporary Theatre and Performance:
Advanced study of contemporary performance with particular focus on the Wexner Center for the Arts season, including New Works and New Media, theory and criticism.
446 Theatre

7710 Method: Historiography  G  3
In this course, we will explore the ways theatre and performance history have been (and could be) written. Attention will be paid to the roles of evidence, embodiment, and narrative. Throughout we will ask the question: how can we write a history of an evanescent art? To what end?

7720 Method: Performance Studies  G  3
Performance Studies has been described as a marriage of Theater and Anthropology, yet it is both more and less than those two disciplines. We will read foundational texts by its major figures, as well as familiarize ourselves with its newer voices. Students will create a practical project that allows them to apply the methodologies we study, including participant-observation ethnography.

7730 Method: Practice As Research  G  3
In this course, we will delve into the method of practice as research as it pertains to the field of theatre studies. We will read key texts in the field, grapple with approaches, and undertake projects that prioritize practice as research acuity.

7821 Advanced Dialects  G  3
Dialect analysis and acquisition for the theatre. Prereq: Not open to students with credit for 781 and 887.

7831 Advanced Movement  G  3
Fundamentals of movement for actors: Studies in how the body (the actor's instrument) works and how the body moves. Prereq: Not open to students with credit for 781 and 887.

7832 Viewpoints and Suzuki Physical Acting  G  3
Viewpoints training: Method of improvisation that builds ensembles, while strengthening acting, directing and choreography. Suzuki, a martial arts style of physical training, will be incorporated. Prereq: Not open to students with credit for 773 and 887.

7899.02 New Media and Performance  G  2 - 4
Special Topics Seminar in New Media and Performance. Repeatable to a maximum of 32 cr hrs or 8 completions.

7899.03 Dramatic Literature  G  2 - 4
Special Topics Seminar in Dramatic Literature. Repeatable to a maximum of 32 cr hrs or 8 completions.

7899.04 Performance Studies  G  2 - 4
Special Topics Seminar in Performance Studies. Repeatable to a maximum of 32 cr hrs or 8 completions.

7899.05 Physical and Devised Theatre  G  2 - 4
Special Topics Seminar in Physical and Devised Theatre. Repeatable to a maximum of 32 cr hrs or 8 completions.

7899.07 Special Topics: Theatre History  G  2 - 4
Special Topics Seminar in Theatre History. Repeatable to a maximum of 32 cr hrs or 8 completions.

7911 Composition  G  3
Advanced instruction in learning multiple ways of creating new performance work. Prereq: Not open to students with credit for 888.

8000.02 Advanced Studies: Sound  G  1 - 5
Advanced Studies in Sound. Prereq: Permission of instructor. Repeatable to a maximum of 32 cr hrs or 8 completions.

8000.03 Advanced Studies: Video  G  1 - 5
Advanced Studies in Video. Prereq: Permission of instructor. Repeatable to a maximum of 32 cr hrs or 8 completions.

8000.04 Advanced Studies: Stage Design  G  1 - 5
Advanced Studies in Stage Design. Prereq: Permission of instructor. Repeatable to a maximum of 32 cr hrs or 8 completions.

8000.05 Advanced Studies: Costuming & Makeup  G  1 - 5
Advanced Studies in Costuming and Makeup. Prereq: Permission of Instructor. Repeatable to a maximum of 32 cr hrs or 8 completions.

8000.06 Advanced Studies: Lighting  G  1 - 5
Advanced Studies in Lighting. Prereq: Permission of instructor. Repeatable to a maximum of 32 cr hrs or 8 completions.

8000.07 Advanced Studies: Dramaturgy  G  1 - 5
Advanced Studies in Dramaturgy. Prereq: Permission of instructor. Repeatable to a maximum of 32 cr hrs or 8 completions.

8000.08 Advanced Studies: Acting  G  1 - 5
Advanced Studies in Acting. Prereq: Permission of instructor. Repeatable to a maximum of 32 cr hrs or 8 completions.

8000.09 Advanced Studies: General  G  1 - 5
General. Prereq: Permission of instructor. Repeatable to a maximum of 32 cr hrs or 8 completions.

8000.17 Advanced Studies: Criticism  G  1 - 5
Advanced Studies in Criticism. Prereq: Permission of instructor. Repeatable to a maximum of 32 cr hrs or 8 completions.

8000.18 Advanced Studies: Directing  G  1 - 5
Advanced Studies in Directing. Prereq: Permission of instructor. Repeatable to a maximum of 32 cr hrs or 8 completions.

8000.27 Advanced Studies: Theory  G  1 - 5
Advanced Studies in Theory. Prereq: Permission of instructor. Repeatable to a maximum of 32 cr hrs or 8 completions.

8000.37 Advanced Studies: History  G  1 - 5
Advanced Studies in History. Prereq: Permission of instructor. Repeatable to a maximum of 32 cr hrs or 8 completions.

8000.46 Advanced Studies: Playwriting  G  1 - 5
Advanced Studies in Playwriting. Prereq: Permission of instructor. Repeatable to a maximum of 32 cr hrs or 8 completions.

8000.47 Advanced Studies: Dramatic Literature  G  1 - 5
Advanced Studies in Dramatic Literature. Prereq: Permission of instructor. Repeatable to a maximum of 32 cr hrs or 8 completions.

8193 Individual Studies  G  1 - 3
Conference, library, and laboratory work. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 4 completions. This course is graded S/U.

8621 Advanced Topics in Lighting Technology  G  2 - 4
Practical application of theories and techniques of lighting technology, with an emphasis on moving (or automated) lighting equipment, data, and control systems. Repeatable to a maximum of 12 cr hrs or 3 completions.

8700.01 Candidacy Exam Preparation: Area of Specialization  G  1 - 4
Preparation for PhD candidacy examination in the student's area of specialization to be undertaken in tutorial with their faculty advisor.

8700.02 Candidacy Exam Preparation: Cognate Area 1  G  1 - 4
Preparation for PhD candidacy examination in the student's area of specialization to be undertaken in tutorial with their faculty advisor.

8700.03 Candidacy Exam Preparation: Cognate Area II  G  1 - 4
Preparation for PhD candidacy examination in the student's Cognate Area II to be undertaken in tutorial with their faculty advisor.

8798.02 Study Tour: International  G  1 - 12
Group international travel experience. Specific content, location, prerequisites, and semester of offering vary. Prereq: Permission of instructor. Repeatable to a maximum of 36 cr hrs or 4 completions.

8811 Advanced Acting Studio IV  G  3
A Graduate acting class focused on developing a professional Showcase. Prereq: Not open to students with credit for 982.

8911 Devising: Techniques of Creating New Work  G  3
Laboratory in performer-created works with a director/choreographer. Creation of solo and group works from multiple sources, giving equal value to text, action and movement. Prereq: Not open to students with credit for 987.01.

8912 Solo Projects  G  3
Laboratory in solo performer-created works. Repeatable to a maximum of 27 cr hrs.

8921 Outreach and Engagement  G  3
Exploration of the collaborative outreach and engagement process in the development of an original ensemble creation which will emphasize community themes. Repeatable to a maximum of 9 cr hrs.

8990 Directed Teaching Experience in Theatre  G  1 - 3
Designed to aid the prospective teacher of theatre in the development of essential teaching skills in a variety of settings. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions.

8995 Proseminar  G  1 - 5
Reading, directed study, and/or projects in theatre history, criticism, literature, acting, directing, and/or design. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs or 9 completions. This course is graded S/U.

8999 Research in Theatre: Dissertation  G  1 - 3
Research for dissertation purposes only. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs or 9 completions. This course is graded S/U.

Translational Data Analytics
Translational Data Analytics  447

5401  Data Analytics Foundations I  U  G  3
The successful working professional must be able to extract useful information from data to address work-related challenges and make data-driven decisions under uncertainty. Proficiency in identifying, sourcing, manipulating and interpreting data is key. This is the first of a two course sequence focusing on programming and analysis in R, taken in parallel with Big Data Computing Foundations.
Prereq: Enrollment in the Translational Data Analytics program.

5402  Data Analytics Foundations II  U  G  3
This is the second part of a two-semester sequence focusing on programming and data analysis using R. Taken along with the Big Data Computing Foundations sequence on CS methods for data science. The course focuses on more advanced R such as distribution theory via simulation methods, statistical modeling: A/B testing, ANOVA, multiple linear regression, logistic regression, multivariate analysis.
Prereq: 5401, 5621, and enrollment in data analytics major.

5621  Big Data Computing Foundations I  U  G  3
Professionals must be able to locate, scrape, ingest and clean data sources to produce useful information for exploration and visualization to address work-related challenges. Course focus is on programming in Javascript and Python and tools like Hadoop and Scala. This two-semester sequence is to be taken in parallel with a two-semester sequence on fundamental statistical data analytic methods.
Prereq: Enrollment in the Translational Data Analytics program.

5622  Big Data Computing Foundations II  U  G  3
Working professionals must be able to locate and scrape data sources, create workflows that ingest and clean data, extract useful information for exploration and visualization and use that information to address work-related challenges. Enrollees gain proficiency in identifying, sourcing, manipulating, and interpreting data. Second course in a two-semester sequence focusing on the Python and Spark.
Prereq: 5621, and enrollment in the Translational Data Analytics program.

5625  Seminar in Data Governance  U  G  1
Demonstrate the need for data governance. Emphasize the need to generate trust in data assets in typical projects and enterprises. Identify elements of good data governance. Discuss privacy and security in the context of data governance. Enumerate the advantages of robust and principled governance through the use of case studies.
Prereq: Enrollment in the Translational Data Analytics program.

5626  Seminar in Research Methods  U  G  1
This course will provide a high-level overview of general research methods that are common across many disciplines. Topics covered will range from formulating a research question to conducting specific analytical methodologies to writing/presenting results. Course enrollment restricted to graduate students enrolled in MTD program.
Prereq: 5401, 5621, and 5625.

Turkish

1101  Elementary Turkish I  U  4
Introduction to Turkish; development of listening, reading, speaking, and writing skills.
Prereq: Not open to native speakers through regular enrollment, or EM credit. This course is available for EM credit. GE for lang.

1102  Elementary Turkish II  U  4
Further development of listening, writing, speaking, and reading skills; reading of simplified Turkish texts. Not open to native speakers through regular enrollment or EM credit.
Prereq: 1101. Not open to students with credit for 102. This course is available for EM credit. GE for lang course.

1103  Intermediate Turkish I  U  4
Reading of Turkish short stories and poems with attention to literary and cultural appreciation; development of basic language skills. Not open to native speakers through regular enrollment or EM credit.
Prereq: 1102. This course is available for EM credit. GE for lang course.

2101  Intermediate Turkish II  U  4
Extensive reading from literary texts, with practice in conversation and composition. Not open to native speakers of this language.
Prereq: 1103. Not open to students with credit for 201.

2102  Intermediate Turkish III  U  4
The study of nineteenth and twentieth-century texts, with advanced composition and translation.
Prereq: 2101. Not open to students with credit for 202.

2193  Individual Studies  U  1 - 5
Individual studies.
Prereq: Permission of instructor or department. Repeatable to a maximum of 10 cr hrs or 5 completions. This course is graded S/U.

2194  Group Studies  U  1 - 5
Group Studies.
Prereq: Permission of instructor or department. Repeatable to a maximum of 15 cr hrs or 5 completions.

Urology

4998  Urology Undergraduate Research Course  U  ½ - 3
An independent-study course in which pre-medical undergraduate students have the opportunity to assist in the Department of Urology’s research projects. Students will be given the opportunity to learn the research process from start to finish. Students will need to receive a signature to enroll in this course. Not open to students under 18 years of age.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 8 completions. This course is graded S/U.

Uzbek

1101  Elementary Uzbek I  U  4
Introduction to Uzbek language; development of listening, reading, speaking and writing skills.
Prereq: Not available to native speakers. This course is available for EM credit. GE for lang course.

2241  Beyond Harem and Belly Dancers: Turkish Culture  U  3
An introduction to Turkish culture through reading of literature and criticism, and listening and viewing of films, slides, and performances arranged for the class.

2701  Mystics, Sultans, Prisoners & Dreamers: Turkish Literature in Translation  U  3
A study of Turkish literature and the history of its discourses, genres, and styles.

3350  Contemporary Issues in Turkey  U  3
This course provides an introduction to contemporary issues in Turkey. Our understanding of current events will be grounded in deep historical, social, and geographic analyses, informed by both local and global dynamics. Most of the class focuses on political, economic, and social issues to help us contextualize current events and issues.

4999H  Honors Research  U  1 - 3
A program of research for individual students which includes individual conferences and culminates in an honors thesis or oral defense.
Prereq: Approved candidacy for graduation with distinction, which includes faculty adviser and ASC Honors Committee approval of project. A minimum 3.5 p/h ratio in the field of distinction, Sr standing, and CPHR commensurate with honors program membership. Repeatable to a maximum of 10 cr hrs or 5 completions. This course is graded S/U.

5193  Individual Studies  U  G  1 - 10
Individual Studies.
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs or 5 completions. This course is graded S/U.

5194  Group Studies  U  G  1 - 10
Group studies.
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs or 5 completions.

5377  Turkish Theatre, Music, & Dance  U  3
Cross-cultural, multidisciplinary exploration of Turkish theatre, music, and dance in Anatolian folk traditions, classical Ottoman works, 20th Century movements, and those of the present day. Students address theoretical questions of Performance Studies with guided research, historical and ethnographic texts, and performance workshops.
Prereq: Jr, Sr, or Grad standing; or permission of instructor.

7193  Independent Study  G  1 - 10
Content varies.
Repeatable to a maximum of 20 cr hrs or 10 completions. This course is graded S/U.

Introduction to Uzbek language; development of listening, reading, speaking and writing skills.
Prereq: Not available to native speakers. This course is available for EM credit. GE for lang course.
Continued study of Uzbek Language, with appropriate cultural background; further development of listening, reading, speaking, and writing skills. Not open to native speakers. Prereq: 1101. This course is available for EM credit. GE for lang course.

Continued study of Uzbek Language, with appropriate cultural background; further development of listening, reading, speaking, and writing skills. Not open to native speakers. Prereq: 1102. This course is available for EM credit. GE for lang course.

Extensive reading from literary texts, with practice in conversation and composition. Not open to native speakers. Prereq: 1103.

Continued reading from literary texts, with further practice in conversation, composition, and translation. Not open to native speakers. Prereq: 2101.

This course aims: to increase fluency in oral expression; develop skills in listening, reading and writing; extend knowledge of literary Uzbek language; and enable research in Uzbek. Course will use four skills approach as well as communicative. Using authentic language materials (newspapers, journals, TV programs) will be emphasized. Prereq: 2102

Veterinary Biosciences

6640 Fundamentals of Oncology
G V 4
Oriented towards graduate students in cancer-related programs, consisting of a series of lectures covering a variety of aspects of experimental oncology. Cross-listed in Pathol.

7193.01 Individual Studies in Veterinary Biosciences
G V 1 - 8
Laboratory, library, conference, and reports concerning animal disease problems. This course is to be used by Masters students for research experiences and for Doctoral students prior to candidacy. Repeatable to a maximum of 60 cr hrs or 60 completions. This course is graded S/U.

7193.02 Individual Studies in Veterinary Biosciences
G V 1 - 2
Laboratory, library, conference, and reports concerning animal disease problems. The faculty and student agree on a course project suitable for a letter grade. Prereq: Grad or Prof standing in Veterinary Medicine program, and permission of instructor. Not open to students with credit for 696. Repeatable to a maximum of 5 cr hrs.

7194.01 Group Studies in Veterinary Biosciences
G V 1
Group studies course in topic areas of veterinary biosciences. Prereq: Grad standing, or standing in VetMed program, or DVM, or equiv. This course is graded S/U.

7194.02 Group Studies in Veterinary Biosciences
G V 1 - 3
Group studies course in topic areas of veterinary biosciences. Prereq: Grad standing, or standing in Veterinary Medicine program, or DVM, or equiv. Repeatable to a maximum of 15 cr hrs.

7600 Animal Models of Disease
G 2
This course seeks to optimize translational modelling through selection of the most appropriate animal model for preclinical therapeutic evaluation.

7700 Functional Neuroanatomy
V 2
Structure and function of the Central Nervous System (CNS) studied through discussion and dissection with emphasis on three-dimensional relationships of selected brain and spinal cord regions. Prereq: VMColl 603. Not open to students with credit for 700.

7710.14 Applied Veterinary Medicine: Applied Pathology
V 2
Students will perform necropsies of the major domestic species in the applied pathology rotation. The will learn to recognize and describe common gross pathologic lesions and become familiar with the role of histopathology in assessment of necropsy a. Prereq: 4th yr standing in Veterinary Medicine Program. Not open to students with credit for VetClin 710.14. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

7710.50 Applied Veterinary Medicine: Clinical Pathology
V 2
Clinical experience in daily review of cytologies and blood smears from clinical cases using a multiheaded microscope. Data from serum biochemical profiles and ancillary tests also will be reviewed. Teaching sets are available for additional review. Prereq: 4th yr standing in Veterinary Medicine Program. Not open to students with credit for 724. This course is graded S/U.

7711 Basic Macroscopic Pathology
G V 1
Basic process of identifying gross lesions in domestic animals and some exotic species. Prereq: Not open to students with credit for 711.

7712 Applied Veterinary Clinical Pathology
V %
Designed to review how to evaluate cytology samples from various body systems using a videomicroscope and projected images. Prereq: VetMed 6616 (618). Not open to students with credit for 710.

7720 Applied Histopathology
G V 2
Interpret histological tissue in actual case material. These changes will be interpreted in the context of clinical history and gross post-morten findings in order to reconstruct the disease progression. Prereq: VMColl 6550.02 (550.02) and 6530 (530), or permission of instructor. Not open to students with credit for 719 of 720.

7741 Molecular Virology and Pathogenesis of Viruses
G V 5
An integrated study of the molecular mechanisms of virus replication and host-virus relationships that control virus pathogenesis or use as a therapeutic agent. Prereq: Grad or Prof standing in Veterinary Medicine program, or permission of instructor. Not open to students with credit for 741. Cross-listed in MolGen and MVInf.

7777 Veterinary Plant Toxicology
V 1
To familiarize the veterinary student with toxic plants and their diagnosis and treatment of toxicity. Prereq: Prof standing in Veterinary Medicine program, or permission of instructor. Not open to students with credit for 777.

7790 Electrocardiography
G V 2
Genesis of components of the ECG. ECG changes indicating: disturbance in rhythm, chamber enlargement, abnormal AV conduction, abnormal inter/infra-ventricular conduction, myocardial injury, electrolyte disturbance, drug toxicity. Prereq: grad or professional standing in Veterinary Medicine program; or permission of instructor. Not open to students with credit for 790.

7791 Loops
V 2
Physiological origin of heart sounds, murmurs, pressure pulses, and pressure-volume loops in health and disease. Prereq: 2nd or 3rd year standing for Veterinary Professional students. Not open to students with credit for 791.

7800 Canine Surgical Anatomy
V 2
Detailed study of regional anatomy of the thoracic and pelvic limbs as it relates to selected surgical approaches to the limb and joints. Prereq: VMColl 520, and professional standing in Veterinary Medicine program; or permission of instructor. Not open to students with credit for 693. This course is graded S/U.

7801 Advanced Feline Veterinary Anatomy
V 2
Detailed study of feline body systems based on a regional anatomical approach and small group presentation. Prereq: VMColl 520, and professional standing in Veterinary Medicine program; or permission of instructor. Not open to students with credit for 693. This course is graded S/U.

7802 International Veterinary Medicine Experience
V 2
The class is organized into two parts. The first portion occurs during the fall and spring semesters, meet every other Wednesday to prepare the students for the trip. The second portion is a ten-day field trip to veterinary colleges in Asia, Europe, South America, and Africa during winter and spring breaks, or at the end of the semester. This course is progress graded (S/U).

7852 Hematology Case Discussion
V ½
A discussion of laboratory data from clinical cases in an interactive small group setting. The focus is on hematology. Weekly case discussions require student participation. Prereq: VMColl 6618 (618), and 3rd-year standing in Veterinary Medicine Program. Not open to students with credit for 852. This course is graded S/U.

7900 Data Management for Researchers
G 1
Covers all aspects of research data management best practices, as defined by funding agency requirements. Topics include planning for data organization, documentation, preservation, and sharing in an increasingly complex digital environment.

8739 Specialty Training in Clinical Pathology
G 1 - 10
In-depth study of common laboratory tests, specialized and ancillary laboratory tests, principles of laboratory testing, and quality assurance with an emphasis on data analysis from clinical patients. Prereq: Grad or Dcct standing in VMColl, or equiv, or permission of instructor. Not open to students with credit for 739. Repeatable to a maximum of 50 cr hrs or 10 completions. This course is graded S/U.

8810 Advanced Systemic Pathology 1: Laboratory Animal Pathology
G 2
Lecture course covering the principle diseases of laboratory mice, rats, nonhuman primates, rabbits, guinea pigs, hamsters, gerbils, and fish as well as lower vertebrates and animals in zoological collections and wildlife species. Prereq: VMColl 6618 (618). Not open to students with credit for 810.

8811 Advanced Systemic Pathology 2
G 2
Advanced pathology covering the reproductive, endocrine, ophthalmic, and cardiovascular systems of domestic animals. Prereq: VetBio students in the Combined Pathology Residency/PhD program, or DVM students; or permission of team leader. Not open to students with credit for 811.
Veterinary Biosciences

8812 Advanced Systemic Pathology 3
Advanced pathology covering the respiratory, nervous, and musculoskeletal systems of domestic animals.
Prereq: DVM or equiv. Not open to students with credit for 812.

8813 Advanced Systemic Pathology IV 2
Advanced Pathology covering the hemic-lymphatic, hepatobiliary, digestive systems, and dermatopathology.
Prereq: Enrollment in DVM degree program, or equiv.

8814 Advanced Systemic Pathology 5 2
Advanced pathology covering the hemic-lymphatic system of domestic animals.
Prereq: VetBios students in the Combined Pathology Residency/PhD Program, or DVM students; or permission of team leader.

8815 Advanced Systemic Pathology VI 2
Advanced pathology covering the urinary system of domestic animals.
Prereq: VetBios students in the Combined Pathology Residency/PhD program, or DVM students; or permission of team leader.

8893.01 Applied Comparative Pathology 1 - 4
Advanced training in gross dissection and interpretation of gross lesions in animals.
Prereq: DVM degree or equiv. Not open to students with credit for 718. Repeatable to a maximum of 12 cr hrs or 3 completions. This course is graded S/U.

8893.02 Veterinary Surgical Pathology 2
Case-based from surgical biopsies from the Veterinary Medical Center. Students cut in biopsy material, interpret prepared slides, make a diagnosis and write reports under supervision of a faculty pathologist.
Prereq: Grad standing in Veterinary Medicine Program, and DVM degree, or equiv. Not open to students with credit for 815. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

8895.02 Seminars in Diagnostic Veterinary Pathology 2
Seminars correlating lesion interpretation, pathogenesis and clinical signs in veterinary cardio-, dermato-, gross, lab animal, large animal, neuro-, ophthalmic, surgical, and zoo pathology.
Prereq: Grad standing in Veterinary Medicine program, or permission of instructor. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

8895.03 Seminar in Veterinary Clinical Pathology 2
Designed to prepare clinical pathology residents for a career in clinical pathology through in-depth discussion of the principles and application of laboratory testing and quality assurance and interpretation of laboratory data.
Prereq: Grad or Doct standing in VMColl, or equiv, or permission of instructor. Not open to students with credit for 800.01. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

8895.04 Veterinary Histopathology Seminar 2
Weekly histopathology seminars to establish written and oral microscopic descriptive skills and correlate interpretation with pathogenesis.
Prereq: Grad standing or permission of instructor. Not open to students with credit for 800.02. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

8999 Research in Veterinary Biosciences 1 - 10
Research for dissertation purposes only.
Prereq: Grad standing in Veterinary Medicine program; or permission of instructor. Not open to students with max credit for 999. Repeatable to a maximum of 60 cr hrs or 60 completions. This course is graded S/U.

Veterinary Clinical Sciences

4998.02 Individual Studies in Veterinary Clinical Sciences, Undergraduate Research Project 1 - 8
A supervised critical investigation of some aspects of animal disease about which there is mutual curiosity of both the student and faculty. This course covers the research experiences of undergraduates students.
Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

7193.01 Independent Studies in Veterinary Clinical Sciences G V 1 - 8
A supervised critical investigation of some aspects of animal disease about which there is mutual curiosity of both students and faculty. This course covers research experiences of Masters students and Doctoral students prior to candidacy.
Prereq: Standing in Veterinary Medicine program, or Grad standing. Repeatable to a maximum of 60 cr hrs or 60 completions. This course is graded S/U.

7193.02 Individual Studies in Veterinary Clinical Sciences G V 1 - 2
A supervised critical investigation of some aspects of animal disease about which there is mutual curiosity of both students and faculty. The faculty and student agree on a course project suitable for a letter grade.
Prereq: Grad or Prof standing in Veterinary Medicine program, and permission of instructor. Repeatable to a maximum of 5 cr hrs.

7194.01 Group Studies in Veterinary Clinical Sciences G V 1 - 3
Group studies course in topic areas of veterinary clinical sciences.
Prereq: Grad standing in Veterinary Medicine program, or equiv. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

7194.02 Group Studies in Veterinary Clinical Sciences G V 1 - 3
Graded group studies course in topic areas of veterinary clinical sciences.
Prereq: Grad standing, DVM or equivalent, or veterinary medicine program standing.

7622 Advanced Equine Medical and Surgical Procedures V 1
A laboratory course designed to develop skills in ultrasound examination, proper use of diagnostic nerve blocks and intra-articular injections, and surgical procedures in the horse.
Prereq: 3rd yr standing in Veterinary Medicine program.

7700.99 Applied Veterinary Medicine: General Rotation V 1
Students participate in various clinical rotations to reinforce knowledge and clinical practice.
Prereq: 4th yr standing in Veterinary Medicine program. This course is graded S/U.

7710.01 Applied Veterinary Medicine: Community Practice V 2
Problem-solving and clinical skills taught by physical examination, diagnosis and treatment of client-owned animals. Disease prevention and client education are emphasized, such as nutrition, vaccinations, parasite control, dentistry, animal behavior.
Prereq: 4th yr standing in Veterinary Medicine program. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

7710.02 Applied Veterinary Medicine: Shelter Medicine V 2
This two week clinical elective provides 4th year vet. students an opportunity for hands on experience in veterinary shelter medicine in a privately funded, non-profit, managed admission shelter, the Capital Area Humane Society.
Prereq: 4th yr standing in Veterinary Medicine program. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

7710.03 Applied Veterinary Medicine: Small Animal Internal Medicine V 1 - 2
Patient diagnosis and management in small animal internal medicine service, including patient care responsibility, client communication, and interactions with all members of the patient care team. Students will build on and apply knowledge gained.
Prereq: 4th yr standing in Veterinary Medicine program. Repeatable to a maximum of 12 cr hrs or 6 completions. This course is graded S/U.

7710.04 Applied Veterinary Medicine: Small Animal Surgery - Soft Tissue V 2
Clinical experience in the management of surgical diseases of small animal patients. Students will be responsible for the preoperative, operative, and postoperative treatment for patients presented to the small animal surgery soft tissue service.
Prereq: 4th yr standing in Veterinary Medicine program. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

7710.05 Applied Veterinary Medicine: Small Animal Surgery - Orthopedics V 2
Clinical experience in the surgical management of orthopedic diseases of small animal patients. Students will be responsible for the preoperative, operative, and postoperative treatment for patients presented to the small animal surgery orthopedic service.
Prereq: 4th yr standing in Veterinary Medicine program. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

7710.06 Applied Veterinary Medicine: Farm Animal Medicine and Surgery V 2
Diagnosis, management, and prevention of medical and surgical diseases of farm animals.
Prereq: 4th yr standing in Veterinary Medicine program. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

7710.07 Applied Veterinary Medicine: Large Animal Ambulatory Services V 2
Provides students with experience working in a large animal clinic, including patient care and business management aspects. Provides instruction in production medicine and its role in modern agriculture.
Prereq: 4th yr standing in Veterinary Medicine program. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

7710.08 Applied Veterinary Medicine: Equine Medicine V 2
Application of the principles of diagnosis, treatment, and prevention of medical diseases of horses.
Prereq: 4th yr standing in Veterinary Medicine program. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

7710.09 Applied Veterinary Medicine: Equine Surgery V 2
Application of the principles of diagnosis, treatment, and prevention of surgical diseases of horses.
Prereq: 4th yr standing in Veterinary Medicine program. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

7710.10 Applied Veterinary Medicine: Equine Community Practice V 2
Application of the principles of diagnosis, treatment, and prevention of diseases of horses.
Prereq: 4th yr standing in Veterinary Medicine program. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

7710.11 Applied Veterinary Medicine: Equine Emergency and Critical Care Medicine V 2
Provides students supervised experience in hospital-based emergency and critical care experience with horses.
Prereq: 4th yr standing in Veterinary Medicine program. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.
Veterinary Clinical Sciences

7710.13 Applied Veterinary Medicine: Clinical Anesthesiology  V  2
Students will assess large and small animal patients for anesthesia, select proper anesthesia protocols, learn proper use of anesthetic equipment, and induce, maintain, monitor, and recover patients in a supervised hospital anesthesia practice.
Prereq: 4th yr standing in Veterinary Medicine program. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

7710.15 Applied Veterinary Medicine: Small Animal Critical Care  V  2
Evaluation, monitoring and management of small animal patients in the intensive care unit and interactions with all members of the patient care team. Students will build on and apply knowledge gained in the pre-clinical curriculum.
Prereq: 4th yr standing in Veterinary Medicine program. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

7710.16 Applied Veterinary Medicine: Small Animal Emergency  V  2
Evaluation and management of small animal patients presented to the emergency service and interactions with all members of the patient care team. Students will build on and apply knowledge gained in the pre-clinical curriculum.
Prereq: 4th yr standing in Veterinary Medicine program. Not open to students with credit for 710.11. Repeatable to a maximum of 12 hrs. This course is graded S/U.

7710.17 Applied Veterinary Medicine: Comparative Ophthalmology  V  2
Application of principles of diagnosis and treatment of diseases of the eye to animal patients, including dogs, cats, horses, and farm animals.
Prereq: 4th yr standing in Veterinary Medicine program. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

7710.18 Applied Veterinary Medicine: Dermatology  V  2
Patient diagnosis and management in the dermatology service, including patient care, client communication, and interactions with all members of the patient care team. Students will build on and apply knowledge gained in the pre-clinical curriculum.
Prereq: 4th yr standing in Veterinary Medicine program. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

7710.19 Applied Veterinary Medicine: Cardiology  V  2
Clinical instruction in diagnosis, treatment and prevention of cardiovascular diseases of animals, including patient care, client communication, and interactions with all members of the patient care team.
Prereq: 4th yr standing in Veterinary Medicine program. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

7710.20 Applied Veterinary Medicine: Small Animal Neurology  V  2
Patient diagnosis and management in the neurology service including patient care, client communication, and interactions with all members of the patient care team. Students will build on and apply knowledge gained in the pre-clinical curriculum.
Prereq: 4th yr standing in Veterinary Medicine program. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

7710.21 Applied Veterinary Medicine: Small Animal Oncology  V  2
Patient diagnosis and management in the oncology service, including patient care, cytology and imaging interpretation, client communication, and interactions with all members of the patient care team.
Prereq: 4th yr standing in Veterinary Medicine program. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

7710.22 Applied Veterinary Medicine: Theriogenology  V  2
Clinical experience with diagnosis and treatment of reproductive disorders of dogs, cats, cattle and horses, including assisted reproductive procedures.
Prereq: 4th yr standing in Veterinary Medicine program. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

7710.26 Surgical Oncology  V  2
Senior veterinary students will learn and understand a comprehensive approach to cancer management in small animals. They will learn the principles of surgical oncology, postoperative management, and follow-up care. This rotation is meant to strengthen and enhance their knowledge of surgical diseases, perioperative monitoring and care, and technical skills.
Prereq: 4th year standing in VettMed.

7710.50 Applied Veterinary Medicine: Diagnostic Imaging  V  2
Students will further develop their image interpretation skills. Emphasis on conventional radiography but alternate imaging modalities such as CT, MRI and nuclear medicine may be included. Students may customize their learning experience based on their area of interest (e.g. equine, small animal, food animal). Students are not expected to participate in the technical aspects of diagnostic imaging.
Prereq: 4th yr standing in Veterinary Medicine program. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

7710.51 Applied Veterinary Medicine: Ultrasonography  V  2
Clinical experience with diagnostic ultrasonography for veterinary students working under daily direction of the ultrasound technologist, faculty or resident in radiology.
Prereq: 4th yr standing in Veterinary Medicine program. This course is graded S/U.

7710.52 Applied Veterinary Medicine: Radiation Oncology  V  2
Clinical experience in radiation oncology for veterinary students working under the daily direction of technologists, residents and faculty in radiology.
Prereq: 4th yr standing in Veterinary Medicine program. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

7710.53 Applied Veterinary Medicine: Small Animal Rehabilitation and Sports Medicine  V  2
Clinical exposure to rehabilitation. Students will be responsible for patient care and selected treatment modalities of animals presented to the Rehabilitation and Sports Medicine Service.
Prereq: 4th yr standing in Veterinary Medicine program. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

7710.54 Applied Veterinary Medicine: Small Animal Behavior  V  2
Students will observe and participate in behavioral medicine appointments as well as gain clinical experience in behavior wellness and low stress handling. Students will learn to assess and diagnose behavior and to create treatment and management plans for both Behavioral Medicine and Community Practice patients.
Prereq: 4th yr standing in the Professional Veterinary Program. Repeatable to a maximum of 4 cr hrs. This course is graded S/U.

7710.57 Small Animal Clinical Nutrition  V  1
Patient diagnosis and management related to Clinical Nutrition, including patient care responsibility, client communication, and interactions with all members of the patient care team.
Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

7710.58 Applied Veterinary Medicine: Dentistry  V  2
This rotation will teach students how to do all aspects of General practice Dentistry. This course is graded S/U.

7711.01 Small Animal Internal Medicine: Advanced Veterinary Clinical Immunology  G  1
This course will provide an advanced understanding of the principles and mechanisms of the immune system and immune responses in the context of infection, metabolic disease and immunological disorders.
Prereq: Permission of instructor.

7711.02 Small Animal Internal Medicine: Geriatric Medicine  G  1
This course will provide in depth discussion of our current understanding of the pathology and pathophysiology of aging and its implications for patient health.
Prereq: Permission of instructor.

7711.03 Small Animal Internal Medicine: Hematology and Oncology  G  1
This course will provide in depth discussion of our current understanding of bone marrow biology and associated diseases, current understanding of coagulation and platelet function, and cover relevant topics in oncology.
Prereq: Permission of instructor.

7711.04 Small Animal Internal Medicine: Metabolic Disease  G  1
This course will provide in depth discussion of our current understanding of disorders affecting general and cellular metabolism, including vitamin/mineral/electrolyte disorders, and genetics of metabolic disorders.
Prereq: Permission of instructor.

7711.05 Small Animal Internal Medicine: Role of Microbes in Health and Disease  G  1
This course will provide in depth discussion of our current understanding of 1) how the gut microbiome aids in animal health; 2) how the gut microbiome is altered during various disease states; 3) techniques used to define the gut microbiome; and 4) evidence-based modulation of the gut microbiota in clinical patients.
Prereq: Permission of instructor.

7718 Clinical Problem Solving and Treatment in Small Animals I - Internal Medicine  V  2
Exposes the student to approximately 30 clinical cases likely to be encountered in internal medicine of sick dogs and cats using an interactive format with progressive disclosure of information to the students.
Prereq: 3rd yr standing in Veterinary Medicine program. Not open to students with credit for 718.

7719 Clinical Problem Solving and Treatment in Small Animals II - Medical Subspecialties  V  2
Problem-oriented course using case discussions to teach the diagnostic and therapeutic approach to the most common clinical problems in small animal internal medicine.
Prereq: 3rd yr standing in Veterinary Medicine program. Not open to students with credit for 719.

7720 Introduction to Small Animal Clinical Nutrition  V  1
Basic concepts and principles of veterinary clinical nutrition and application of these concepts and principles to the nutritional care of small animal patients.
Prereq: 3rd yr standing in Veterinary Medicine program. Not open to students with credit for 720.

7721 Dialysis Therapy  G  1
Introduction to principles and practice of dialysis and related therapies.
7722 Clinical Problems in Small Animal Cardiology V 1
Skills in physical examination, radiographic and electrocardiographic interpretation, and management of common cardiovascular diseases in a small group setting. Prereq: 3rd yr standing in Veterinary Medicine program. Not open to students with credit for 722.

7723 Emergency & Critical Care Volunteer Program V 1
Clinical exposure to emergency receiving and medical management of hospitalized patients in the intensive care unit through volunteer shifts with the emergency and critical care service and attendance at clinical teaching rounds. Prereq: 1st (second semester), 2nd, or 3rd yr standing in Veterinary Medicine program. Repeatable to a maximum of 2 or hrs. This course is graded S/U.

7724 Feline Medicine V 1
Survey of medical diseases unique to the cat and their management. Prereq: 3rd yr standing in Veterinary Medicine program. Not open to students with credit for 724. This course is graded S/U.

7727 Avian Medicine and Surgery V 2
An overview of all aspects of avian medicine including nutrition, behavior, captive management, diagnostic and therapeutic techniques, disease problems, anesthesia and surgery. Includes companion birds, wildlife, backyard poultry and zoo species. Prereq: 2nd or 3rd yr standing in Veterinary Medicine program. Not open to students with credit for 727.

7732 Equine Lameness and Gait Abnormalities V 1½
Acquaints students with conditions of the horse that produce gait abnormalities as the presenting clinical complaint. Prereq: 2nd or 3rd yr standing in Veterinary Medicine program. Not open to students with credit for 732.

7733 Advanced Equine Medicine V 2
Common medical problems in adult horses and foals using a problem-oriented, intensive approach. Prereq: 3rd yr standing in Veterinary Medicine program. Not open to students with credit for 733.

7737 Equine Intensive Care V 1
Students will be taught to critically evaluate, treat and monitor patients in the equine intensive care unit through supervised patient contact and weekly seminars. Prereq: 2nd yr standing in Veterinary Medicine program. Not open to students with credit for 737.

7738 Basic Equine Medicine V 2
Basic equine medicine and surgery, particularly as it applies to the pleasure horse population. Presented from the generalist's perspective and addressing problems most frequently encountered. Prereq: 2nd or 3rd yr standing in Veterinary Medicine program. Not open to students with credit for 738.

7743 Basic Exotic Animal Medicine - Small Mammals V 2
Provides a basic background for a new graduate veterinarian regarding exotic species commonly treated in a companion animal setting. The focus will be on mammalian species. Prereq: Grad or professional standing in Veterinary Medicine program. Not open to students with credit for 743.

7746 Cattle Diseases G V 4
Diagnosis and treatment of medical and surgical diseases of individual cattle. Prereq: 2nd or 3rd yr standing in Veterinary Medicine program, or Grad standing.

7746.02 Cattle Diseases II V 2
Builds upon concepts provided in CDE I. Like the 1st half of this course, basic organ system related diseases of cattle are covered in other courses. Prereq: 7746.01.

7747 Small Ruminant Medicine and Surgery V 2
Common medical, surgical, and management related problems in sheep, goats, and South American camels. Prereq: DVM or equiv, or 3rd yr standing in Veterinary Medicine program. Not open to students with credit for 747.

7748 Topics in Food Animal Medicine and Surgery G 1
This literature based course affords the student opportunities to review the recent food-animal literature and present their review. Faculty will facilitate discussion.

7749 Equine Ophthalmology V 1
Comprehensive problem-based discussions of equine ophthalmic cases, clinical patient examinations, and stall-side rounds, ophthalmic techniques laboratory and cadaver surgery laboratory. Prereq: VMColl 6612; 3rd year standing in Veterinary Medicine program. Not open to students with credit for 749.

7750 Veterinary Anesthesia and Analgesia Pharmacology G 2
Pharmacology of sedatives, anesthetics, and analgesics, pain mechanisms, and therapies as related to veterinary clinical patients.

7752 Advanced Veterinary Clinical Neurology V 1
Presentation and discussion of common neurological problems and diseases. Prereq: 6603, 3rd year standing in Veterinary Medicine program. This course is graded S/U.

7754 Veterinary Clinical Oncology V 2
Provides veterinary students with advanced knowledge and understanding of oncology, including cancer diagnosis, chemotherapy, and client communications. Prereq: Third-year standing in veterinary medicine program.

7762 Clinical Veterinary Ophthalmology V 1
A problem-based approach to differential diagnosis, final diagnosis, and treatment of ophthalmic diseases in large and small animals. Prereq: 3rd yr standing in Veterinary Medicine program. Not open to students with credit for 762. This course is graded S/U.

7768 Integrative Medicine V 1
Overview of integrative medicine, including discussion of the basic science behind complementary modalities as well as their clinical effectiveness. Research considerations also will be presented. Prereq: 1st (second semester), 2nd, 3rd, or 4th yr standing in Veterinary Medicine program. This course is graded S/U.

7771 Applied Veterinary Clinical Dermatology G V 1
Case-based problem-oriented studies of common dermatologic problems in dogs and cats. Prereq: 6606, and 3rd yr standing in Veterinary Medicine program or Grad standing; or permission of instructor.

7772 Equine Cardiology V 1
Clinical approach to the diagnosis and management of spontaneous cardiovascular diseases in the horse. Prereq: DVM or equiv or 3rd yr standing in Veterinary Medicine program. Not open to students with credit for 783.

7773 Large Animal Radiographic Interpretation V 2
A review and practice of radiographic anatomy and interpretative skills of large animal diagnostic images with emphasis on the musculoskeletal system. Prereq: 3rd yr standing in Veterinary Medicine program.

7774 Introduction to Alternate Imaging and Contrast Radiography V 1
Basics of contrast radiography and alternative imaging modalities (ultrasonography, computed tomography, magnetic resonance imaging, scintigraphy) and an overview of their use as diagnostic tools in veterinary medicine. Prereq: 1st yr (second semester) or 2nd yr standing in Veterinary Medicine program. Not open to students with credit for 778.

7775 Anesthesia Case Management V 1
Covers anesthetic management of veterinary patients for elective and emergency procedures. Prereq: Third-year standing in veterinary medicine program.

7776 Radiobiology for the Radiologist G 1
This course is intended to review the ACVR Radiobiology objective in preparation for the ACVR preliminary board examination.

7778 Puppy Kindergarten V 1
Participation in education of pet owners about behavior wellness and socialization of puppies. The course allows students to observe and influence the development of canine behavior. Prereq: 1st (second semester) or 2nd yr standing in Veterinary Medicine program. Not open to students with credit for 793. Repeatable to a maximum of 2 or hrs. This course is graded S/U.

7779 Equine Colic Team V 1
Diagnosis, treatment, and prevention of diseases of the equine gastrointestinal system. A practical course, in which the students are assigned on-call duty for emergency colic patients. Prereq: 2nd or 3rd yr standing in Veterinary Medicine program. Not open to students with credit for 796.03. Repeatable to a maximum of 2 or hrs. This course is graded S/U.

7780 Environmental Enrichment for Shelter Dogs V 1
Review the scientific literature on enrichment in shelter animals and discuss practical means of implementation. It will include discussion of means to identify and mitigate stress in shelter dogs to increase their adoptability and hands on involvement with implementing a behavioral enrichment program for dogs at the Franklin County Dog Shelter. Prereq: Standing in the Veterinary Professional curriculum. Repeatable to a maximum of 2 or hrs. This course is graded S/U.

7781 Top 20 Medical Conditions in Dogs V 2
This is a pilot course for third-year DVM student learners who are interested in small animal primary care practice employment and who wish to gain comfort with the ambiguity presented in managing typical cases in that setting. This course is graded S/U.

7781 Small Animal Theriogenology G V 1
Control of reproductive function in dogs and cats and how to diagnose and devise a treatment plan for infertility due to infectious and noninfectious causes. Prereq: 2nd or 3rd yr standing in Veterinary Medicine program, or Grad standing.
452 Veterinary Clinical Sciences

7793 Lectures in Equine Theriogenology G V 2
Focuses on the pathophysiology of common reproductive disorders and how to devise plans to treat common reproductive disorders in horses. Prereq: 2nd or 3rd yr standing in the Veterinary Medicine program or grad standing. Not open to students with credit for 791.01.

7794 Equine Theriogenology Laboratory V 1
A laboratory session that will enable students to practice techniques for assessing reproductive function and fertility potential of horses. Prereq: 3rd yr standing in Veterinary Medicine program, and enrollment in the Equine Care Area of Emphasis; or permission of instructor. Concur: 7793. Not open to students with credit for 791.01.

7895.02 Seminar in Reproductive Physiology and Medicine G V 1
Critical review of the current literature related to comparative reproductive physiology and medicine. Primary emphasis will be placed on experimental design, methods, and conclusions. Prereq: 1st (second semester), 2nd, or 3rd yr standing in Veterinary Medicine program, and DVM or equiv; or permission of instructor. Not open to students with credit for 790. This course is graded S/U.

8100 Nuclear Medicine and Special Procedures in Diagnostic Imaging G V 2
Reviews basic principles of special procedures in diagnostic imaging. Interpretive principles using case examples and a current review of the literature will be targeted with a focus on the ACVR Examination Objectives. Prereq: Students must have a DVM/VMD, or equiv degree; or permission of instructor.

8200 Clinical and Didactic Teaching in Veterinary Medicine G V 2
A didactic course presenting lectures on teaching theory, and best teaching practices for clinical, didactic, and small group settings.

8600.01 Advanced Topics in Comparative Behavioral Medicine G V 1
Course familiarizes the student with comparative behavioral medicine by critical review and evaluation of the current and past literature in both human and veterinary medicine with emphasis on study design, methodology, and data interpretation. Prereq: DVM or equiv, or permission of instructor.

8600.02 Advanced Topics in Comparative Behavioral Medicine G V 1
Course familiarizes the student with comparative behavioral medicine by critical review and evaluation of the current and past literature in both human and veterinary medicine with emphasis on study design, methodology, and data interpretation. Prereq: DVM or equiv, or permission of instructor. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

8601.01 Advanced Topics in Veterinary Psychopharmacology I G V 2
Course includes a review of psychopharmacology, including mechanism of action, side effects of veterinary Psychotropic drugs. Metabolism and excretion of drugs, drug interactions, and combination therapies and their clinical use are also discussed.

8601.02 Advanced Topics in Veterinary Psychopharmacology II G V 2
Course includes a review of psychopharmacology, including mechanism of action, side effects of veterinary psychotropic drugs. Metabolism and excretion of drugs, drug interactions, and combination therapies and their clinical use are also discussed.

8781 Research Methods and Grantsmanship G 1
Introduction to grantsmanship, including the development of a research question, use of appropriate statistical methods, and the preparation of a research proposal that will be reviewed by the class. Prereq: DVM or equiv, or permission of instructor. Not open to students with credit for 8601.

8792.01 Techniques in Ophthalmic and Vision Research I G 1
Familiarizes students with current research techniques in comparative ophthalmology. This will include, but not be limited to PCR, cell culture, drug delivery, immunohistochemistry and other common ophthalmic research tools. Prereq: DVM or equiv, or permission of instructor.

8792.02 Techniques in Ophthalmic and Vision Research II G 1
Familiarizes the student with current research techniques in comparative ophthalmology. This will include, but not be limited to PCR, cell culture, drug delivery, immunohistochemistry and other common ophthalmic research tools. Prereq: 8792.01, and DVM, or equiv; or permission of instructor.

8783 Experimental Design & Data Analysis in Veterinary & Comparative Medicine I G 1
Principles and practice of study designs and data analyses commonly used in veterinary and comparative medical research. Prereq: DVM or equiv; or permission of instructor. Not open to students with credit for 801.

8784 Experimental Design & Data Analysis in Veterinary & Comparative Medicine II G 1
Introduction to the principles and practice of study designs and data analyses commonly used in veterinary and comparative medical research. Prereq: DVM or equiv; or permission of instructor. Not open to students with credit for 801.

8790 Veterinary Clinical Pharmacology and Therapeutics G V 2
Mechanism of action, indications, and potential adverse effects of commonly used drugs. Emphasis will be placed on cellular effects, receptor interactions, and intracellular signaling pathways. Basic pharmacokinetic principles will also be presented.

8791 Clinical Correlations in Large Animal Medicine & Surgery G V 2
The purpose of this course is to develop clinical expertise in large animal medicine through interactive case-based discussions covering pathophysiology, clinical medicine, treatment, and prognosis. Evidence-based medicine will be emphasized. Prereq: DVMs in residency/Grad programs, or by petition of team leader. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

8822.02 Advanced Veterinary Internal Medicine: Gastroenterology G V 2
In-depth review of the pathophysiology, diagnosis, and medical treatment of selected gastrointestinal diseases of dogs and cats.

8822.03 Advanced Veterinary Internal Medicine: Respiratory Disease G V 2
An in-depth review of the pathophysiology, diagnosis, and medical treatment of selected respiratory diseases of dogs and cats.

8822.04 Advanced Veterinary Internal Medicine: Neurology G V 2

8822.06 Advanced Veterinary Internal Medicine: Nephrology and Urology G V 2
In-depth review of the pathophysiology, diagnosis, and medical treatment of urinary tract diseases of dogs and cats. Renal physiology relevant to clinical medicine, diagnostic imaging techniques, management of specific urinary tract syndromes.

8822.07 Advanced Veterinary Internal Medicine: Oncology I G V 2
This course will provide an introduction to basic cancer biology, medical cancer therapy, cancer diagnosis, experimental tumor model systems, and comparative and translational oncology focusing on lymphoma and sarcoma.

8822.08 Advanced Veterinary Internal Medicine: Hepatology G V 2
In-depth review of the pathophysiology, diagnosis, and medical treatment of selected diseases of the hepatobiliary system and pancreas in dogs and cats.

8822.11 Advanced Veterinary Internal Medicine: Comparative Structure and Function of the Integument G V 2
Normal anatomy, physiology and functions of the skin and related structures.

8822.12 Advanced Veterinary Internal Medicine: Otology and Audiology G V 2
Designed to introduce the student to the basics of ear disease and audiometry.

8822.13 Equine Musculoskeletal Imaging G V 2
Covers all aspects of musculoskeletal imaging (radiology, ultrasound, nuclear medicine, MRI) with particular emphasis on pathologic conditions and the best diagnostic modality to document the pathology.

8822.14 Advanced Veterinary Internal Medicine: Oncology II G V 2
This course will discuss principles of the clinical management of veterinary cancer patients, including: pharmacology of cancer drugs, paraneoplastic syndromes, complications of treatment, nutrition, functional imaging, and hospice care.

8824 Congenital Heart Disease in Animals G V 2
An overview and in-depth analysis of congenital malformations of the heart and great vessels in veterinary species. Complex lesions are emphasized, with a focus on the pathophysiology and diagnostic findings. Subject to approval by course leader. Grad students must be in good academic standing, and they must be a current resident in cardiology or with permission of the team leader to register. Prereq: Permission of instructor.

8824.01 Cardiac Catheterization and Angiography in Dogs and Cats - Equipment and Techniques G V 2
This course will present an in-depth review of the equipment and techniques used during cardiac catheterization procedures for diagnostic and therapeutic purposes. Target species will be small animals. Advanced understanding and training on cardiac anatomy, cardiac physiology and pathophysiology, cardiac hemodynamics, and cardiac catheterization required prior to enrollment.

8825 Clinical Echocardiography in Animals G V 2
Examines an in-depth review on 2D, Mmode, Doppler, TDI, strain and speckle, and 3D echocardiography. Transthoracic imaging modalities and disease patterns will be studied and discussed. Species focus will be animals and people.

8825.01 Advanced Knowledge of veterinary cardiac anatomy and physiology.
Cardiac Catheterization in Veterinary Medicine: Hemodynamics, Angiography & Intervention
Principles and practices of obtaining hemodynamic measurements; performing angiographic techniques for cardiac diagnosis; and delivery of catheter-based therapies in veterinary medicine.
Prereq: Enrollment in Adv Cardiology Training, or permission of instructor.

Advanced Clinical Electrocardiography
This course considers advanced concepts in the recognition and therapy of cardiac arrhythmias in veterinary medicine using in-class EKG interpretation as the springboard for discussions of classification, diagnosis, and therapy. VetBio 7780 completion recommended but not required.
Prereq: Enrollment in advanced clinical training; or prior electrocardiology experience and instructor permission.

Heart Rhythm Disturbances in Veterinary Medicine I: Mechanisms of Arrhythmogenesis
A three-part course offered over three consecutive semesters with a focus on resident-graduate students training in veterinary cardiology. Part 1: Mechanisms of Arrhythmogenesis; Intracardiac electrocardiography; Cardiac conduction disturbances; Cardiac Pacing; Ablation therapies.
Prereq: Grad standing in adv cardiology training or instructor permission.

Heart Rhythm Disturbances in Veterinary Medicine II: Sinus, Atrial, and Supraventricular Rhythm Disturbances
A three-part course offered over three consecutive semesters with a focus on resident-graduate students training in veterinary cardiology. Part 2: Sinus, Atrial and Supraventricular Rhythm Disturbances: Mechanisms of arrhythmogenesis; Recognition using conventional and intracardiac electrocardiography; Standard and advanced treatment modalities.
Prereq: Grad standing in adv cardiology training or instructor permission.

Heart Rhythm Disturbances in Veterinary Medicine III: Ventricular Rhythm Disturbances
A three-part course offered over three consecutive semesters with a focus on resident-graduate students training in veterinary cardiology. Part 3: Ventricular Rhythm Disturbances: Mechanisms of arrhythmogenesis; Recognition using conventional and intracardiac electrocardiography; Standard and advanced treatment modalities.
Prereq: Grad standing in adv cardiology training or instructor permission.

Advanced Veterinary Surgery: Anesthesia & Critical Care
Review of physiology and medical intervention for selected topics including cardiopulmonary resuscitation, sepsis, and ischemia-reperfusion in veterinary anesthesia and critical care; comparison to similar topics in human medicine when appropriate.
Prereq: DVM or equiv; or permission of instructor.

Advanced Veterinary Surgery: Surgical Oncology
The purpose of this course is to provide information about surgical oncology, radiation oncology, and the most recent surgical options to treat cancer. Laboratories will be provided to apply surgical techniques for mastectomies, mandibulectomies, and repeatable to a maximum of 2 or 3 hrs.

Advanced Veterinary Surgery: Respiratory and Thoracic Surgery
Fundamental respiratory pathophysiology, diagnostic techniques for respiratory disease, and respiratory and thoracic surgery methodology in comparative veterinary surgical sciences.
Prereq: DVM or equiv, or permission of instructor.

Advanced Veterinary Surgery: Surgical Neurology
Fundamentals of neurologic exam and lesion localization; neuro-ophthalmology, hearing disorders, neurodiagnostic techniques, neuroanesthesia. Pathophysiology of vertebrobasilar stroke; surgical techniques; peripheral nerve injury and rehabilitation.
Prereq: DVM or equiv; or permission of instructor.

Advanced Surgical Sciences: Gastroenterology
The purpose of this course is to provide information about the pathophysiology, anatomy, diagnosis and treatment of medical and surgical disorders of the gastrointestinal tract.
Prereq: DVM or equiv., or permission of instructor.

Advanced Veterinary Surgery: Renal, Urologic and Reproductive Surgery
Principles and comparative aspects of renal, urologic, and reproductive tract surgery in domestic animals; physiology, pathology, diagnosis and management of diseases of the urogenital tract in domestic animals.
Prereq: DVM or equiv; or permission of instructor. Not open to students with credit for 833.06.

Advanced Veterinary Surgery: Musculoskeletal Surgery
Fundamental concepts, principles, and procedures of musculoskeletal surgery in domestic animals.
Prereq: DVM or equiv; or permission of instructor.

Advanced Veterinary Surgery: Wound and Reconstruction
The purpose of this course is to provide information about the physiology, anatomy, and healing principles of skin. The principles of wound reconstruction with open wound management, flaps, and grafts to be discussed. Laboratories will be provided.
Prereq: DVM or equiv; or permission of instructor.

Advanced Veterinary Ocular Microsurgical Techniques I
Presentation of clinical and practical aspects of microsurgical principles and techniques pertaining to the eye. This includes advanced blepharoplasty, corneal, and intracocular surgery.
Prereq: Veterinary Ophthalmology Resident, or permission of instructor.

Advanced Veterinary Ocular Microsurgical Techniques II
Covers microsurgical instrumentation, surgical microscopes, care of microsurgical equipment, microsurgical principles and techniques pertaining to the eye. Will include advanced blepharoplasty, corneal, and intracocular surgery.
Prereq: VetClin 8833.10, and Veterinary Ophthalmology Resident; or permission of instructor.

Advanced Large Animal Internal Medicine: Medical and Surgical Gastrointestinal Diseases
Comprehensive review of medical and surgical diseases of the gastrointestinal system of horses and ruminants.
Prereq: DVM or equiv; or permission of instructor.

Advanced Large Animal Internal Medicine: Metabolic and Endocrine Diseases
Species specific and comparative aspects of metabolic and endocrine physiology, pathophysiology and diseases in large animals.
Prereq: DVM or equiv; or permission of instructor.

Advanced Large Animal Internal Medicine: Neurology
Pathophysiology, diagnosis and management of diseases of the nervous system of large animals.
Prereq: DVM or equiv; or permission of instructor. Not open to students with credit for 822.04.

Advanced Large Animal Internal Medicine: Hematology
Pathophysiology and pathophysiology of the hemic lymphatic system in large animals. Additionally, diagnosis and management of selected neoplastic conditions will be discussed.
Prereq: DVM or equiv; or permission of instructor. Not open to students with credit for 822.07.

Advanced Large Animal Internal Medicine: Respiratory Diseases
Comprehensive review of selected topics in respiratory physiology and medical diseases of the respiratory tract of horses, ruminants, and camels.
Prereq: DVM or equiv; or permission of instructor.

Advanced Large Animal Internal Medicine: Toxicology
Review and update on toxic agents in large animals.
Prereq: DVM or equiv; or permission of instructor.

Large Animal Internal Medicine Seminars: Neonatology
Focuses on conditions affecting neonates of large animal species covering pathophysiology, clinical medicine, treatment, and prognosis. Emphasis will be on current knowledge and recent comparative literature.
Prereq: This course is for DVMs in residency/graduate programs or by petition of the team leader.

Advanced Large Animal Internal Medicine: Special Topics
The purpose of this course is to present and discuss the most recent literature / topics (clinical, research) in large animal internal medicine that are not covered in other courses, but that are relevant to residents and grad students.
Prereq: DVMs in residency/Grad programs, or by petition of team leader. Repeatable to a maximum of 2 or 3 hrs.

Advanced Veterinary Surgery: Gastrointestinal Surgery
Students will review urinary physiology and pathophysiology, and will be introduced to the principles of urologic surgery. Specific large animal urinary and genital conditions and surgical approaches will be covered.

Advanced Veterinary Surgery: Gastrointestinal Surgery
Covers advanced large animal surgical techniques of the gastrointestinal tract. Current literature will be reviewed and pathophysiology and medical case management will also be included in the lecture series.

Large Animal Neurosurgery
Presentation of pathophysiology, diagnosis, and surgical treatment for injury to the nervous system with a focus on large animals.
454 Veterinary Clinical Sciences

8871 Small Animal Abdominal Ultrasound  
- Basics of ultrasound physics and a review of the normal and abnormal sono- 
graphic appearance of abdominal structures in small animals. Introduction to Doppler imaging, contrast ultrasound, and ultrason- 
guided aspirations.
- Prereq: DVM or equiv; or permission of instructor.

8872 Advanced Equine Sport Horse Surgery  
- Systematic exposure of the advanced surgery trainee to the "art and science" of arthroscopy, specifically equine arthroscopy, using current textbooks as the guide for complete coverage of equine arthroscopy.

8873 Anesthesia of the Large Animal Patient  
- Course includes a review of anesthetic risk, pharmacology of anesthetic drugs, pain, and CPR with an emphasis on equine and ruminant patients. The focus of this course is on all aspects of the anesthetic process in the equine and ruminant patient.

8874 Anesthesia of the Small Animal Patient  
- Course includes a review of anesthetic risk, specific disease conditions in small animal patients with an emphasis on specific domains of the AVMA board exam and job task analysis.

8893.01 Case Conference: Orthopedic Surgery  
- Offers surgery residents the opportunity to discuss small animal orthopedic/ 
neurosurgical cases and review relevant literature in a critical manner. Topics will be prepared for interactive discussion between residents and surgery faculty.
- Prereq: DVM or equiv; or permission of instructor. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

8893.02 Clinicopathologic Conference: Canine and Feline Medicine  
- Case conference emphasizing advanced aspects of canine and feline medicine. Emphasis is placed on interpretation of clinical, imaging, laboratory and pathologic data.
- Prereq: DVM or equiv; or permission of instructor. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

8893.03 Case Conference: Soft Tissue Surgery  
- Offers surgery residents the opportunity to discuss small animal soft tissue cases and review relevant literature in a critical manner. Topics will be prepared for interactive discussion.
- Prereq: DVM or equiv; or permission of instructor. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

8893.04 Case Conference: Radiology  
- Veterinary diagnostic imaging graduate students are presented case material and are graded on their ability to detect imaging abnormalities, create a list of differential diagnoses, achieve an imaging diagnosis and advise the next step for the case.
- Prereq: DVM or equiv; or permission of instructor.

8893.05 Radiology Known Case Conference Introductory II  
- Teach and train radiology graduate students the correct approach to diagnostic image interpretation during their three year program. Radiology graduate students are expected to formulate a ranked list of differential diagnoses and discuss other diagnostic modalities that may aid in further determining a diagnosis. Discussion of pathophysiology will be included.
- Prereq: 8894.04, 8894.05, and 8894.06, and Veterinary Diagnostic Imaging Residency.

8893.06 Radiology Known Case Conference Intermediate I  
- Teach and train radiology graduate students the correct approach to diagnostic image interpretation during their three year program. Radiology graduate students are expected to formulate a ranked list of differential diagnoses and discuss other diagnostic modalities that may aid in further determining a diagnosis. Discussion of pathophysiology will be included.
- Prereq: 8894.04 and 8894.05, and Veterinary Diagnostic Imaging residency.

8893.07 Radiology Known Case Conference Intermediate II  
- Teach and train radiology graduate students the correct approach to diagnostic image interpretation during their three year program. Radiology graduate students are expected to formulate a ranked list of differential diagnoses and discuss other diagnostic modalities that may aid in further determining a diagnosis. Discussion of pathophysiology will be included.

8893.08 Radiology Known Case Conference Advanced I  
- Teach and train radiology graduate students the correct approach to diagnostic image interpretation during their three year program. Radiology graduate students are expected to formulate a ranked list of differential diagnoses and discuss other diagnostic modalities that may aid in further determining a diagnosis. Discussion of pathophysiology will be included.
- Prereq: 8894.04, 8894.05, 8894.06, and 8894.07, and Veterinary Diagnostic Imaging Residency.

8893.09 Radiology Known Case Conference Advanced II  
- Teach and train radiology graduate students the correct approach to diagnostic image interpretation during their three year program. Radiology graduate students are expected to formulate a ranked list of differential diagnoses and discuss other diagnostic modalities that may aid in further determining a diagnosis. Discussion of pathophysiology will be included.

8895.01 Advanced Topics in Veterinary Cardiology  
- Advanced topics in cardiology focusing on resident-graduate students training in veterinary cardiology. Eight topics are covered over eight repetitions of the course including cardiomyopathy, pulmonary hypertension, heart failure, systolic function and dysfunction, diastolic function and dysfunction, degenerative valve disease, endocarditis, pericardial disease, and thrombosis and thromboembolism.

8895.02 Advanced Topics in Veterinary Clinical and Comparative Oncology  
- Critical review of literature on topics related to veterinary clinical and comparative (animal and human) oncology and neoplastic pathology review.
- Prereq: DVM or equiv; or permission of instructor. Repeatable to a maximum of 6 cr hrs.

8895.03 Advanced Topics in Veterinary Dermatology and Otology  
- Small group discussion and critical review of current topics in veterinary medicine from selected journals and textbooks.
- Prereq: DVM or equiv; or permission of instructor. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

8895.04 Advanced Topics in comparative Diagnostic Imaging  
- Familiarize radiology residents and graduate students with comparative diagnostic imaging by critical review of the biomedical literature. Emphasis on evaluation of study design, methodologic, and data interpretation.
- Prereq: DVM or equiv; or permission of instructor. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

8895.05 Advanced Veterinary Endoscopy  
- The student will be able to critically understand the standard procedures performed in small animal internal medicine with respect to techniques, required equipment, procedural decision-making, associated risks, and endoscopic interpretation.

8895.07 Advanced Topics in Veterinary Neurology  
- A small-group course based on the discussion of the current literature and review of topics of neuroimaging and neuropathology with clinical corollaries.
- Prereq: DVM or equiv; or permission of instructor. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

8895.08 Advanced Topics in Comparative Anesthesiology  
- Critical review of current literature related to anesthesiology with a focus on research design, methodology, and interpretation.

8895.12 Advanced Comparative Ophthalmology  
- Familiarize the student with comparative ophthalmology by critical review and evaluation of the current and past biomedical literature with emphasis on study design, methodology, and data interpretation.
- Prereq: DVM or equiv; or permission of instructor. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

8895.13 Journal Review in Comparative Emergency and Critical Care  
- Familiarize the student with comparative Emergency and Critical Care. The current and past primary literature from selected peer-reviewed journals will be critically reviewed with regards to study design, methodology and data interpretation.
- Prereq: DVMs in residency/Grad programs, or by petition of the team leader. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

8895.14 Comparative Small Animal Internal Medicine  
- Critical review of the veterinary & human biomedical literature in internal medicine with respect to study design, methodology, and data interpretation and discussion of clinical implications of results.
- Prereq: DVMs in residency/Grad programs, or by petition of team leaders. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.
8896  Physics Applied to Anesthetic Practice  G  1
A didactic course using discussion of current literature related to physics and anesthetics. This course includes a review of important concepts in physics, measurements, anesthetic equipment, and how they apply to anesthetic practice.

8896.03  Advanced Topics in Veterinary Dermatology and Otology  G  1
Small group discussion and critical review of current topics in veterinary medicine from selected journals and textbooks. Prereq: DVM or equivalent, or permission of instructor.

8896.04  Dermatopathology I  G  1
Familiarize the student with both normal microscopic anatomy of the skin and dermatopathology of exotic, large and small animals. Prereq: DVM or equivalent, or permission of instructor.

8896.05  Dermatopathology II  G  1
Familiarizes students with interpretation of dermatopathology by pattern analysis. Recognition of subtle changes, cellular infiltrates and infectious organisms will be emphasized to allow development of differential diagnoses. Prereq: DVM or equivalent, or permission of instructor.

8896.06  Dermatopathology III  G  1
Builds on recognition of subtle changes, cellular infiltrates and presence of infectious organisms and include pattern recognition to differentiate non-neoplastic benign and malignant neoplasms of mammalian species. Prereq: DVM or equivalent, or permission of instructor.

8896.08  Advanced Topics in Comparative Anesthesiology  G  1
Critical review of the current literature related to veterinary anesthesiology with a focus on study design, methodology and interpretation. Prereq: DVM or equivalent, or permission of the instructor.

8896.09  Comparative Ocular Histology I  G  1
Familiarizes the student with comparative ocular histology and ocular histopathology. Illustrative histopathologic case material will be used to facilitate discussion of disease processes. Prereq: DVM or equivalent, or permission of instructor.

8896.10  Comparative Ocular Histology II  G  1
Familiarizes the student with comparative ocular histology and ocular histopathology. Illustrative histopathologic case material will be used to facilitate discussion of diseases processes. Prereq: DVM or equivalent, or permission of instructor.

8896.11  Comparative Ocular Histology III  G  1
Familiarizes the student with comparative ocular histology and ocular histopathology. Illustrative histopathologic case material will be used to facilitate discussion of diseases processes. Prereq: DVM or equivalent, or permission of instructor.

8896.12  Advanced Comparative Ophthalmology  G  1
Familiarizes the student with comparative ophthalmology by critical review and evaluation of the current and past biomedical literature with emphasis on study design, methodology, and data interpretation. Prereq: DVM or equivalent, or permission of instructor.

8896.13  Advanced Comparative Anesthesiology: Classic Literature Review  G  1
A small group course based on discussion of classic anesthesiology literature with a focus on study design, methodology, and interpretation. Course format involves discussion of selected historical papers from journals pertaining to anesthesiology.

8896.14  Advanced Farm Animal Surgery  G  2
An in-depth study of special topics including the surgical conditions and surgical treatments of cattle, small ruminants, and pigs. Prereq: Resident/grad students in large animal, or permission of team leader.

8896.15  Advanced Topics in Anesthesiology: Respiratory Pathophysiology  G  1
A small group course based on discussion of respiratory pathophysiology as it pertains to anesthetic practice. Course format involves review and presentation of information from "Pulmonary Pathophysiology" by West, other textbooks and journals. Prereq: Resident in Veterinary Anesthesiology, or permission of team leader.

8896.16  Advanced Topics in Anesthesiology: Anesthetic Uptake and Action  G  1
A small group course based on discussion of mechanism of action of inhaled anesthetics, uptake, solubility, and metabolism. Course format involves review and presentation of information from "Anesthetic Uptake and Action" by Eger and other sources. Prereq: Grad standing. This course is designed for residents in Veterinary Anesthesiology but others may be considered upon petition to the team leader.

8896.17  Journal Review in Comparative Emergency and Critical Care  G  1
Familiarize the student with comparative Emergency and Critical Care. The current and past primary literature from selected peer-reviewed journals will be critically reviewed with regards to study design, methodology and data interpretation. Prereq: DVMs in residency/graduate programs, or by petition of the team leader.

8896.18  Book Club in Comparative Emergency and Critical Care  G  1
Covers the principles and practice of applied renal physiology as relevant to residents in the Emergency and Critical Care residency program. Prereq: DVMs in residency/graduate programs, or by petition of the team leader.

8896.19  Book Club in Comparative Emergency and Critical Care  G  1
Covers basic and applied physiology of coagulation/coagulation disorders. It will also cover applied systems physiology (GI, reproductive, neurologic, ophthalmologic) and nutrition as relevant to Critical Care Medicine. Prereq: DVMs in residency/graduate programs, or by petition of the team leader.

8896.20  Book Club in Comparative Emergency and Critical Care III-App Respiratory Physiology and SIRS/Sepsis  G  1
Covers the principles and practice of applied respiratory physiology. It will also cover the pathophysiology and management of SIRS and sepsis as relevant to residents in the Emergency and Critical Care residency program. Prereq: DVMs in residency/Grad programs, or by petition of the team leader.

8896.21  Book Club in Comparative Emergency and Critical Care IV-Shock, Trauma, and CPR  G  1
Covers the physiology and management of trauma and shock. It will also cover the principles and practice of cardiopulmonary resuscitation as relevant to residents in the Emergency and Critical Care residency program. Prereq: DVMs in residency/Grad programs, or by petition of the team leader.

8896.22  Book Club in Comparative Emergency and Critical Care V-Cardiovascular Physiology  G  1
Covers the principles and practice of applied cardiovascular physiology and therapeutics as relevant to residents in the Emergency and Critical Care residency program. Prereq: DVMs in residency/Grad programs, or by petition of the team leader.

8896.23  Book Club in Comparative Emergency and Critical Care VI-Mech Ventilation, Monitoring, Inflammation  G  1
Covers the principles and practice of patient monitoring in the ICU, the use of mechanical ventilation, and the pathophysiology of inflammation as relevant to residents in the Emergency and Critical Care residency program. Prereq: DVMs in residency/Grad programs, or by petition of the team leader.

8896.24  Advanced Topics in Anesthesiology: Anesthesia Equipment  G  1
A small group course based on discussion of the current equipment used in anesthetic practice. Course format involves review and presentation of information from "Understanding Anesthesia Equipment" as well as from other textbooks and journals. Prereq: Veterinary Anesthesiology Residents only, others by permission of team leader.

8896.25  Advanced Topics in Anesthesiology: Respiratory Physiology  G  1
A small group course based on discussion of respiratory physiology as it pertains to anesthetic practice. Course format involves review and presentation of information from "Respiratory Physiology" by West, as well as from other textbooks and journals. Prereq: Veterinary Anesthesiology resident, or permission of team leader.

8896.26  Advanced Topics in Anesthesiology: Cardiovascular Physiology and Pharmacology for Anesthesia  G  1
A small group course based on discussion of respiratory physiology as it pertains to anesthetic practice. Course format involves review and presentation of information from "Respiratory Physiology" by West, as well as other textbooks and journals. Prereq: Veterinary Anesthesiology Residents, or permission of team leader.

8896.27  Large Animal Surgery Current Literature  G  1
This course will be presented in journal club style, with participants presenting current literature related to equine and farm animal surgery. Repeatable to a maximum of 3 cr hrs.

8897  Advanced topics in veterinary neurology: Neuromuscular disease  G  3
This course is designed to provide advanced, graduate level exposure to electrophysiologic techniques and diagnosis and treatment of neuromuscular diseases in veterinary medicine. Prereq: Enrollment in the OSU CVM Veterinary Neurology combined residency and graduate program; or permission of the instructor.

8999  Research in Veterinary Clinical Sciences  G  1 - 15
Research for dissertation purposes only. Repeatable. This course is graded S/U.
456 Veterinary Medicine

6510 Veterinary Preventive Medicine I: Introduction to Epidemiology and Population Systems V 2½
Descriptive and analytical epidemiology, including design, analysis, and interpretation of results; host, agent, and environmental factors in disease causation.
Prereq: 1st yr standing in Veterinary Medicine program.

6520 Gross Anatomy I V 3½
Body and its components as forms, relationships, and mechanical functioning.
Prereq: 1st yr standing in Veterinary Medicine program.

6521 Gross Anatomy II V 4
Study of the structure and function of body systems of domesticated herbivores using the equine species as a model for dissection. Common anatomic features and species specific differences of the various systems are highlighted.
Prereq: 1st yr standing in Veterinary Medicine program.

6525 Introduction to Veterinary Diagnostic Radiology V 1
Radiation physics and safety; basic principles of image interpretation; normal radiographic anatomy of small and large animals.
Prereq: 1st yr standing in Veterinary Medicine program. Not open to students with credit for 525 or 526.

6530 Comparative Structure and Function of Tissues V 2½
Correlated study of the development, microscopic structure, and ultrastructural morphology of tissues.
Prereq: 1st yr standing in Veterinary Medicine program.

6540 Structure and Function of Cells V 2
Introduction to structure and function at cellular level including physiological principles of homeostasis, energetics, metabolism, enzymes, nutrition, and growth.
Prereq: 1 st yr standing in Veterinary Medicine program. Not open to students with credit for 540.

6550.01 Comparative Biology of Disease I: General Pathology and Immunology V 3
An interdisciplinary study of the interactions between disease producing agents, body systems, tissues, cells, subcellular units, and selected drugs and toxins.
Prereq: 1st yr standing in Veterinary Medicine program. Not open to students with credit for 550.01.

6550.02 Comparative Biology of Disease II: Animal Pathogens V 3
An interdisciplinary study of the interactions between disease producing agents, body systems, tissues, cells, subcellular units, and selected drugs and toxins.
Prereq: 1st yr standing in Veterinary Medicine program. Not open to students with credit for 550.02.

6561 Principles of Veterinary Pharmacology V 2
Basic principles of pharmacology, pharmacodynamics, pharmacokinetics, and therapeutics.
Prereq: 1st yr standing in Veterinary Medicine program. Not open to students with credit for 561.

6565 Introduction to Animal Welfare V 1
Historical, philosophical and scientific developments that have led to our current understanding of animal welfare and how it should be assessed. Welfare issues related to the different uses of animals in society.
Prereq: 2nd yr standing in Veterinary Medicine program.

6570.01 Introduction to Clinical Veterinary Medicine V 1
Introduction to the basic concepts and skills required to practice clinical veterinary medicine, including the approach to a veterinary case, and some basic psychomotor, surgical and cognitive skills required by clinicians.
Prereq: 1st yr standing in Veterinary Medicine program. This course is graded S/U.

6570.02 Clinical Veterinary Medicine Experience V 1
Experiential learning course allowing students to be immersed in various clinical settings to observe and participate in the clinical management of cases, as well as to explore alternative careers in the veterinary profession.
Prereq: 2nd yr standing in Veterinary Medicine program. This course is graded S/U.

6570.03 Clinical Reasoning and Decision-Making V 2
Serves as a capstone experience to provide students with the opportunity to integrate the clinical veterinary skills and knowledge required to "think and behave like a clinician" in preparation for their clinical year.
Prereq: 3rd yr standing in Veterinary Medicine program.

6600 Cardiovascular System V 3
A comparative study of the structure, function, and dysfunction of the cardiovascular system including arrhythmias, abnormal flow, congenital disease, etiologic agents, diagnostic methods, and therapeutic approaches.
Prereq: 2nd yr standing in Veterinary Medicine program. Not open to students with credit for 600.

6601 Respiratory System V 3
A comparative study of the structure, function, and dysfunction of the respiratory system including reaction to injury, ventilation defects, pneumonias, neoplastic disease, radiological diagnosis, and therapeutic approaches.
Prereq: 2nd yr standing in Veterinary Medicine program. Not open to students with credit for 601.

6602 Urinary System V 2½
A comparative study of the structure, function, and dysfunction of the urinary system including diseases of the kidney, bladder, and urethra, and their diagnosis and treatment.
Prereq: 2nd yr standing in Veterinary Medicine program.

6603 Nervous System V 3½
Comparative study of the structure, function and dysfunction of the nervous system including functional anatomy, pathology, and clinical evaluation of the brain and spinal cord.
Prereq: 2nd yr standing in Veterinary Medicine program.

6604 Endocrine System V 2½
A comparative study of the anatomy, physiology, and pathology of the major endocrine systems and an introduction to diagnosis and treatment of endocrine disorders.
Prereq: 2nd yr standing in Veterinary Medicine program.

6605 Reproductive System V 3
A comparative study of the structure, function, and dysfunction of the reproductive system including etiologic, pathogenic, pathophysiological, therapeutic, and preventive aspects of reproductive diseases.
Prereq: 2nd yr standing in Veterinary Medicine program. Not open to students with credit for 605.

6606 Integumentary System V 3
Study of the structure and function of the skin and ears as a basis for studying diseases of these organs. A problem-based approach to recognition, diagnosis and treatment of skin and ear diseases of domestic animals.
Prereq: 2nd yr standing in Veterinary Medicine program. Not open to students with credit for 606.

6607 Musculo-skeletal System V 2½
A comparative study of the structure, function, and dysfunction of the musculoskeletal system including congenital and acquired diseases, their radiographic diagnosis, treatment, and prevention.
Prereq: 1st yr standing in Veterinary Medicine program.

6609 Digestive System V 3½
A comprehensive study of the gastrointestinal system of domestic animals.
Prereq: 2nd yr standing in Veterinary Medicine program.

6610.01 Clinical Veterinary Parasitology V 1
Clinical aspects of parasitic infections of cats, dogs, horses, cattle and small ruminants, including symptoms diagnosis treatments, control measures and zoonotic concerns.
Prereq: 3rd yr standing in Veterinary Medicine program. Not open to students with credit for 610.

6610.02 Applied Clinical Veterinary Parasitology V 1
Laboratory methods used in the diagnosis of parasitic infections in small and large animals.
Prereq: 3rd yr standing in Veterinary Medicine program. Not open to students with credit for 610.

6611 Veterinary Preventive Medicine III: Public Veterinary Practice V 2
Application of veterinary preventive medicine in society with an emphasis of the importance of the veterinary profession in safeguarding animal and public health.
Pre req: Third year standing in VMColl.

6612 Introduction to Comparative Veterinary Ophthalmology V 2
Comparative anatomy, histology and physiology of the normal and abnormal eye and adnexa of domestic animals.
Prereq: 3rd yr standing in Veterinary Medicine program. Not open to students with credit for 612.

6614.01 Professional Development I-A V 1
Introduction to the profession, ethics, and a variety of communication and self management information and skills necessary to be successful in veterinary school, the veterinary profession and in life.
Pre req: First year standing in VMColl. Not open to students with credit for 560.01, 560.02, or 614.01. This course is graded S/U.

6614.02 Professional Development I-B V 1
Provides students with an introduction to leadership and builds on the foundations of ethics principles. Additional information on communication and self management is provided.
Pre req: First year standing in VMColl. Not open to students with credit for 614.02. This course is graded S/U.

6614.03 Professional Development II-A V 1
Introduction to social awareness and relationship management, continued discussion of leadership development and application of ethics to build on the foundations of ethics principles.
Pre req: Second year standing in VMColl. Not open to students with credit for 614.03.

6614.04 Professional Development II-B V 1
Advanced learning in social awareness, relationship management, leadership development and application of ethics to build on the foundation of ethics principles.
Pre req: Second year standing in VMColl. Not open to students with credit for 614.04.
V752 Introduction to Veterinary Anesthesiology V 2
Introduction to veterinary anesthesia.
Prereq: 3rd yr standing in Veterinary Medicine program. Not open to students with credit for 616.

7563 Introduction to Surgery V 2
Introduction to surgery.
Prereq: Third year standing in VMCColl. Not open to students with credit for 653.

7564 Clinical Microbiology and Pharmacology of Antimicrobial Agents V 1
Detection and differential diagnoses of bacterial and fungal disease in domestic species and clinical pharmacology of antimicrobial and antifungal agents used in veterinary medicine.
Prereq: 3rd yr standing in Veterinary Medicine program. Not open to students with credit for 664.

7613 Veterinary Emergency and Critical Care Medicine V 2
Principles and applications of fluid therapy and emergency and critical care medicine in small and large animals.
Prereq: 3rd yr standing in Veterinary Medicine program. Not open to students with credit for 613.

7615.01 Small Animal Operative Practice V 4
Clinical instruction in and application of surgical techniques and treatment of small animal diseases.
Prereq: 3rd yr standing in Veterinary Medicine program. Not open to students with credit for 615.01.

7615.02 Small Animal Medicine Diagnostic Techniques and Procedures V 1
Clinical instruction in and application of medical diagnostic and therapeutic techniques in small animals.
Prereq: 3rd yr standing in Veterinary Medicine program. Not open to students with credit for 615.02.

7616 Farm Animal Medicine Diagnostic Techniques, and Procedures V 1
Instruction and self-study in minor techniques for large animals.
Prereq: 3rd yr standing in Veterinary Medicine program. Not open to students with credit for 616.

7617 Equine Medicine Diagnostic Techniques, and Procedures V 1
Laboratory and self-instruction in equine techniques.
Prereq: 3rd yr standing in Veterinary Medicine program. Not open to students with credit for 617.

7700.01 Applied Veterinary Medicine: Community Practice V 2
Clinical skills taught by physical exam, diagnosis and treatment of client-owned animals. Disease prevention and client education are emphasized including nutrition, vaccinations, parasite control, dentistry, animal behavior, and screening tests.
Prereq: 4th yr standing in Veterinary Medicine program. Not open to students with credit for 700.01. Repeatable to a maximum of 12 cr hrs.

7700.025 Applied Veterinary Medicine: Shelter Medicine and Surgery V 2
Clinical experience with shelter dogs and cats at the Capital Area Humane Society including anesthesia and general surgery, health and behavior screening, and infectious disease surveillance and prevention.
Prereq: 4th yr standing in Veterinary Medicine program. Repeatable to a maximum of 12 cr hrs.

7700.03 Applied Veterinary Medicine: Small Animal Internal Medicine V 2
Patient diagnosis and management in the small animal internal medicine service, including patient care responsibility, client communication, and interactions with all members of the patient care team.
Prereq: 4th yr standing in Veterinary Medicine program. Not open to students with credit for 700.02. Repeatable to a maximum of 12 cr hrs.

7700.04 Applied Veterinary Medicine: Small Animal Surgery - Soft Tissue V 2
Clinical experience in the management of surgical diseases of small animal patients. Students will be responsible for the preoperative, operative, and postoperative treatment for animals presented to the small animal surgery soft tissue service.
Prereq: 4th yr standing in Veterinary Medicine program. Not open to students with credit for 700.03. Repeatable to a maximum of 12 cr hrs.

7700.05 Applied Veterinary Medicine: Small Animal Surgery - Orthopedics V 2
Clinical experience in the surgical management of orthopedic diseases of small animals. Students will be responsible for the preoperative, operative, and postoperative treatment for animals presented to the small animal surgery orthopedics service.
Prereq: 4th yr standing in Veterinary Medicine program. Not open to students with credit for 700.03. Repeatable to a maximum of 12 cr hrs.
Veterinary Medicine

7700.06 Applied Veterinary Medicine: Farm Animal Medicine V 2 and Surgery
Diagnosis, management, and prevention of medical and surgical diseases of farm animals. Prereq: 4th yr standing in Veterinary Medicine program. Not open to students with credit for 700.04. Repeatable to a maximum of 12 cr hrs.

7700.07 Applied Veterinary Medicine: Large Animal Ambulatory V 2 Services
Provides students with experience working in a large animal clinic, including patient care and business management aspects. Provides instruction in production medicine and its role in modern agriculture. Prereq: 4th yr standing in Veterinary Medicine program. Not open to students with credit for 700.10. Repeatable to a maximum of 12 cr hrs.

7700.08 Applied Veterinary Medicine: Equine Medicine V 2
Application of the principles of diagnosis, treatment, and prevention of medical diseases of horses. Prereq: 4th yr standing in Veterinary Medicine program. Not open to students with credit for 700.05. Repeatable to a maximum of 12 cr hrs.

7700.09 Applied Veterinary Medicine: Equine Surgery V 2
Application of the principles of diagnosis, treatment, and prevention of surgical diseases of horses. Prereq: 4th yr standing in Veterinary Medicine program. Not open to students with credit for 700.05. Repeatable to a maximum of 12 cr hrs.

7700.10 Applied Veterinary Medicine: Equine Community Practice V 2
Application of the principles of diagnosis, treatment, and prevention of diseases of horses. Prereq: 4th yr standing in Veterinary Medicine program. Repeatable to a maximum of 12 cr hrs.

7700.11 Applied Veterinary Medicine: Equine Emergency and Critical Care Medicine V 2
Provides students supervised experience in hospital-based emergency and critical care experience with horses. Prereq: 4th yr standing in Veterinary Medicine program. Not open to students with credit for 700.16. Repeatable to a maximum of 12 cr hrs.

7700.12 Applied Veterinary Medicine: Radiology V 2
Students participate in all aspects of diagnostic radiology and become proficient in obtaining diagnostic radiographs, develop basic film reading skills, and understand radiology's role in clinical decision making and case management. Prereq: 4th yr standing in Veterinary Medicine program. Not open to students with credit for 700.07. Repeatable to a maximum of 12 cr hrs.

7700.13 Applied Veterinary Medicine: Clinical Anesthesiology V 2
Supervised experience in hospital anesthesia practice. Students assess large and small animals for anesthesia, select proper anesthesia protocols, learn proper use of anesthetic equipment, and induce, maintain, monitor, and recover patients. Prereq: 4th yr standing in Veterinary Medicine program. Not open to students with credit for 700.14. Repeatable to a maximum of 12 cr hrs.

7700.14 Applied Veterinary Medicine: Applied Pathology V 2
Students will perform necropsies of major domestic species. They will learn to recognize and describe common gross pathologic lesions and become familiar with the role of histopathology in assessment of necropsy material. Prereq: 4th yr standing in Veterinary Medicine program. Not open to students with credit for 700.14. Repeatable to a maximum of 12 cr hrs.

7700.15 Applied Veterinary Medicine: Small Animal Critical Care V 2
Evaluation, monitoring and management of small animal patients in the intensive care unit and interactions with all members of the patient care team. Students will build on and apply knowledge gained in the pre-clinical curriculum. Prereq: 4th yr standing in Veterinary Medicine program. Not open to students with credit for 700.15. Repeatable to a maximum of 12 cr hrs.

7700.16 Applied Veterinary Medicine: Small Animal Emergency V 2
Evaluation and management of small animal patients presented to the emergency service and interactions with all members of the patient care team. Students will build on and apply knowledge gained in the pre-clinical curriculum. Prereq: 4th yr standing in Veterinary Medicine program. Not open to students with credit for 700.11. Repeatable to a maximum of 12 cr hrs.

7700.17 Applied Veterinary Medicine: Ophthalmology V 2
Application of principles of diagnosis and treatment of diseases of the eye to animal patients, including dogs, cats, horses, and farm animals. Prereq: 4th yr standing in Veterinary Medicine program. Not open to students with credit for 700.12. Repeatable to a maximum of 12 cr hrs.

7700.18 Applied Veterinary Medicine: Dermatology V 2
Patient diagnosis and management in the dermatology service, including patient care, client communication, and interactions with all members of the patient care team. Students will build on and apply knowledge gained in the pre-clinical curriculum. Prereq: 4th yr standing in Veterinary Medicine program. Not open to students with credit for 700.13. Repeatable to a maximum of 12 cr hrs.

7700.19 Applied Veterinary Medicine: Cardiology V 2
Clinical instruction in diagnosis, treatment and prevention of cardiovascular diseases of animals, including patient care, client communication, and interactions with all members of the patient care team. Prereq: 4th yr standing in Veterinary Medicine program. Not open to students with credit for 700.19. Repeatable to a maximum of 12 cr hrs.

7700.20 Applied Veterinary Medicine: Small Animal Neurology V 2
Patient diagnosis and management in the neurology service, including patient care, responsibility, client communication, and interactions with all members of the patient care team. Prereq: 4th yr standing in Veterinary Medicine program. Not open to students with credit for 700.20. Repeatable to a maximum of 12 cr hrs.

7700.21 Applied Veterinary Medicine: Small Animal Oncology V 2
Patient diagnosis and management in the oncology service, including patient care, cytology and imaging interpretation, client communication, and interactions with all members of the patient care team. Prereq: 4th yr standing in Veterinary Medicine program. Not open to students with credit for 700.22. Repeatable to a maximum of 12 cr hrs.

7700.22 Applied Veterinary Medicine: Theriogenology V 2
Clinical experience with diagnosis and treatment of reproductive disorders of dogs, cats, cattle and horses, including assisted reproductive procedures. Prereq: 4th yr standing in Veterinary Medicine program. Repeatable to a maximum of 12 cr hrs.

7700.24 Applied Veterinary Medicine: Preventive Medicine V 2
Clinical experience in population-based medicine, including visits to farms, humane societies, and animal laboratory facilities. Students will learn to recognize, analyze, and manage diseases affecting populations by applying epidemiologic principles. Prereq: 4th yr standing in Veterinary Medicine program. Repeatable to a maximum of 12 cr hrs.

7700.26 Veterinary Surgical Oncology V 2
Senior veterinary students will learn and understand a comprehensive approach to cancer management in small animals. They will learn the principles of surgical oncology, postoperative management, and follow-up care. Prereq: 4th yr standing in Veterinary Medicine. Repeatable to a maximum of 10 cr hrs.

7720.01 Applied Veterinary Medicine: Community Practice Clerkship V 2
Clinical skills taught by physical exam, diagnosis and treatment of client-owned animals in a private practice setting by participating practicing veterinarians. Disease prevention and client education are emphasized including nutrition, vaccinations, parasite control, dentistry, animal behavior, and screening tests. Prereq: Fourth year standing in Veterinary Medicine professional degree program. Repeatable to a maximum of 12 cr hrs.

7720.02 Equine Clinical Clerkship V 2
The purpose of this course is to provide students with primary care experience to develop clinical skills taught by physical exam, diagnosis and treatment of client-owned animals. Disease prevention and client education are emphasized including wellness exams, vaccinations, parasite control, dentistry, lameness, and emergency care. Prereq: Fourth year standing in Veterinary Medicine professional degree program. Repeatable to a maximum of 12 cr hrs.

7720.03 Farm Animal Practice Clerkship V 2
The purpose of this course is to provide students with primary care experience to develop clinical skills taught by physical exam, diagnosis and treatment of client-owned animals. Disease prevention and client education are emphasized including wellness exams, vaccinations, parasite control, herd health, milk quality, nutrition, and lameness. Prereq: Fourth year standing in Veterinary Medicine professional degree program. Repeatable to a maximum of 12 cr hrs.

Veterinary Preventive Medicine

5721 Introduction to Zoonoses U G 2
This course is focused on providing an overview of the basic characteristics of common and emerging diseases that are shared between humans and animals; these diseases are defined as zoonotic. Prereq: AnimSci 3170, 3270, or Microbio 4000, or equiv., or permission of instructor.

7193.01 Individual Studies in Veterinary Preventive Medicine G V 1 - 8
Laboratory and library investigations of animal disease problems involving veterinary preventive medicine. Covers the research experiences for Masters students and Doctoral Students prior to candidacy. Repeatable to a maximum of 60 cr hrs or 60 completions. This course is graded S/U.

7193.02 Independent Study in Veterinary Preventive Medicine G V 1 - 2
Laboratory and library investigations of disease problems involving veterinary preventive medicine. The faculty and student agree on a course project suitable for a letter grade. Prereq: Grad or Prof standing in Veterinary Medicine program, and permission of instructor. Repeatable to a maximum of 5 cr hrs.

7194.01 Group Studies in Veterinary Preventive Medicine G V 1
Group studies course in topic areas of veterinary preventive medicine. Prereq: DVM or equiv., or Grad standing, or Veterinary Medicine program standing. This course is graded S/U.
7194.02  Group Studies in Veterinary Preventive Medicine  G V  3
Group studies course in topic areas of veterinary preventive medicine. 
Prereq: Grad standing, or Veterinary Medicine program standing, or DMV, or equiv. 
Repeatable to a maximum of 15 or hrs.

7612  Nutrition of Food Animals and Equine  V  3
Nutritional diseases and feeding practices for food-producing animals and equine. 
Prereq: First-year, second semester, or second-standing in veterinary medicine program.

7710  Ecosystem Health Conservation Medicine  G V  3
Principles and application of ecosystem health and conservation medicine will be examined 
using the One Health One Medicine paradigm. This course may also serve as a component 
of a non-degree certificate for external veterinarians interested in gaining training in ecosystem 
health, conservation medicine and/or One Health. 
Prereq: CPHR of 2.50 or above, and Grad standing or, 2nd, or 3rd yr standing in Veterinary Medicine program.

7710.54  Applied Veterinary Medicine: Laboratory Animal Medicine  V  2
This course is designed to introduce fourth year veterinary students to all facets of laboratory 
animal medicine and its various disciplines (research, management, clinical medicine, 
diagnostics, husbandry, surgery and pathology). 
Prereq: Fourth-year standing in Veterinary Medicine Program. Repeatable to a maximum of 12 
hrs. This course is graded S/U.

7710.55  Applied Veterinary Medicine: Beef and Dairy Production Medicine  V  2
Students will accompany veterinarians as they provide routine preventive and clinical services 
to dairy and beef cattle. Dairy and production medicine topics will be covered. Students are 
expected to participate in the treatment of patients. 
Prereq: 4th yr standing in the Veterinary Medicine Program. Repeatable to a maximum of 6 or 
hrs. This course is graded S/U.

7710.56  Applied Veterinary Medicine: Capstone Rotation in Dairy Production Medicine  V  2
A two-week capstone clinical rotation in dairy-veterinary production medicine. One week is 
devoted to acquiring, assimilating, and solidifying the principles of dairy production medicine 
through limited didactic instruction and visits to dairy farms. One week is devoted to acquiring 
the fundamentals of reproductive ultrasound through didactic instruction and extensive 
practice. 
Prereq: 4th yr standing in the Veterinary Medicine Program. This course is graded S/U.

7717  Introduction to Shelter Medicine  V  1
An introduction to shelter medicine. Material in the class will focus primarily on basic herd 
health principles and basic operations within a shelter environment.

7719  Microbiome in Health and Disease  G  2
This course is designed to introduce students to host-associated microbial communities 
(specifcally human and animal hosts) and their roles in host health and disease.

7720  Laboratory Animal Medicine  G V  2
Familiarizes students with regulatory and compliance issues, management of animal facilities, 
the scientific basics of laboratory animal medicine, and the design and performance of animal 
experiments. 
Prereq: Not open to students with credit for 721.

7721  Epidemiology of Zoonotic Diseases  G V  3
Basic epidemiology of important zoonotic diseases, focusing on their etiology and 
epidemiology. Common manifestations in humans and animals, diagnostic procedures, and 
specific preventive and control measures. 
Prereq: 2nd, 3rd, or 4th yr standing in Veterinary Medicine program. Not open to students with 
credit for 721.

7722  Foodborne Diseases, Food Animal Production Systems, and Food Safety  G V  3
Overview of how the food chain for the most common products of animal origin works, with 
special emphasis in pre-harvest safety, describes most common food-borne bacterial and viral 
diseases, antimicrobial resistance, HACCP. 
Prereq: Grad standing or enrollment in Veterinary Medicine Program. Not open to students with 
credit for 722.

7723  Biosecurity, Emergency Response & Outbreak Investigation  G V  2
An overview of biosecurity, with special emphasis on bioterorism, preparedness, emergency 
response, risk assessment, and management of zoonotic and foreign animal disease outbreaks. 
Regulations and regulatory agencies will also be presented. 
Prereq: 1st (second semester), 2nd, or 3rd yr standing in Veterinary Medicine program, or 
Grad standing.

7724.01  Environmental Health at the Human-Animal Interface  G V  1
This course will provide an overview of environmental health issues related to human and 
animal interactions and animal agriculture. Topics will include water and air quality, waste 
management, occupational safety, and environmental toxicology.

7725  Applied Veterinary Data Analysis  G  2
Application of statistical methods and procedures that are introduced in the basic biostatistics 
courses offered by CPHR, structure of the course will be interactive in a laboratory setting for 
veterinary public health science students. 
Prereq: PubHBio 6210.

7726  Preventive Medicine Research Design and Methods  G  2
Understanding the process used to plan and execute research studies is crucial for students 
completing their own research projects. This course will introduce students to research 
methods and designs commonly used in veterinary medicine and public health research.

7727  Interdisciplinary Colloquium in Food Safety  G  1
Weekly graduate seminar on current and emerging topics in food safety. Presentations from 
OSU faculty and invited external experts from industry, academia and government. 
This course is graded S/U. Cross-listed in FEScTe.

7730  Emerging Zoonotic Diseases in a Global Context  G V  2
Overview of the most important emerging zoonotic diseases in different geographical regions 
of the world, focusing in their local epidemiology, recent outbreaks, prevention, and potential 
impact in the United States. 
Prereq: 1st (second semester), 2nd, or 3rd yr standing in Veterinary Medicine program; or 
grad standing. Not open to students with credit for 730.

7735  Veterinary Practice Management  G V  1
Provides business skills, knowledge, and information necessary to successfully operate a 
traditional veterinary practice. 
Prereq: Enrollment in DVM program. Not open to students with credit for 750.

7745  Basic Exotic Animal Medicine -- Non Mammalian  V  1
Provide a basic background for a new graduate veterinarian regarding exotic species 
commonly treated in a companion animal setting. Non-mammalian species will be covered 
(fish, amphibians, reptiles). 
Prereq: 1st (second semester), 2nd, or 3rd yr standing in Veterinary Medicine program, or 
Grad standing. Not open to students with credit for VMColl 638.

7760  Opportunities in Global Veterinary Medicine and Public Health  G V  1
This elective course is designed as a preparatory course for veterinary professional (DVM) 
curriculum and Masters of Public Health, MPH-VPH students who plan to engage in 
international and non-traditional veterinary medicine and public health. 
This course is graded S/U.

7761  Tropical Animal Husbandry and Health  G V  1-3
This elective course is designed as a practical international experience for DVM and MPH 
students who plan to engage in international and non-traditional veterinary medicine and public health. 
This course is graded S/U.

7770  Zoo and Wildlife Medicine I  G V  1
General concepts and principles related to zoo and wildlife medicine. Allows Veterinary 
students to increase their exposure to nontraditional fields of practice. 
Prereq: Grad or professional standing in Veterinary Medicine program. Not open to students with 
credit for 770. This course is graded S/U.

7771  Zoo and Wildlife Medicine II  G V  2
Intended for students who have an interest in advancing their clinical and practical knowledge 
of zoo and wildlife medicine. 
Prereq: 7770, and 1st (second semester), 2nd, 3rd, or 4th yr standing in Veterinary medicine program; or 
grad standing. Not open to students with credit for 771.

7773  Bovine Palpation  V  3
Laboratory and lecture based course designed to familiarize the student with the techniques 
of bovine reproductive examination, rectal palpation, ultrasound, pregnancy diagnosis and 
management. 
Prereq: VetClin 7746 and VMColl 6605, and 3rd yr standing in Veterinary Medicine program, and 
a Food Animal, Mixed Animal, or Individualized Career Area of Emphasis, and permission 
of instructor. Not open to students with credit for 796.17.

7774  Bovine Theriogenology  G V  1
Physiology of the estrous cycle and synchronization strategies in the bovine. Techniques such 
as artificial insemination and embryo transfer, causes for embryonic loss, obstetric procedures, 
transition period, and bull fertility will be covered. 
Prereq: 3rd yr standing in Veterinary Medicine program; or DVM or equiv; or permission 
of instructor. Not open to students with credit for 796.18.

7775  Interactive Experiences in Laboratory Animal Medicine  V  1
Provides students with an opportunity to obtain practical and clinical experience with traditional 
laboratory animals and pocket pet species. Coursework is primarily hands-on with 
supplemental online and didactic material. 
Prereq: 7720, and Professional standing in Veterinary Medicine program.

7776  Dairy Herd Management and Preventive Medicine  G V  2
Applications of preventive medicine practices at the dairy herd level (small or large). Herd 
health programs, transition period, and laboratory practices in mastitis control will be covered. 
Prereq: 2nd or 3rd yr standing in Veterinary Medicine program; or grad standing. Not open to 
students with credit for 796.06.
Veterinary Preventive Medicine

7778 Topics in Dairy Production Medicine \hspace{2cm} G V 1
Exposed students to leaders in the dairy industry and production medicine as well as to ideas that they may not be exposed to anywhere else in the veterinary professional curriculum. Prereq: Grad or professional standing in Veterinary Medicine program. Not open to students with credit for 796.16. This course is graded S/U.

7780 Veterinary Forensics \hspace{2cm} V 2
Covers forensic examination of living and deceased victims as well as proper evidence collection and presentation to aid in the conviction of animal abusers. Prereq: Professional standing in Veterinary Medicine program.

7781 Advanced Topics in Zoo and Wildlife Medicine \hspace{2cm} G 1
Designed for residents in ecosystem and wildlife health, this course consists of weekly seminars given by the students and instructors covering current literature and topical overviews as assigned. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

7985.01 Current Topics in Laboratory Animal Medicine \hspace{2cm} G V 1
This journal club is directed at laboratory animal residents, graduate students and veterinary medicine students interested in current topics in laboratory animal medicine. Emphasis is placed on the three most recent years of selected journals. Prereq: Grad standing. Second semester of first-year, or second-year standing in the Veterinary Medicine Program. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

7985.02 Critical Evaluation of the Scientific Literature \hspace{2cm} G V 1
Introduces students to critical reading of scientific literature related to veterinary medicine and public health. During class sessions, relevant scientific articles will be discussed and critically reviewed using faculty-guided discussions. Prereq: Professional standing in Veterinary Medicine Program. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

7985.03 Critical Evaluation of the Scientific Literature \hspace{2cm} G 1
Introduces students to critical reading of scientific literature related to veterinary medicine and public health. During class sessions, relevant scientific articles will be discussed and critically reviewed using faculty-guided discussions. Prereq: Grad or professional standing in Veterinary Medicine Program.

7996 Veterinary Disaster Response \hspace{2cm} G V 1
This course is delivered online in an asynchronous format. Students will be expected to complete relevant Federal Emergency Management Agency courses online designed to familiarize students with the Incident Command Structure and animal disaster response. Prereq: Current standing in CVMM. This course is graded S/U.

7998 Culminating Project in Veterinary Public Health \hspace{2cm} G V 1 - 3
The final project for the veterinary MPH degree that can be a research report, program evaluation, or grant proposal. Prereq: Enrollment in the MPH degree program, and permission of advisor or director of VPH program. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

8613 Preventing Metabolic Diseases and Records Analysis \hspace{2cm} G V 3
Feeding management of dairy cattle for the prevention of metabolic diseases and analysis of dairy records for production medicine decisions. Prereq: 8796.06 or AnimSci 3130 or equiv; and third or fourth-year standing in professional program in Veterinary Medicine, Grad standing, or permission of instructor. Not open to students with credit for 796.13, or in same term as AnimSci 6303.

8700 Molecular Epidemiology of Infectious Diseases \hspace{2cm} G V 3
Comprehensive overview and detailed discussion on the core molecular approaches that are and can be used in addressing population medicine issues and application of molecular techniques in infectious diseases. Prereq: Not open to students with credit for 700.

8725 Quantitative Methods Capstone Seminar \hspace{2cm} G 3
This seminar is a capstone experience. Much of the work will be student-identified and student-led. The course will consist of work in: identification of new or emerging topics or software in quantitative methods; readings and discussion on advanced topics; student-led demonstrations or presentations; and a final paper. Prereq: Basic statistics and study design or epidemiology courses. Cross-listed in ESOREM and HDFS.

8782 Veterinary Clinical Epidemiology \hspace{2cm} G 1
Intended for clinical residents and veterinary graduate students with a strong interest in the application of epidemiology concepts to the clinical practice of veterinary medicine. Prereq: DVM or equiv, or permission of instructor. Not open to students with credit for 820.

8810 Advanced Concepts and Applications in Veterinary Epidemiology \hspace{2cm} G V 1
In-depth exploration of philosophies that serve as the foundation for the science of epidemiology as it is applied to veterinary medicine. Instructor-guided discussions, assigned readings, and application activities. Prereq: 7721 or VMCol 6646; and VMCol 6510, or PUBHEPi 6410 or 6430.

8830 Modeling Transmission and Control of Infectious Diseases in Humans and Animals \hspace{2cm} G V 3
Infectious disease modeling is a methodology used to study transmission dynamics in humans and animals and simulate disease control programs. This course provides an introduction to applied infectious disease modeling suitable for advanced undergraduate students, graduate students, health professional students, and health professionals. Prereq: 1st (second semester), 2nd, 3rd, or 4th yr standing in Veterinary Medicine Program, or Grad standing. Cross-listed in PUBHEPi 5345.

8851 Laboratory Animal Medicine I \hspace{2cm} G 2
A series of courses providing the student with a comprehensive view of lab animal medicine practice. Includes diseases, preventive medicine, effective management of an animal care program, performance of research, and facility design. Prereq: Grad standing in Veterinary Medicine program. Not open to students with credit for 793.01.

8852 Laboratory Animal Medicine II \hspace{2cm} G 2
Second in a series of courses to provide students with a comprehensive view of the lab animal medicine practice. Includes diseases, preventive medicine, effective management of an animal care program, performance of research and facility design. Prereq: Grad standing in Veterinary Medicine program. Not open to students with credit for 793.02.

8853 Laboratory Animal Medicine III \hspace{2cm} G 2
Third in a series of courses providing the student with a comprehensive view of lab animal medicine practice. Includes diseases, preventive medicine, effective management of an animal care program, performance of research and facility design. Prereq: Grad standing in Veterinary Medicine program. Not open to students with credit for 793.03.

8854 Laboratory Animal Medicine IV \hspace{2cm} G 2
Fourth in a series of courses providing students with a comprehensive view of lab animal medicine practice. Includes diseases, preventive medicine, effective management of an animal care program, performance of research and facility design. Prereq: Grad standing in Veterinary Medicine program. Not open to students with credit for 793.04.

8855 Laboratory Animal Medicine V \hspace{2cm} G 2
Fifth in a series of courses providing students with a comprehensive view of lab animal medicine practice. Includes diseases, preventive medicine, effective management of an animal care program, performance of research and facility design. Prereq: Grad standing in Veterinary Medicine program. Not open to students with credit for 793.05.

8856 Laboratory Animal Medicine VI \hspace{2cm} G 2
Sixth in a series of courses providing students with a comprehensive view of lab animal medicine practice. Includes diseases, preventive medicine, and effective management of an animal care program, performance of research and facility design. Prereq: Grad standing in Veterinary Medicine program. Not open to students with credit for 793.06, 793.07, and 793.08.

8891.01 Comparative and Veterinary Medicine Graduate Student Seminar \hspace{2cm} G 1
Research seminars are the foundation of scientific discourse. This course provides graduate students with experience presenting their research and evaluating presentations by others. Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

8891.02 Comparative and Veterinary Medicine Graduate Student Seminar \hspace{2cm} G 1
Research seminars are the foundation of scientific discourse. This course provides graduate students with experience presenting their research and evaluating presentations by others. Repeatable to a maximum of 3 cr hrs.

8999 Research in Veterinary Preventive Medicine \hspace{2cm} G 1 - 10
Research for dissertation purposes only. Repeatable to a maximum of 60 cr hrs or 60 completions. This course is graded S/U.

Vision Science

5500 Global Issues in Eye Care \hspace{2cm} U G 1
Designed for students with diverse backgrounds in healthcare. This course will provide an overview of the common causes of vision impairment and eye disease. Means to eliminate avoidable blindness will also be discussed. Prereq: Not open to students with credit for 781.

999 Individual Studies in Vision Research \hspace{2cm} U G 1 - 8
Individual investigation of a research problem related to vision and/or the eye. Prereq: Permission of instructor. Not open to students enrolled concurrently in 8999. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

6100 General and Histological Anatomy \hspace{2cm} Q 4
Gross and microscopic anatomy of the body with emphasis on head and neck anatomy and organ systems. Prereq: 1st yr standing in Optom.
6110 General and Visual Neuroanatomy  G O  4
Anatomy of the central and peripheral nervous system with special emphasis on autonomic system and anatomy of the visual system.
Prereq: 1st yr standing in Optom. Not open to students with credit for 531 or 608.

6130 Pathophysiology I  O  5
Provides a comprehensive introduction to pathology, including: inflammation, genetic disease, and neoplasia. Pathophysiology of blood, GI, endocrine, and respiratory systems will be examined in detail.
Prereq: 1st yr standing in Optom.

6140 Pathophysiology II  G O  5
The pathophysiology of the nervous system, muscle systems, cardiovascular, renal, and immune systems. Students will integrate information from VisSci 6130.
Prereq: 2nd yr standing in Optom.

6150 Biochemistry for Optometry  O  1
This course is designed to help optometry students integrate biochemistry with concepts related to ocular pathology, and therapeutic treatment.
Prereq: 1st yr standing Optom.

6170 Microbiology for Optometry  O  1
This course is designed to help optometry students integrate microbiology with concepts related to ocular pathology, and therapeutic treatment.
Prereq: 1st yr standing in Optom.

6300 Visual Neurophysiology and Perception  O  5
Spatial, temporal and chromatic aspects of visual sensation by retina, lateral geniculate, cortex and other brain centers; psychophysics of visual perception; disorders affecting visual pathway.
Prereq: 2nd yr standing in Optom.

6320 Eye Movements and Binocular Vision  O  5
Characteristics of and clinical evaluation of monocular and binocular eye movements.
Prereq: 2nd yr standing in Optom.

6500 Geometric Optics  G O  5
Vergence, ray tracing and image formation. Refracting and reflecting surfaces, lenses, prisms, model eyes. Magnification, apertures and stops, astigmatism, prismatic effects of lenses, aberrations.
Prereq: 1st yr standing in Optom.

6520 Optics of the Eye  G O  4
Optics of ametropias and their correction, classification and etiology of refractive errors, schematic eyes, retinal image size, optics of clinical instruments, optics of accommodation, aberrations of the eye.
Prereq: 1st yr standing in Optom.

6540 Physical Optics and Photometry  O  2½
Principles of photometry and colorimetry; light sources; diffraction, polarization, interference, electromagnetic waves, quantum optics, lasers.
Prereq: 1st yr standing in Optom.

6700 Ocular Anatomy  G O  4
Human gross anatomy of the head and neck with special emphasis on the eye and orbit; histology and embryology of the eye and associated structures.
Prereq: 1st yr standing in Optom.

6720 Ocular Physiology  G O  3
Functions and organic processes of the components of the eye and surrounding structures.
Prereq: 1st yr standing in Optom.

7101 Basics of Graduate Work  G 1
Basic information for graduate work, such as citation management, writing abstracts, making presentations.
This course is graded S/U.

7620 Public Health and Environmental Vision  G O  3
Public health/community aspects of providing vision care, health care organizations and policies, vision standards, environmental vision, eye hazards and eye protection.
Prereq: 3rd yr standing in Optom.

7940 Oral Presentation of Scientific Research  G 1 - 3
Student gives a talk based on his/her research or scholarship and improves his/her speaking skills.
Prereq: Grad standing in VisSci. Repeatable to a maximum of 10 cr hrs or 10 completions. This course is graded S/U.

7950 Seminar in Vision Science  G ½ - 1
Series of seminars dealing with new developments in the various areas of vision science.
Prereq: Grad standing in VisSci. Repeatable to a maximum of 24 cr hrs or 24 completions. This course is graded S/U.

7960 Ethics in Biomedical Research  G 2
Provides a general understanding of the issues surrounding the ethical conduct of science including issues related to research involving human subjects, scientific misconduct, and authorship of scientific papers. Real-life case studies will be used.
This course is graded S/U.

7970 Grantmanship  G 2
The structure of the National Institutes of Health, the principles of good grantmanship, and description of the grant review process. Emphasis focused on Mentored Clinical Scientist Development Award (K23) and Research Project Grant (RO1).
Prereq: Grad standing in VisSci. Repeatable to a maximum of 4 cr hrs.

7980 Statistics in Clinical Research  G 3
Introduction to the basic concepts and methods of statistical analysis of clinical research data. Statistical software packages will be demonstrated along with interpretation of output.
Prereq: Grad standing in VisSci. Repeatable to a maximum of 6 cr hrs or 2 completions.

7990 Assessing the Literature  G O ½ - 2
In-depth discussion of scientific papers.
Prereq: Grad standing in VisSci. Not open to students with credit for 799. Repeatable to a maximum of 20 cr hrs or 8 completions. This course is graded S/U.

8001 Anatomy and Physiology of the Eye  G 2
Advanced gross anatomy and vegetative physiology and molecular biology of the eye.
Prereq: Grad standing in VisSci, or permission of instructor. Not open to students with credit for 8040.

8002 Ocular Motility and Binocular Vision  G 2
Advanced topics on eye movements, ocular motility, and sensorimotor aspects of visual perception and binocular vision.
Prereq: 6300 and 6320, or permission of instructor. Not open to students with credit for 8020.

8003 Visual Sensory Processes  G 2
Neurophysiology of the retina, the ascending visual pathway, and the brain, and their functional significance.
Prereq: Enrollment in Vision Science Grad program, or permission of instructor. Not open to students with credit for 8030.

8004 Optics of the Eye and Specification of the Visual Stimulus  O  2
Ocular image-forming mechanisms of the eye and optics of ophthalmic instrumentation, specification of light, calibration, and control of intensity and spectral composition of light.
Prereq: Grad standing in VisSci program, or permission of instructor.

8101 Designing Clinical Studies  G 1
Learn to design clinical studies to appropriately answer important clinical research questions.

8103 Circadian Rhythms and the Eye  G 2
Advanced topics in chronobiology with emphasis on the role of the eye in synchronizing circadian rhythms to the external environment.

8104 High Resolution Imaging of the Eye  G 2
Optical imaging of the human retina now allows visualization of single cells in vivo. This course will describe how this is achieved and detail the application to retinal and optic nerve diseases.

8105 Advanced Ocular Motility  G 1
The basics of experimental design in ocular motility studies including equipment choices, properties of eye movements, and data analyses.
Prereq: 8002 or 8020.

8106 Refractive Error Development  G 2
Students learn about ocular changes that lead to the development of refractive error in children.
Prereq: Grad Standing in Vision Science or related discipline.

8107 Basic Science Experimental Design  G 2
Teaches various aspects of designing basic science experiments, from choosing controls to data analysis.

8108 Introduction to Matlab  G 2
An introduction to Matlab and its applications in research.
Prereq: Grad standing in VisSci or related discipline.

8109 Psychophysics  G 2
This course will cover visual psychophysical techniques commonly used in clinical research.
Prereq: Grad standing in VisSci.

8111 Advanced Topics in Low Vision  G 1
Advanced topics in models for rehabilitation, patient-reported outcomes measurement, and psychophysical testing of people with permanent vision impairment.
Prereq: Grad standing in VisSci.

8112 Advanced Binocular Vision and Visual Plasticity  G 1
Structural, molecular, and functional considerations of mechanisms underlying visual plasticity.
Prereq: Grad standing in VisSci or related discipline.

8113 Clinical Trials in Binocular Vision  G ½
Review of recent clinical trials in binocular vision, such as amblyopia and intermittent exotropia.
Prereq: Grad standing in VisSci.
Advanced Contact Lens Topics
8115 Effective Scientific Presentation Skills
8116 Scientific Writing
8999 Research for Dissertation or Thesis

Welding Metallurgy I
Resistance Welding Processes
Scientific Writing
Brazing and Soldering
Solid-State Welding/Joining
Individual Studies in Welding Engineering
Welding Design
High Energy Density Welding Processes
Introductory Arc Welding Laboratory
Group Studies in Welding Engineering
Adhesive Bonding and Mechanical Joining of Plastics
Computational Modeling of Additive Manufacturing and Welding
Physical Principles in Welding Processes II
Weldability
Computational Thermodynamics and Kinetics

Welding Engineering

Introduction to Welding Engineering
Introductory Arc Welding Laboratory
Individual Studies in Welding Engineering
Physical Principles in Welding Processes I
Physical Principles in Welding Processes II
Resistance Welding Processes
Solid-State Welding/Joining
Brazing and Soldering
High Energy Density Welding Processes
Welding Metallurgy I
Welding Metallurgy II

Advanced topics related to contact lens materials and care, lens modalities, advanced fitting techniques, adverse events and regulations.
Prereq: Grad standing in VisSci.
Develop skills to communicate scientific findings using a variety of presentation formats.
Prereq: Grad standing in VisSci or related discipline.
Developing effective scientific writing skills.
Prereq: Enrollment in VisSci PhD program, or permission of instructor.
Research on thesis or dissertation project only.
Prereq: Grad standing in VisSci. Repeatable to a maximum of 90 cr hrs or 15 completions. This course is graded S/U.
Study of the principles of welding engineering, including processes, design, weldability of materials, codes and standards, and quality assurance.
Prereq: MatScEng 2010, Physics 1251, and WeldEng-BS student; or permission of instructor.
Basic skills required for manual and semiautomatic arc welding processes.
Prereq: Chem 1250 or 1210; and Math 1151 or 1161; and Physics 1250 or 1260; and enrollment as WeldEng-BS major or pre-major student; or permission of instructor.
Investigations in areas of advanced non-thesis research. Library and/or research investigations under the directions of instructors. Comprehensive report required. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions. This course is graded S/U.
Investigations in areas of advanced non-thesis research. Library and/or research investigations under the directions of instructors. Comprehensive report required.
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions.
Study of the application of physical principles in engineering of arc welding processes and equipment.
Prereq: 2001 or 3001, and enrollment in the WeldEng-BS major. Prereq or concour: ECE 2300; or permission of instructor.
Study of the application of physical principles in engineering of non-arc welding processes and equipment.
Prereq: 2001 or 3001, and enrollment in the WeldEng-BS major or MatScEn-BS major; or permission of instructor.
Addresses the fundamentals, theory, and application of Resistance Welding processes, with emphasis on processes, equipment, materials, and quality control.
Prereq: 4002, and enrollment as WeldEng-BS major; or permission of instructor. Not open to students with credit for 602 or 702.
The welding and joining of materials in the solid state with emphasis on physical processes and metallurgical principles.
Prereq: 4002, and enrollment in the WeldEng-BS or MatScEn-BS major; or permission of instructor.
Brazing and soldering processes with emphasis on physical and metallurgical principles, materials, design and application considerations.
Prereq: 2001 or 3001 and MatScEn 2251, and enrollment in the WeldEng-BS or MatScEn-BS major; or permission of instructor.
Theory and practice of laser, electron beam, and other high energy density welding processes.
Prereq: 4001, and enrollment as a WeldEng-BS or MatScEn-BS major; or permission of instructor. Not open to students with credit for 704.
Application of physical metallurgy principles to nonequilibrium thermo-mechanical conditions associated with welding in structural alloys and focus on carbon steels. Includes welding metallurgy laboratories.
Prereq: MatScEn 2251 and 3141, and enrollment as a WeldEng-BS or MatScEng-BS major. Not open to students with credit for 4611.
Addresses the welding metallurgy and weldability principles associated with stainless steels, nickel-base, aluminum-base, and titanium-base alloys and other nonferrous alloys. Includes laboratories.
Prereq: 4101, and enrollment as WeldEng-BS major; or permission of instructor. Not open to students with credit for 4612.
Teaches the basic concepts of weldability and focuses on failure mechanisms in welded construction. Failure phenomena that occur during fabrication, repair, and during service are discussed.
Prereq: 4101, and WeldEng-BS major; or permission of instructor. Not open to students with credit for 714 or 715.
Theory of temperature, stress, deformation and phase transformation for additive manufacturing and welding, as well as application of industry-standard simulation codes.
Prereq: 4201, or permission of instructor.
Comprehensive background on computational thermodynamics and kinetics. Includes focus on CALPHAD (Calculation of Phase Diagram) methodology.
Prereq: MatScEn 2251 and 3141 or equivalents; or Grad standing in MatScEn or WeldEng; or permission of instructor. Not open to students with credit for 7121. Cross-listed in MatScEn 5261.
Experience in an industrial organization and the submitting of an acceptable report on the work done.
Prereq: 4002 and 4002, and enrollment as a WeldEng-BS major; or permission of instructor. Not open to students with credit for 489.
Non-thesis research investigations under the directions of instructors. Comprehensive report required.
Prereq: Enrollment as a WeldEng-BS major or MatScEn-BS major; and permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions. This course is graded S/U.
Non-thesis research investigations under the directions of instructors. Comprehensive report required.
Prereq: Enrollment as a WeldEng-BS major or MatScEn-BS major; and permission of instructor. Repeatable to a maximum of 12 cr hrs or 12 completions.
Special topics in Welding Engineering. Topic, credit hours, and instructor will be announced in the preceding semester. Repeatable to a maximum of 12 cr hrs or 6 completions.
Fundamentals of engineering analysis of heat flow, thermal and residual stresses, and fracture and fatigue with applications to design and simulation in welding and manufacturing.
Prereq: 2001 or 3001; and Math 2177, or 2255, or 2415, or 2174; and MechEng 2040 or 2020; and Engr 1221 or 1281H; and enrollment in WeldEng major; or permission of instructor.
Fundamentals of design and application of codes and standards for welded structures.
Prereq: 4201, and enrollment as a WeldEng-BS major; or permission of instructor. Not open to students with credit for 621 or 641.
The interrelationship of design, fabrication, nondestructive evaluation, fracture mechanics, and reliability concepts in establishing the overall fitness-for-purpose of welded structures.
Prereq: 4201, and enrollment as a WeldEng-BS major; or permission of instructor. Not open to students with credit for 740.
Main concepts of Nondestructive Evaluation of materials as applied to inspections of joints and structures; principles of conventional methods and their capabilities and limitations.
Prereq: 4201, and enrollment as a WeldEng-BS major; or permission of instructor. Not open to students with credit for 631.
Theory and practice in welding of plastics and polymeric composites, including theory and analysis of welding processes, part and joint design, and process selection.
Prereq: 4201, and enrollment as a WeldEng-BS major; or permission of instructor. Not open to students with credit for 706.
Fundamentals of adhesive bonding science and technology and methods for mechanical joining of plastics including fasteners, snap-fits, press-fits, swaging, and staking.
Prereq: 4201, and enrollment as a WeldEng-BS major; or permission of instructor. Not open to students with credit for 707.
4595 Topics in Welding Engineering  U  1
Theory and application of novel and hybrid welding processes.
Pre-req: 2001, or permission of instructor.

4602 Welding Procedure Development and Qualification  U  3
National and international welding codes. Approaches to development of welding procedures and qualification of welding procedures and personnel.
Pre-req: 4002, and enrollment in the WeldEng-BS major, or permission of instructor.

4606 Welding Robot Programming and Operations  U  1
Laboratory experience programming and operation of robotic welding systems.
Pre-req: 2001 or 3001, and enrollment in the WeldEng-BS major, or permission of instructor.

4901 Capstone Welding Design I  U  2
Group design projects building on all aspects of Welding Engineering.
Pre-req: Sr standing in WeldEng-BS major, or permission of instructor. Not open to students with credit for 690 and 691.

4902 Capstone Welding Design II  U  3
Group design projects building on all aspects of Welding Engineering.
Pre-req: 4901, and enrollment as a WeldEng-BS major, or permission of instructor. Not open to students with credit for 692.

4998 Undergraduate Research in Welding Engineering  U  1 - 3
Opportunity for supervised undergraduate research in Welding Engineering. Pre-req: Enrollment as a WeldEng-BS major, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions.

4999 Undergraduate Research  U  ½ - 3
Supervised undergraduate research on topics in Welding Engineering (non-honors version).
Pre-req: Enrollment in WeldEng-BS major, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions.

499H Undergraduate Honors Research in Welding Engineering  U  1 - 3
Honors program students are offered the opportunity for supervised undergraduate research in Welding Engineering. Student presentation and thesis writing included.
Pre-req: Honors standing, enrollment as a WeldEng-BS major, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions.

5193.01 Individual Studies in Welding Engineering  U G  0 - 6
Investigations in areas of advanced non-thesis research. Library and/or research investigations under direction of instructor(s). Comprehensive report required.
Pre-req: Enrollment in MatEng-BS or WeldEng-BS major, or Grad standing in Engr, or permission of instructor. This course is graded S/U.

5193.02 Individual Study in Welding Engineering  U G  ½ - 6
Investigations in areas of advanced non-thesis research. Library and/or research investigations under direction of instructor(s). Comprehensive report required.
Pre-req: Enrollment in MatEng-BS or WeldEng-BS major; or Grad standing in Engr; or permission of instructor. Repeatable to a maximum of 12 cr hrs or 10 completions.

5193.01 Individual Studies in Welding Engineering  G  ½ - 6
Investigations in areas of advanced non-thesis research. Library and/or research investigations under direction of instructor(s). Comprehensive report required.
Pre-req: Grad standing in Engr, Math, Physics, or Chem; or permission of instructor. Repeatable to a maximum of 12 cr hrs or 10 completions. This course is graded S/U.

5193.02 Individual Studies in Welding Engineering  G  ½ - 6
Investigations in areas of advanced non-thesis research. Library and/or research investigations under direction of instructor(s). Comprehensive report required.
Pre-req: Grad standing in Engr, Math, Physics, or Chem; or permission of instructor. Repeatable to a maximum of 12 cr hrs or 10 completions. This course is graded S/U.

6194 Group Studies in Welding Engineering  G  1 - 4
Special topics in Welding Engineering. Topic, credit hours, and instructor will be announced in the preceding semester.
Pre-req: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 8 completions.

6999 Graduate Research in Welding Engineering  G  ½ - 18
Research for thesis purposes only. Repeatable to a maximum of 45 cr hrs or 15 completions. This course is graded S/U.

7001 Physical Principles in Welding Processes I  G  3
Study of the application of physical principles in engineering of arc welding processes and equipment.
Pre-req: Grad standing, or permission of instructor. Not open to students with credit for 4001 (500) or 600.

7002 Physical Principles in Welding Processes II  G  3
Study of the application of physical principles in engineering of non-arc welding processes and equipment.
Pre-req: 7001 or 4001, and Grad standing; or permission of instructor. Not open to students with credit for 4002 (600) or 601.

7012 Resistance Welding Processes  G  3
Addresses the fundamentals, theory, and application of Resistance Welding processes, with emphasis on processes, equipment, materials, and quality control.
Pre-req: 7002 or 4002, and Grad standing; or permission of instructor. Not open to students with credit for 4012 (602) or 702.

7021 Solid-State Welding/Joining  G  3
The welding and joining of materials in the solid state with emphasis on physical processes and metallurgical principles.
Pre-req: 7001, 7002, 7101, 7102, 4001, 4002, 4101, or 4102, and Grad standing; or permission of instructor. Not open to students with credit for 4021 (701).

7023 Brazing and Soldering  G  3
Brazing and soldering processes with emphasis on physical and metallurgical principles, materials, design and application considerations.
Pre-req: 7101 or 4101, and 7102 or 4102, and Grad standing; or permission of instructor. Not open to students with credit for 4023 (703).

7024 High Energy Density Welding Processes  G  2
Theory and practice of laser, electron beam, and other high energy density welding processes.
Pre-req: Grad standing, or permission of instructor. Not open to students with credit for 4024.

7101 Welding Metallurgy I  G  3
Application of physical metallurgy principles to nonequilibrium thermo-mechanical conditions associated with welding in structural alloys and focus on carbon steels.
Pre-req: Grad standing, or permission of instructor. Not open to students with credit for 4101 (610) or 611.

7102 Welding Metallurgy II  G  3
Addresses the welding metallurgy and weldability principles associated with stainless steels, and nickel-base, aluminum-base, and titanium-base alloys.
Pre-req: 7101 or 4101, and Grad standing; or permission of instructor. Not open to students with max credit for 4102 (612).

7112 Weldability  G  3
Teaches the basic concepts of weldability and focuses on failure mechanisms in welded construction. Failure phenomena that occur during fabrication, repair, and during service are discussed.
Pre-req: Grad standing, or permission of instructor. Not open to students with credit for 4112 (714) or 715.

7115 Computational Modeling of Additive Manufacturing and Welding (Grad)  G  3
Graduate-level instruction on the theory of temperature, stress, deformation and phase transformation for additive manufacturing and welding, as well as application of industry-standard simulation codes.
Pre-req: Grad standing in Engineering, Mathematics, Physics, or Chemistry; or permission of instructor. Not open to students with credit for 4115.

7121 Computational Thermodynamics and Kinetics  G  2
Comprehensive background on computational thermodynamics and kinetics. Includes focus on CALPHAD (Calculation of Phase Diagram) methodology.
Pre-req: MatScEn 2251 and 3151, or equiv, or Grad standing in MatScEn or WeldEng, or permission of instructor. Not open to students with credit for 4121. Cross-listed in MatScEn 5321.

7123 Advanced Metallurgy for Brazing and Soldering  G  3
Graduate level physical-chemical concepts of brazability and solderability of metals, ceramics, and glasses and focuses on wetting by liquid fillers metals, interfacial reactions, phase compositions of joint metal, hetero-diffusion, liquid embrittlement, as well as strength and reliability of brazed and soldered joints manufactured in aerospace, electronic, optical, mining, and other industries.
Pre-req: 4023 or 7023, and Grad standing; or permission of instructor.

7193.01 Individual Studies in Welding Engineering  G  ½ - 6
Non-thesis research investigations under the directions of instructors. Comprehensive report required. Repeatable to a maximum of 12 cr hrs or 12 completions. This course is graded S/U.

7193.02 Individual Studies in Welding Engineering  G  ½ - 6
Non-thesis research investigations under the directions of instructors. Comprehensive report required. Repeatable to a maximum of 12 cr hrs or 12 completions.

7194 Group Studies in Welding Engineering  G  1 - 4
Special topics in welding engineering; topic, credit hours, and instructor will be announced in the previous semester.
Pre-req: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 8 completions.

7201 Engineering Analysis for Design and Simulation  G  4
Fundamentals of engineering analysis of heat flow, thermal and residual stresses, and fracture and fatigue with applications to design and simulation in welding and manufacturing.
Pre-req: Grad standing, or permission of instructor. Not open to students with credit for 4201 (620) or 621.
464 Welding Engineering

7202 Welding Design G 3
Fundamentals of design and application of codes and standards for welded structures. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 4202 (641) or 621.

7240 Fitness-for-Service of Welded Structures G 2
The interrelationship of design, fabrication, nondestructive evaluation, fracture mechanics, and reliability concepts in establishing the overall fitness-for-purpose of welded structures. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 4240 (740).

7301 Nondestructive Evaluation G 3
Main concepts of Nondestructive Evaluation of materials as apply to inspections of joints and structures; principles of conventional methods, their capabilities and limitations. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 4301 (631).

7406 Welding of Plastics and Composites G 3
Theory and practice in welding of plastics and polymeric composites, including theory and analysis of welding processes, part and joint design, and process selection. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 4406 (706).

7407 Adhesive Bonding and Mechanical Joining of Plastics G 2
Fundamentals of adhesive bonding science and technology and methods for mechanical joining of plastics including fasteners, snap-fits, press-fits, swaging, and staking. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 4407 (707).

7611 Welding Metallurgy Laboratory I G 1
Fundamental understanding of microstructure evolution in alloys and steels during heat treatment, as well as welding through various characterization techniques. Prereq: Grad standing. Concur: 4101 or T401, or permission of instructor. Not open to students with credit for 4611 (661).

7612 Welding Metallurgy Laboratory II G 1
Offered in conjunction with 7102 - Welding Metallurgy II. The course demonstrates microstructure evolution and weldability principles in stainless steels and nonferrous alloys. Prereq or concur: 7102, and Grad standing; or permission of instructor. Not open to students with credit for 4612 (662).

7895 Graduate Seminar G 1
Presentations and discussion by graduate students and invited outside speakers on thesis research and current problems in Welding Engineering. Prereq: Grad standing in WeldEng. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

8193.01 Individual Studies in Welding Engineering G ½ - 6
Non-thesis research investigations under the directions of instructors. Comprehensive report required. Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 12 or hrs or 12 completions. This course is graded S/U.

8193.02 Individual Studies in Welding Engineering G ½ - 6
Non-thesis research investigations under the directions of instructors. Comprehensive report required. Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 12 or hrs or 12 completions.

8194 Group Studies in Welding Engineering G 1 - 4
Special topics in Welding Engineering. Topic, credit hours, and instructor will be announced in the preceding semester. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs or 8 completions.

8999 Graduate Research in Welding Engineering G ½ - 18
Research for dissertation purposes only. Repeatable to a maximum of 60 cr hrs or 20 completions. This course is graded S/U.

Women's, Gender, and Sexuality Studies

1110 Gender, Sex and Power U 3
Introduces students to the study of gender, sex, and power. We will draw on a variety of literatures to analyze gender, race, sexuality, and other identities. We will place the study of US women in broader transnational contexts. GE cultures and ideas and soc sci indivs and groups and diversity soc div in the US course.

1110H Gender, Sex and Power U 3
Introduces students to the study of gender, sex, and power. We will draw on a variety of literature to analyze gender, race, sexuality, and other identities. We will place the study of US women in broader transnational context. Prereq: Honors standing, or permission of instructor. Not open to students with credit for 110, 110H, WomSt 101, 101H, 110, or 110H. GE cultures and ideas and soc sci indivs and groups and diversity soc div in the US course.

2194 Group Studies U 1 - 3
Special studies not otherwise offered. Repeatable to a maximum of 6 cr hrs or 2 completions.

2215 Reading Women Writers U 3
Study of women writers' strategies for articulating experiences and using literature as a lens for social reality and catalyst for social and political change. Prereq: Not open to students with credit for 215. GE lit course.

2230 Gender, Sexuality and Race in Popular Culture U 3
Explores how popular culture generates and articulates our understandings of gender and sexuality and their intersections with race and class. Prereq: Not open to students with credit for 230. GE VPA course.

2260 Queer Ecologies: Gender, Sexuality, & the Environment U 3
Queer ecologies seek to disrupt the gendered and heterosexual assumptions embedded in how we understand the environment, nature, and bodies (human and animal). From animal studies, queer and feminist social movements for environmental justice, trans*atures, and sexual politics. Queer Ecologies will articulate a commitment to new thinking about the challenges of planetary and climate change. GE cultures and ideas and soc sci human, nat, and econ resources course.

2282 Introduction to Queer Studies U 3
Introduces and problematizes foundational concepts of the interdisciplinary field of queer studies, highlighting the intersections of sexuality with race, class, and nationality. Prereq: Not open to students with credit for English 2282. GE cultures and ideas and diversity soc div in the US course. Cross-listed in English.

2296H Topics in Women's, Gender and Sexuality Studies U 3
In-depth study in women's, gender and sexuality studies focusing on current issues in feminist analysis. Prereq: Honors standing.

2300 Approaches to Feminist Inquiry U 3
Introduction to principles of feminist analysis as they apply to a range of contemporary issues and institutions. Prereq: Not open to students with credit for 300.

2305 A World of Genders and Sexualities U 3
Investigates gender and sexuality in transnational and cross-cultural perspective.

2306 Girlhood U 3
An examination of the contemporary contexts and social differences of female adolescence, including race, ethnicity, location, sexuality, class.

2317 Gender at the Movies: Hollywood and Beyond U 3
A study of the representation of gender in relationship to race, sexuality, and class in cinema. Topics may include stardom, genre, narrative, national cinemas, women and minority filmmakers, and film history. Prereq: Not open to students with credit for 3317. GE VPA course.

2325 Health and Inequality U 3
An interdisciplinary inquiry into the relationships between health and gender under political, biological, economic, spiritual, cultural and/or socially constructed influences.

2326 Feminist Perspectives on Addiction U 3
An interdisciplinary feminist focus on addictive consequences of sex-role socialization, substance abuse, addiction in intimate relationships, and eating disorders; consequences of addiction among women.

2326S Feminist Perspectives on Addiction, Service Learning U 3
Combines the study of feminist scholarship on addiction and volunteer work at a local organization that provides services to persons with substance-abuse issues. Students will use the course material and tools of analysis to think and write critically about their volunteer experiences. It is strongly suggested that students take WGSST 1110 or another WGSST course prior to enrolling. Prereq: Not open to students with credit for 2326.

2327 Embodying Gender, Race & Ethnicity U 3
This course examines through a feminist lens how the body is situated, lived, interpreted, and constructed in culture. The course focuses on intersectionality as a key issue in understanding how the body's gender, race, sexuality, health, physical abilities, and class/economic situation are interconnected. GE cultures and ideas course.

2340 Latina Experience in the U.S. U 3
Introduces the important and far reaching issues of Latinas today, recognizing the contributions of these women to U.S. history, the women's movement and feminism. Prereq: Not open to students with credit for 340.

2350 Feminist Perspectives on Women and Violence U 3
Uses an interdisciplinary feminist approach to analyze selected issues of interpersonal and institutionalized violence in which women are victims or perpetrators. Prereq: Not open to students with credit for 350.

2367.01 U.S. Women Writers: Text and Context U 3
Writing about and analysis of female experiences as represented in U.S. literature by women; emphasis on interdisciplinary relationships between literature and socio-political history. Prereq: English 1110 (110), and Soph standing. Not open to students with credit for 367.01. GE writing and comm: level 2 and lit and diversity soc div in the US course.
Women's, Gender, and Sexuality Studies  465

3300.015 Feminist Perspectives of Incarceration in the US  U  3
This course explains the growth in the US prison system and its punitive shift from feminist, anti-racist, and queer perspectives. Students will learn about the historical and ongoing disproportionate incarceration of the poor, people of color, and gender non-conforming people. This service-learning course is an Inside-Out Prison Exchange Program class to be offered in Spring semesters.
Prereq: Permission of Instructor.

3302 Gender, War & Peacebuilding  U  3
Feminist scholars have demonstrated the multiple and complex ways that gender norms are implicit to the processes of war, militarism, and peace and have examined gender as a system of power that is both instrumental in, and constituted by, militarism and armed conflict. This course explores war and peace as gendered phenomena reliant on socially constructed norms. Students are strongly encouraged to have taken WGSSt 1110 prior to this course.

3306 Gender, Media, and New Technologies  U  3
Explores how race, gender, class, sexuality, and physical ability discourses of the real world are or aren’t redefined in the virtual world.

3310 Science Fiction: East vs. West  U  3
Slavic, American, and British sci-fi on page and screen as reflection of major cultural concerns: progress, utopia, human perfectibility, limits of science and knowledge, gender, identity. Taught in English.
Prereq: Not open to students with credit for Slavic 3310 or 3320. GE VPA and diversity global studies course. Cross-listed in Slavic.

3320 Topics in Women's, Gender and Sexuality Studies  U  3
Provides in-depth analyses of specific topics in the areas of difference and diversity, culture and representation, and political contexts and social change. Repeatable to a maximum of 9 cr hrs.

3370 Sexualities and Citizenship  U  3
A survey of cultural, social, and political issues related to historical and contemporary lesbian experience in the United States. GE diversity soc div in the US course.

3385 Women in Political Leadership Internship  U  3
Offers students opportunities to learn leadership and policy making skills by working with Ohio women lawmakers.
Prereq: Not open to students with credit for 385.

3395 Transnational Feminisms  U  3
Examines how feminist activists and scholars understand and interrogate contemporary globalization.

3530 Women, Environment and Development  U  3
Interdisciplinary study of women's roles as environmental stewards and in resource-based development in global context. Attention given to gender differences in environmental and rural practices.
Prereq: Not open to students with credit for ENR 3530. Cross-listed in ENR.

3575 Feminist Methodology  U  3
This course will introduce students to thinking critically and analytically about feminist approaches to knowledge production, examining identities and subjectivities, and critical excavations of lived experiences and consciousness. We will focus on how race, class, gender, sexuality, ability, religion, ethnicity, and geopolitical location affect feminist research and scholarship. Completion of 1110 strongly recommended prior to enrollment in this course.

4189.01 Reproductive Rights and Justice  U  3
This class takes an interdisciplinary feminist approach to investigating the history and contemporary politics of reproduction. It focuses on both US and global contexts and links the academic investigation to service learning in the Columbus community. Students will work with organizations who seek to further the goals of reproductive justice in policy, activist, legal, and healthcare contexts.
Prereq: 1110.

4194 Group Studies  U  3
Special studies not otherwise offered; topic varies; students should consult department course listing. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

4375 Women and Visual Culture  U  3
Analysis of visual images of women in historical, racial, and class contexts. Prereq: Not open to students with credit for 375.

4401 Asian American Women: Race, Sex, and Representations  U  3
Examines the experiences and cultural representations of Asian American women for insight into race, gender, sexuality, and citizenship in U.S. and Asian societies. GE historical study and diversity soc div in the US course. Cross-listed in History 3612.

4402 Black Women: Representations, Politics, and Power  U  3
Examines the ways in which black women and black womanhood are constructed and represented across cultural, social, and political contexts in the U.S., specifically how they are making meaning of their lives.
Women's, Gender, and Sexuality Studies

**4403** Gender and Leadership  
U 3  
Focuses on how gender can influence who becomes a leader, the styles of leadership they employ, and how effective leaders can be.

**4404** Regulating Bodies: Global Sexual Economies  
U 3  
Regulation of women's bodies and sexual practices in national and international contexts. Topics include: state regulation of reproduction, population control, and migration of sexualized labor.

**4405** Race and Sexuality  
U 3  
Placing the concepts of 'race' and 'sexuality' in the historical frameworks of colonialism, slavery, and 19th century science, we will draw on feminist, anti-racist and queer theorists, literature, and film to investigate how race and sexuality intersect in all our lives.

**4465** Feminist Political Theory  
U 3  
Examines concepts in feminist political theory including the articulation of feminism, the subjects of feminist theory, the relationship of race, class and sexuality to gender experience, and the use of feminist theory to transform conceptions of justice.  
Prereq: Not open to students with credit for PolitSc 4465. Cross-listed in PolitSc.

**4510** American Women's Movements  
U 3  
An interdisciplinary analysis of the American women's movements, including historical, literary, sociological, and theoretical perspectives.  
Prereq: Not open to students with credit for 4510H (510H) or 510. GE diversity soc div in the US course.

**4513** Women, Government and Public Policy  
U 3  
An examination of policymaking on gender-related issues and the impact of women in government.  
Prereq: Not open to students with credit for 513 or PolitSc 4175 (513). Cross-listed in PolitSc 4175.

**4520** Women of Color and Social Activism  
U 3  
Examination of multiple forms of social activism among women of color from various parts of the world concerning local, national, and international issues.  
GE diversity soc div in the US course.

**4524** Women and Work  
U 3  
The social, cultural, and historical factors that influence women's work and the multiple ways work is gendered.  
Prereq: Not open to students with credit for 524.

**4525** Feminist Critiques of Markets - Profiting from Inequality  
U 3  
Should sexist forms of advertising be permissible? Should we be able to charge a higher price on the basis of gender or race? Should we refuse to buy from or sell to people if our moral commitments are incompatible? Feminist Critiques of Markets will engage feminist readings and critiques in the service of answering concerns like these at the intersection of gender, sexuality, race, & class.

**4527.01** Studies in Gender and Cinema  
U 3  
Analysis of different film types focused on women to help students understand historical scope, theoretical frameworks, and reading strategies for understanding these films; topics vary.  
Repeatable to a maximum of 6 cr hrs.

**4527.02** Studies in Gender and Cinema: The British Horror Film in London  
U 3  
Study abroad in London, UK for study of the British horror film tradition through the lens of feminist film theory, with emphasis on genre, historical contexts, production modes, and archival research. Course work will include engagement with museums, film studios, West End Theatre, horror tourism, and review of scripts available at the British Film Institute and at Leicester University. Students are strongly encouraged to have taken WGSSt 1110 prior to this course.

**4540** Women of Color: Art, Literature and Culture  
U 3  
Interdisciplinary feminist study of selected historical and cultural movements through writing by women of color; topics vary by genre and by era.  
Prereq: Not open to students with credit for 540.

**4560** Chicana Feminism  
U 3  
Provides a general overview of Chicana feminist theory and practice from the early 1970's to the present.  
Prereq: Not open to students with credit for 560.

**4575** Women's Studies Senior Seminar  
U 3  
Examination of particular contemporary issues which have crucial implications for feminist inquiry (topics vary).  
Prereq: 3575.

**4597** Gender and Democracy in the Contemporary World  
U 3  
Highlighting perspectives from various contexts across the globe, this course explores issues of gender and democracy in the contemporary world.  
Prereq: Not open to students with credit for 597 or PolitSc 4597.03 (597.03). GE cross-disciplinary seminar course. Cross-listed in PolitSc 4597.03.

**4845** Gender, Sexuality, and Science  
U 3  
Examination of relations between gender and science; topics include gendering of "science" and "nature," biological theories of sexual inequality, feminist critiques of science and technology.  
Prereq: One course in CompStd or WGSSt, or Grad standing, or permission of instructor. Not open to students with credit for 535 or CompStd 4485 (535). Cross-listed in CompStd.

**4921** Intersections: Approaches to Race, Gender, Class, and Sexuality  
U 3  
Examines intersections of race, gender, class, and sexuality in various sites within American culture (e.g., legal system, civil rights discourse, social justice movements).  
Prereq: One course in CompStd, WGSSt, or AfrAmASt. Not open to students with credit for 545, CompStd 4921 (545), or AfrAmASt 4921 (545). Cross-listed in CompStd and AfrAmASt.

**4998** Capstone Project  
U 1 - 5  
Open to students completing a capstone project. Should be scheduled in consultation with advisor. Topics vary.  
This course is graded S/U.

**4999** Distinction Thesis  
U 1 - 5  
Completion of a distinction thesis. Should be scheduled in consultation with advisor. Topics vary.  
This course is graded S/U.

**4999H** Honors Thesis  
U 1 - 5  
Completion of an honors thesis. Should be scheduled in consultation with advisor. Topics vary.  
Prereq: Honors standing. Repeatable to a maximum of 20 cr hrs or 20 completions. This course is graded S/U.

**5193** Individual Studies  
UG 1 - 9  
Individual studies in women's, gender and sexuality studies as arranged with an instructor or advisor.  
Repeatable to a maximum of 24 cr hrs or 24 completions. This course is graded S/U.

**5450** Global Human Trafficking: Realities and Representations  
U 3  
This course will introduce students to the development of human trafficking as it has been understood and represented by governments, policymakers, the media, and popular culture. The objective of this course is to scrutinize common understandings and representations of trafficking and to consider the advantages and disadvantages of such understandings and representations.  
Prereq: Not open to students with credit for Slavic 5450. Cross-listed in Slavic.

**5620** Topics in Feminist Studies  
UG 3  
Topics vary by course and instructor.  
Repeatable to a maximum of 6 cr hrs or 6 completions.

**5624** Women and Social Change in Latin America  
UG 3  
Provides an overview of social change initiatives of women in Latin America and the Caribbean through analysis of women's experiences, values, strategies, and goals.  
Prereq: Not open to students with credit for 624.

**5998** Undergraduate Research in Women's, Gender and Sexuality Studies  
UG 1 - 3  
Undergraduate research or creative activities in variable topics.  
This course is graded S/U.

**7700** Feminist Inquiry I  
G 3  
Introduction to women's, gender and sexuality studies as an academic field of study and an orientation to the graduate program, facilities, resources, and people.  
Prereq: Mast, Doct, or Grad minor standing in WGSSt.

**7701** Feminist Inquiry II  
G 3  
The second of a two semester course examining interdisciplinary feminist approaches to theory and methodology. The course questions divisions between power, knowledge, objects and subjects of analyses, and the practices of academic engagement. Emphasizes the connection between methodology and epistemology in feminist scholarship.  
Sp Sem.

**7702** Feminist Pedagogy  
G 3  
Assist graduate students in meeting instructional responsibilities and developing necessary skills for college level teaching in women's studies.  
Prereq: Not open to students with credit for 702.

**7720** Theorizing Power, Institutions, and Economies  
G 3  
Examination of feminist theoretical approaches to the material conditions of women's lives and the changing structures of social, economic, and political power.  
Prereq: Not open to students with credit for 720.

**7740** Theorizing Narrative, Culture, and Representation  
G 3  
Designed to introduce graduate students to the central debates that have characterized feminist theories of representation.  
Prereq: Not open to students with credit for 740.

**7760** Feminist Inquiry: Methods  
G 3  
An overview of feminist methodological issues and dilemmas and an introduction to a variety of research methods.  
Prereq: Not open to students with credit for 760.
Theorizing Global and Transnational Feminisms  
Honors Research  
Independent Studies  
Topics in Feminist Studies

Yiddish II  
Development of listening, reading, speaking, and writing skills. Reading of simplified Yiddish texts about Yiddish culture.  
Prereq: 1101. Not open to students with credit for 103 or native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GE for lang course.

Yiddish

Yiddish 1102  
Yiddish 1102 is an introduction to the Yiddish language and Ashkenazic culture. You will learn to communicate in culturally appropriate ways in Yiddish. We aim to help you develop balanced skills in speaking, listening, reading, and writing. In addition, you will engage with Ashkenazic culture in Europe, Israel, and the United States. This course is available for EM credit. GE for lang course.

Yiddish 1101  
Yiddish 1101 is an introduction to the Yiddish language and Ashkenazic culture. You will learn to communicate in culturally appropriate ways in Yiddish. We aim to help you develop balanced skills in speaking, listening, reading, and writing. In addition, you will engage with Ashkenazic culture in Europe, Israel, and the United States. This course is available for EM credit. GE for lang course.

Women's, Gender, and Sexuality Studies  
467

Yiddish III  
Development of listening, reading, speaking, and writing skills. Reading of Yiddish short stories and poems.  
Prereq: 1102. Not open to students with credit for 103 or 104, or native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GE for lang course.

Group Studies  
Investigation of problems in various fields of Yiddish and Ashkenazic studies.  
Prereq: Permission of instructor. Repeatable to a maximum of 16 cr hr or 4 completions. This course is graded S/U.

Independent Studies in Yiddish and Ashkenazic Studies  
Prereq: Permission of instructor. Repeatable to a maximum of 16 cr hr or 4 completions.

Yiddish Culture  
Introductory survey of political, social, ideological, and religious trends as reflected in Yiddish culture, especially folklore and literature.  
Prereq: Not open to students with credit for 241 or JewshSt 2241. GE cultures and ideas course. Cross-listed in JewshSt.

Jewish American Voices in U.S. Literature  
Introduction to Jewish-American literature; development of expository writing and argumentation skills through systematic and critical reflection upon their own country from the perspective of an ethnic community.  
Prereq: English 1110 (110) or equiv. Not open to students with credit for 367 or JewshSt 2367. GE writing and comm: level 2 and cultures and ideas course. Cross-listed in JewshSt.

Yiddish Literature in Translation  
Reading, analysis, and discussion of representative works and of the development of major movements and genres in Yiddish literature.  
Prereq: Not open to students with credit for 371 or JewshSt 3371. GE lit and diversity global studies course. Cross-listed in JewshSt.

Holocaust in Yiddish and Ashkenazic Literature and Film  
Reading and analysis of texts, films and music pertaining to the topic of the Holocaust, the genocide perpetrated by Nazi Germany against European Jewry, and its impact on Ashkenazic-Jewish civilization.  
Prereq: Not open to students with credit for 398 or German 399. GE lit and diversity global studies course.

Studies in Yiddish Literature  
Advanced study of specific literary periods, figures, and/or topics involving extensive reading and discussion of appropriate primary and secondary source materials.  
Repeatable to a maximum of 9 cr hrs.

Undergraduate Research  
Investigation of problems in various fields of Yiddish and Ashkenazic studies.  
Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

Honors Research  
Investigation of problems in various fields of Yiddish and Ashkenazic studies.  
Prereq: Honors standing, and permission of instructor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

Undergraduate Research Thesis  
Research for undergraduate thesis.  
Prereq: Permission of undergraduate thesis advisor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

Honors Undergraduate Research Thesis  
Research for Honors undergraduate research thesis.  
Prereq: Honors standing, and permission of undergraduate honors thesis advisor. Repeatable to a maximum of 9 cr hrs or 3 completions. This course is graded S/U.

Independent Studies  
Independent studies in Yiddish and Ashkenazic studies.  
Prereq: Appropriate Grad standing and permission of thesis advisor and Department Chair. Repeatable to a maximum of 12 cr hrs or 4 completions. This course is graded S/U.

Master's Thesis  
Master thesis research.  
Prereq: Appropriate Grad standing and permission of thesis advisor and Department Chair. Repeatable to a maximum of 12 cr hrs or 4 completions. This course is graded S/U.
468  Yiddish

7721  Studies in Yiddish Literature  G  3
Advanced study of specific literary periods, figures, and/or topics involving extensive reading and discussion of appropriate primary and secondary source materials. Repeatable to a maximum of 9 cr hrs. Specific topics not repeatable for credit.

8999  Dissertation Thesis  G  1 - 9
Research for dissertation purposes only.
Prereq: Appropriate Grad standing and permission of thesis advisor and Department Chair. Repeatable. This course is progress graded (S/U).