The Ohio State University
Course Offerings Bulletin 2011-2012
11-12 Course Offerings Bulletin

Course information (title, credit hours, level, description, etc.) starts on page 1. The most current information regarding new courses, changes to existing courses, credit hours, sections, days, times, buildings, room, and instructors may be found on the Web at www.ohio-state.edu/courses.

Explanation of a Course Listing

A  444 Principles of Animal Nutrition UGRD 5

Course number: 444

Course title: Principles of Animal Nutrition

Instructional Level: UGRD  
UGRD = Undergraduate  
GRAD = Graduate

Professional Level Courses:
DENT = Dentistry  
MED = Medicine  
LAW = Law  
OPT = Optometry  
PHP = Pharmacy  
VET = Veterinary Medicine

Credit hours: 5

B A study of fundamental principles of nutrition in mammals and birds.

Course description: A study of fundamental principles of nutrition in mammals and birds.

C  **Su (1st term), Au, Wi, Sp Qtrs. 4 cl, 1 2-hr lab. H444 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: Chem 102 or 122 and Math 148 or equiv. Not open to students with credit for AnimalSc 444 or PterySc 444. Open only to majors in animal nutrition. Repeatable to a maximum of 10 cr hrs. Cross-listed in Animal Science and Poultry Science. GEC course.

(*) (*) A caret (*) denotes that the course will not be offered this year. An asterisk (*) indicates that the course is offered every other year.

Quarters of offering: Su (1st term), Au, Wi, Sp  
Su = Summer  
Au = Autumn  
Wi = Winter  
Sp = Spring

Classroom and laboratory hours: 4 cl, 1 2-hr lab.

Course credit is earned through satisfactory completion of course work which may involve classroom, laboratory, bio-learning center, computer-assisted instruction, or field trip attendance.

Honors statement: H444 (honors) may be available to students enrolled in an honors program or by permission of dept.

Prerequisite(s): Chem 102 or 122 and Math 148 or equiv.

The course number(s) or other information indicates 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 class standing (freshman, sophomore, junior, senior) or rank (1st, 2nd, 3rd, 4th yr standing) is listed, only students with that or higher level are eligible for enrollment. Enrollment in a course requires the successful completion of all prerequisites or their equivalents. The department, school, or college office should be consulted in case of questions of eligibility to take a course.

Exclusion or limiting clause: Not open to students with credit for AnimalSc 444 or PterySc 444. Open only to majors in animal nutrition.

Repeatability clause: Repeatable to a maximum of 10 cr hrs.

Indicates the maximum number of hours a course may be repeated for credit.

General information clause: Cross-listed in Animal Science and Poultry Science (meaning this same course is also listed in these two academic areas).

Gives general information about the course.

GEC Courses: Courses which may be used to meet the University's General Education Curriculum (GEC) are so distinguished throughout this Bulletin. Students should consult their specific college or adviser before scheduling courses to be applied to this requirement.

FL, NS, SS, and VPA Admis Cond Courses: Courses which may be used to fulfill admission conditions are so designated throughout this bulletin.

University Classification and Course Numbering System (See Rule 3335-7-05)

Established 1967-68 (revised 1974-75), the system of numbering courses offered by the University is as follows.

000-099 Non-credit courses (except certain seminars and colloquia) for orientation, remedial, or other noncollege-level experiences. These are courses with credit added to graduation requirements.

100-199 Basic courses providing undergraduate credit, but not to be counted on a major or field of specialization in any department. Courses at this level are beginning courses, required or elective courses that may be prerequisite to other courses.

200-299 Basic courses providing undergraduate credit and may be counted on a major or field of specialization.

300-499 Intermediate courses providing undergraduate or basic professional credit that may be counted on a major or field of specialization.
500-599 Intermediate courses providing undergraduate or professional credit that may be counted on a major or field of specialization, and may provide graduate credit only in other departments.

600-699 Courses providing undergraduate or professional credit that may be counted on a major or field of specialization, and may provide graduate credit (in all departments).

700-799 Advanced courses providing undergraduate, graduate, or professional credit.

800-999 Courses providing graduate credit and are open to undergraduates only with the consent of the dean of the Graduate School.

* Courses for which graduate credit is anticipated must be taught by a member of the faculty approved by the graduate committee of the department offering the course. 800 and 900 level courses must be taught by the member of the graduate faculty.

Editor: Andrea Boar, Office of the University Registrar
Photo: Courtesy of OSU Photo Services
Academic Affairs

194 Interdisciplinary Group Studies UGRD 1-5
Study of special or interdisciplinary topics at an introductory level.
Prereq: Open to students who meet instructors stated prerequisites. This course is graded S/U.

Accounting and Management Information Systems

211 Introduction to Accounting UGRD 5
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.
Su, Au, Wi, Sp Qtr. 2 h-2 cr. Prereq or conc: Econ 200 or equiv. Not open to students with credit for 201 or 310 or equiv. This course is available for EM credit.

211H Honors Introduction to Accounting I UGRD 5
Structure of accounting information; role of accounting and auditing in markets and organizations; preparation and use of accounting reports. Uses distinctive instructor-authored materials and writing assignments, and emphasizes oral class participation.
Au Qtr. 2 h-2 cr. Prereq: Permission of Honors Accounting Director.

212 Introduction to Accounting UGRD 5
The uses of accounting reports in management decision and in control of business operations; focus is on the internal use of accounting information.
Su, Au, Wi, Sp Qtr. 2 h-2 cr. + online lecture materials. Prereq: 211 or equiv; and Econ 200 or equiv. Not open to students with credit for 201 or 310 or equiv. This course is available for EM credit.

212H Honors Introduction to Accounting II UGRD 5
Cost measurement, estimation and control; managerial decision making and evaluation. Emphasizes analytical skill development and relationship of accounting to the economic theory of the firm.
Wi Qtr. 2 h-2 cr. Prereq: B or better in H211 or permission of Honors Accounting Director.

310 Foundations of Accounting UGRD 5
A survey of accounting for non-business students; financial statements and analysis; accounting for assets, liabilities and owners equity; and elements of managerial accounting.
Su, Au, Wi, Sp Qtrs. 1 h-2 cr. Prereq: Math 130; Econ 200 and CSE 100 or equivalents. Not open to students with credit for Accords 201, 211 or 212 or to students enrolled in the BSBA program. Credit does not count toward the BSBA degree.

493 Individual Studies UGRD 1-10
Individual study projects in selected areas in accounting and management information systems.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 20 or hrs. This course is graded S/U.

494 Group Studies UGRD 1-10
Group study projects in selected areas in accounting and management information systems.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 20 or hrs.

501 Accounting and Cost Analysis UGRD 3
An introduction to financial statement analysis and cost analysis for planning, decision-making, and control.
Au, Sp Qtrs. 2 1 h-2 cr. Prereq or conc: ISE 500 and 504 or permission of instructor.

519H Honors Intermediate Accounting UGRD 5
Introduction to intermediate financial accounting topics.
Sp Qtr. 3 cr. Prereq: B or better in 212H or permission of Honors Accounting Director.

520H Honors Intermediate Accounting II UGRD 5
Au Qtr. 3 cr. Prereq: B or better in H519 or permission of Honors Accounting Director. Not open to students with credit for 521, 522, or 523.

521 Financial Accounting I UGRD 3
Introduction to financial accounting theory and practice; determination of asset and liability valuation and income measurement and its relation to market frictions.
Su, Au, Wi, Sp Qtrs. 2 1 h-2 cr. Prereq: 212 and BusMgt 330 and 331; or permission of instructor.

522 Financial Accounting II UGRD 3
Application of accounting techniques and theory to recording and reporting of financial data; emphasis on collection, summarization, and reporting of data in accordance with generally accepted accounting principles.
Au, Wi, Sp Qtrs. 3 cr. Prereq: 521, BusAdm 499.

523 Financial Accounting III UGRD 3
Application of accounting theory in complex situations; emphasis on cash flows, leases, error corrections and shareholder’s equity.
Su, Wi, Au Qtrs. 3 cr. Prereq: 522.

525 Cost Accounting UGRD 5
Managerial decision making in organizations with an emphasis on the use of financial data; theory and practice of management control.
Au, Wi, Sp Qtrs. 2 2 h-2 cr. Prereq: 212 and Math 132 or 152 and BusMgt 330 and 331 and BusAdm 499.

526H Honors Cost Accounting UGRD 5
Role of accounting in business planning and control; activity costing; strategic cost management.
Wi Qtr. 2 h-2 cr. Prereq: B or better in 520H, and BusMgt 330 and 331 or permission of Honors Accounting Director.

532 Foundations of Business Information Systems UGRD 5
Technical foundation in programming interactive business information systems.
Wi Qtr. 2 h-2 cr. Prereq: 212 and CSE 214 and BusMgt 330 and 331 and BusAdm 499; or permission of instructor.

564 Advanced Accounting UGRD 4
Advanced topics in financial reporting including accounting for multi-corporate business entities, international operations, and government and not-for-profit organizations.
Su, Au, Wi, Sp Qtrs. 2 h-2 cr. Prereq: 523 or equiv.

624H Advanced Accounting UGRD 4
Advanced topics in financial reporting including accounting for multi-corporate business entities, international operations, and government and not-for-profit organizations.
Su, Au, Wi, Sp Qtrs. 2 h-2 cr. Prereq: 523 or equiv; Honors program or permission of department or instructor.

626 Tax Accounting I UGRD 4
Fundamentals of the federal income tax, and how it influences taxpayer decisions. Emphasis is on individual and businesses organized as proprietorships, but the rules generally applicable to all taxpayers are covered.
Su, Au, Wi, Sp Qtrs. 2 h-2 cr. Prereq: 521 or equiv and BusAdm 499.

627 Auditing Principles and Procedures UGRD 4
Basic concepts and standards of auditing; audit procedures and working papers; internal and external audit reports.
Au, Su, Wi, Sp Qtrs. 2 h-2 cr. Prereq: 523 or equiv.

628H Accounting Research and Practice UGRD 4
Researching accounting concepts and standards underlying corporate and noncorporate financial statements including consideration of typical accounting problems.

631 Introduction to Accounting Information Systems UGRD 5
The design and control of computer-based accounting information processing systems.
Su, Au, Wi, Sp Qtrs. 2 h-2 cr. Prereq: 212 and CSE 200 and BusMgt 330 and 331 and BusAdm 499; or permission of instructor. Not open to students with credit for 531.

631H Introduction to Accounting Information Systems UGRD 5
The design and control of computer-based accounting information processing systems.
Su, Au, Wi, Sp Qtrs. 2 h-2 cr. Prereq: Honors program or permission of department or instructor; 212 and CSE 200 and BusMgt 330 and 331 and BusAdm 499. Not open to students with credit for 531.

634 Topics in Financial Accounting UGRD 4
Contemporary topics in financial accounting and analysis. Topics may vary.
Sp Qtr. Prereq: 522.

636 Tax Accounting II UGRD 4
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.
Au, Sp Qtrs. 2 h-2 cr. Prereq: 522 and 626 or equiv.

646 Tax Research Seminar UGRD 3
Case studies requiring an in-depth examination of the tax aspects of situations frequently encountered by businesses and individuals.

651 Analysis and Design of Management Information Systems UGRD 4
Investigation and application, through real-world projects, of concepts and tools used in the analysis and design of management information systems.
Su, Au, Wi, Sp Qtrs. 2 h-2 cr. Prereq: CSE 516 and BusMgt 330 and 331 and BusAdm 499; or permission of instructor.

653 Business Data Communications UGRD 4
Study of technological, economic, and organizational issues concerning computer based networks for business data communications.
Su, Sp Qtr. 2 h-2 cr. Prereq: Jr or Sr standing as an Information Systems major in BUS and BusMgt 330 and 331 and BusAdm 499; or permission of instructor.

657 Decision Support and Expert Systems UGRD 4
Study of computer-based systems designed to support decision-making within the organization.
Sp Qtr. 2 h-2 cr. Prereq: CSE 616 and BusMgt 330 and 331 and BusAdm 499; or permission of instructor.

658 Electronic Commerce UGRD 4
Examination of technical, managerial, and strategic issues that surround the emergence of electronic commerce on the internet.
Sp Qtr. 2 h-2 cr. Prereq: CSE 670 and BusMgt 330 and 331 and BusAdm 499.

659 Information Systems Planning and Management UGRD 4
Planning and management of the information system function in business organizations with emphasis on the problems involved.
Au Qtr. 2 h-2 cr. Prereq: CSE 200 and 214, Sr or grad standing, and BusMgt 330 and 331 and BusAdm 499; or permission of instructor.
## Accounting and Management Information Systems

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>693</td>
<td>Individual Studies UGRD 1-10</td>
<td></td>
<td>Individual study projects in selected areas of accounting and management information systems. Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded SU-I.</td>
</tr>
<tr>
<td>694.01</td>
<td>Group Studies UGRD 1-10</td>
<td></td>
<td>Group study projects in selected areas of accounting and management information systems. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>694.02</td>
<td>Group Studies UGRD 1-10</td>
<td></td>
<td>Group study projects in selected areas of accounting and management information systems. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>694.03</td>
<td>Group Studies UGRD 1-10</td>
<td></td>
<td>Group study projects in selected areas of accounting and management information systems. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>803</td>
<td>Foundations of Accounting GRAD 5</td>
<td></td>
<td>Fundamental accounting concepts and theory; emphasis on information content approach by examining the structure, language and comparative advantage of accounting reports as an information source. Wi Qtr. 2-2 hr cl. Prereq: Enrollment in Master of Accounting Program or permission of instructor.</td>
</tr>
<tr>
<td>804</td>
<td>Professional Research in Accounting GRAD 5</td>
<td></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. Au Qtr. 2-2 hr cl. Prereq: Enrollment in Master of Accounting Program or permission of instructor.</td>
</tr>
<tr>
<td>821</td>
<td>Accounting and Legal Environments Facing GRAD 4</td>
<td></td>
<td>Applications to accounting, corporate finance, business strategy, statistics, and securities law theory to issues and problems in corporate governance. Sp Qtr. 2-2 hr cl. Prereq: MBA 800 or 800N or enrollment in Master of Accounting program or permission of instructor.</td>
</tr>
<tr>
<td>822</td>
<td>Assurance Services and Information Quality GRAD 5</td>
<td></td>
<td>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. Wi, Sp Qtrs. 2-2 hr cl. Prereq: Enrollment in the Master of Accounting program and completion of 827 or equiv. or permission of instructor.</td>
</tr>
<tr>
<td>823</td>
<td>Managerial Accounting for Decision Making GRAD 4</td>
<td></td>
<td>Cost systems with emphasis on the appropriate application of system outputs to management decisions. Sp Qtr. 2-2 hr cl. Prereq: 811 or MBA 801 or 802 or permission of instructor.</td>
</tr>
<tr>
<td>824</td>
<td>Corporate Financial Reporting GRAD 4</td>
<td></td>
<td>An examination of major aspects of corporate financial reporting by management under generally accepted accounting principles including coverage of disclosures required for traded securities. Au Qtr. 2-2 hr cl. Prereq: MBA 800 or 800N or enrollment in Master of Accounting program or permission of instructor.</td>
</tr>
<tr>
<td>825</td>
<td>Accounting Information in Markets and Organizations GRAD 5</td>
<td></td>
<td>A conceptual approach to the use of accounting information and management controls in markets and decentralized organizations. Integration of practice and theory. Wi Qtr. 2-2 hr cl. Prereq: MBA 800 or 800N or enrollment in Master of Accounting program or permission of instructor.</td>
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<tr>
<td>826</td>
<td>Tax Planning for Managerial Decision Making GRAD 4</td>
<td></td>
<td>Examination of the impact of taxes on several important business decisions; recognition of tax problems and planning opportunities. Wi Qtr. 2-2 hr cl. Prereq: MBA 800 or 800N or enrollment in Master of Accounting program or permission of instructor.</td>
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<tr>
<td>827</td>
<td>Information, Incentives, and Control System Design GRAD 4</td>
<td></td>
<td>Aspects of organizations impacting the design, implementation, and revision of management control systems for private and public enterprises including discussion of responsibility centers, transfer pricing, planning, budgetary reporting, incentive compensation, operational auditing, and the impact of taxation on decision-making. Sp Qtr. 2-2 hr cl. Prereq: MBA 800 or 800N or enrollment in Master of Accounting program or permission of instructor.</td>
</tr>
<tr>
<td>828</td>
<td>Financial Information and Valuation GRAD 4</td>
<td></td>
<td>Valuation of securities, companies and debt using accounting based models of valuation such as price-to-book models, price-to-earnings models, earnings forecasts and EVA. 2-2 hr cl. Prereq: MBA 800 or 800N or enrollment in Master of Accounting program or permission of instructor.</td>
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<tr>
<td>829</td>
<td>Financial Accounting Analysis GRAD 4</td>
<td></td>
<td>Analyze the ability of accrual accounting to provide relevant statistics in an uncertain economic environment. Wi Qtr. 2-2 hr cl. Prereq: MBA 800 or 800N or enrollment in Master of Accounting program or permission of instructor.</td>
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<tr>
<td>834</td>
<td>Corporate Information Systems Management GRAD 4</td>
<td></td>
<td>Case studies of the impacts of information technology on business organizations and its effective planning and control. Au Qtr. 2-2 hr cl. Prereq: MBA 800 or 800N or enrollment in Master of Accounting program or permission of instructor.</td>
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<tr>
<td>835</td>
<td>Systems Analysis and Design for Managers GRAD 4</td>
<td></td>
<td>Practical experience in software development for managers of business systems. Au Qtr. 2-2 hr cl. Prereq: MBA 800 or 800N or enrollment in Master of Accounting program or permission of instructor.</td>
</tr>
<tr>
<td>841</td>
<td>Accounting for Mergers and Acquisitions GRAD 4</td>
<td></td>
<td>Study of complex financial transactions including business combinations, impairment of acquisition-related intangibles, restructuring, special purpose entities, foreign operations, derivatives and hedges. Sp Qtr. Prereq: MBA 800 or 800N or enrollment in Master of Accounting program or permission of instructor.</td>
</tr>
<tr>
<td>842</td>
<td>Financial Statement Analysis GRAD 4</td>
<td></td>
<td>Analysis of financial statement information for purposes of valuing a company. Wi Qtr. Prereq: 804 or (prereq: MBA 800 and prerequisite or concurrent: MBA 810) or permission of instructor.</td>
</tr>
<tr>
<td>845</td>
<td>Controllership GRAD 3</td>
<td></td>
<td>The accounting executive's role in the management of an enterprise; accounting data for planning, coordination, control, and protection. Sp Qtr. 3 cl. Prereq: MBA 800 or 800N or enrollment in Master of Accounting program or permission of instructor.</td>
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<tr>
<td>846</td>
<td>Business Taxation and Tax Planning GRAD 4</td>
<td></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. Au, Wi Qtrs. 2-2 hr cl. Prereq: 620, 826, enrollment in Master of Accounting program, or permission of instructor.</td>
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<tr>
<td>847</td>
<td>Securities Law for Graduate Accounting Students GRAD 4</td>
<td></td>
<td>Aspects of law related to financial reporting and the practice of accounting. Wi Qtr. Prereq: Enrollment in Master of Accounting program or permission of instructor.</td>
</tr>
<tr>
<td>848</td>
<td>Financial Instruments, Derivatives, and Hedging GRAD 4</td>
<td></td>
<td>Accounting and management aspects of derivative financial instruments including options, forwards and futures. Sp Qtr. 2-2 hr cl. Prereq: Enrollment in Master of Accounting program or permission of instructor.</td>
</tr>
<tr>
<td>849</td>
<td>International Accounting GRAD 4</td>
<td></td>
<td>Financial reporting and accounting for businesses in international capital markets. Sp Qtr. Prereq: Enrollment in Master of Accounting Program or permission of instructor.</td>
</tr>
<tr>
<td>852</td>
<td>Governmental and Non-Profit Accounting GRAD 4</td>
<td></td>
<td>The application of accounting principles to governments and other not-for-profit entities; problems relating to funds, appropriations, and budgetary controls. Au Qtr. 2-2 hr cl. Prereq: MBA 800 or 800N or enrollment in Master of Accounting program or permission of instructor. Not open to students with credit for PubPolM 852. Cross-listed in Public Policy and Management.</td>
</tr>
</tbody>
</table>
856 Professional Research in Taxation  
In-depth examination of the tax aspects of situations frequently encountered by businesses and individuals.  
Su, Sp Qtrs. Prereq: 846 or permission of instructor.  Repeatable to a maximum of 4 cr hrs.  

861 Fraud Examination  
Study of individual business fraud, weaknesses in business controls, and mechanisms to prevent, detect, and respond to business fraud.  
Wi Qtr. Prereq: Enrollment in Master of Accounting program or permission of instructor.  

862 Financial Fraud Detection  
Techniques for detecting financial statement fraud including detection of asset misappropriation and fraudulent financial reporting.  
Sp Qtr. Prereq: Enrollment in Master of Accounting program or permission of instructor.  

866 Advanced Topics in Taxation  
Examination of tax effects on business transactions. Topics include international and state/local taxation, exempt entities, family tax planning, conglomerates, and choice of tax entity.  
Wi, Sp Qtrs. Prereq: 846 or permission of instructor. Repeatable to a maximum of 4 cr hrs.  

876 Case Studies in Taxation  
Analysis of case studies from a tax perspective: choice of entity, international transactions, financial and succession planning.  
Su, Sp Qtrs. Prereq: 846 and 856, or permission of instructor. Repeatable to a maximum of 4 cr hrs.  

998 Research in Accounting: Thesis  
Research for thesis purposes only.  
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.  

999 Research in Accounting: Dissertation  
Research for dissertation purposes only.  
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.  

200 Introduction to Aerospace Engineering I  
Introduction to aerospace design, with emphasis on aerodynamics and aircraft performance.  
Au Qtr. 4 cl, 1 2-hr lab. Prereq or concurs: Math 152, Physics 131, and a minimum cumulative pt/hr ratio of 2.00. This course is available for EM credit.  

501 Sounding Rocket Design  
Wi Qtr. Prereq: 201. Math and Natural Sciences Admis Adj course.  

510.01 Aerospace Laboratory I  
Laboratory demonstrations and experiments in aerodynamics, aeroelasticity, propulsion, and structures of flight vehicles: dynamics and control.  
Au Qtr. Prereq: 542, 581 and a second writing course. Open only to AeroEng majors.  

510.02 Aerospace Laboratory II  
Laboratory demonstrations and experiments in aerodynamics, aeroelasticity, propulsion, and structures of flight vehicles: gas dynamics and propulsion.  
Wi Qtr. Prereq: 530, 550, 560 and a second writing course. Open only to AeroEng majors.  

510.03 Aerospace Laboratory III  
Laboratory demonstrations and experiments in aerodynamics, aeroelasticity, propulsion, and structures of flight vehicles: data acquisition, signal processing and aerodynamics.  
Sp Qtr. Prereq: 550, 581 and a second writing course. Open only to AeroEng majors.  

512 Systems Integration I  
Integration of material from structures, fluids and dynamics courses by means of industrially relevant design projects.  
Au Qtr. 1 2-hr lab. Concur: 520, 530, 542.  

513 Systems Integration II  
Integration of material from structures, fluids and dynamics courses by means of industrially relevant design projects.  
Wi Qtr. 1 2-hr lab. Prereq: 530, 542, 560.  

514 Systems Integration III  
Integration of material from heat transfer and propulsion courses by means of industrially relevant design projects.  
Sp Qtr. 1 2-hr lab. Concur: 550, 570, 581, ECE 300.  

515.01 Preliminary Design of Atmospheric Flight Vehicles I  
Beginnings of preliminary design, methodology, case studies, introduction of design software, group planning for subsequent design effort; design of atmospheric flight vehicles and components.  
Prereq: 521, 543, 550, 560. Not open to students with credit for 515.  

515.02 Preliminary Design of Space Flight Vehicles I  
Beginnings of preliminary design, methodology, case studies, introduction of design software, group planning for subsequent design effort; design of space flight vehicles, systems and components.  
Prereq: 521, 543, 550, 560. Not open to students with credit for 515.  

516.01 Preliminary Design of Atmospheric Flight Vehicles II  
Continuation of preliminary design from 515. Students learn to utilize CAD and other computational tools as a part of the design process: design of a vehicle for atmospheric flight.  
Prereq: 515.01. Not open to students with credit for 516.  

516.02 Preliminary Design of Space Flight Vehicles II  
Continuation of preliminary design from 515. Students learn to utilize CAD and other computational tools as a part of the design process: design of space flight vehicles, systems and components.  
Prereq: 515.02. Not open to students with credit for 516.  

517.01 Detailed Design of Atmospheric Flight Vehicles  
Detailed design of aerospace vehicle components: design of a vehicle for atmospheric flight.  
Prereq: 516.01. Not open to students with credit for 517.
4 Aeronautical and Astronautical Engineering

517.02 Detailed Design of Space Flight Vehicles UGRD 2
Detailed design of aerospace vehicle components: design of space flight vehicles, systems and components. Prereq: 516.02. Not open to students with credit for 517.

520 Flight Vehicle Dynamics UGRD 4
Introduction to the concept of dynamic stability and to the dynamics of rigid aircraft and satellite vehicles. Au Qtr. 4 cl. Prereq: 521, MechEng 430.

521 Linear Systems Engineering UGRD 4
Analysis of a flight vehicle from a systems point of view. Free and forced response. Introduction to closed-loop and open-loop systems. Sp Qtr. 4 cl. Prereq: 520, 581, ECE 300, ECE 309.

530 One-Dimensional Gasdynamics UGRD 4
One-dimensional gasdynamics, including flow with friction and heat conduction, but with an introduction to oblique shocks and Prandtl-Meyer flows. Au Qtr. 4 cl. Prereq: 521, 405.

542 Flight Vehicle Structures I UGRD 4
Load distributions, temperature distributions, and allowable stresses for flight vehicle structures; derivations of basic equations for analysis of flight vehicle structural components. Au Qtr. 4 cl. Prereq: MechEng 410, MatSciEn 205, concur: 581.

543 Flight Vehicle Structures II UGRD 4
Stress analysis of flight vehicle structures. Wi Qtr. 4 cl. Prereq: 542.

550 Principles of Flight Vehicle Propulsion UGRD 4
Fundamentals of aerospace propulsion including engine cycles and analysis of various air-breathing engines and rocket engines. Sp Qtr. 4 cl. Prereq: 530.

560 Fundamentals of Aerodynamics UGRD 4

570 Viscous Flow and Heat Transfer UGRD 4

580 Analytical Methods in Aeronautical and Astronautical Engineering UGRD 4
Application of selected topics in mathematics to analysis in the field of aeronautical and astronautical engineering. Sp Qtr. 4 cl. Prereq: 201 and Math 415.

581 Numerical Methods in Aerospace Engineering UGRD 3
Application of numerical methods to selected topics in the field of aerospace engineering. Au Qtr. 3 cl. Prereq: EnGraph 167, 580.

612 Aircraft Flight Test Engineering UGRD 4
A determination of the performance, stability, controllability, and handling qualities of general aviation aircraft through flight tests. Sp Qtr. 3 cl. 1-2 hr lab. Prereq: 520 and 560, or equivs with permission of instructor.

615 Introduction to Computational Aerodynamics UGRD 4
Introduction to computational methods used in aerospace computational flow problems; applications to airflow analysis and design. Wi Qtr. 4 cl. Prereq: 560, 581 and EnGraph 167, or equivs.

616 Advanced Aerospace Vehicle Design UGRD 3
Configuration formulation, performance and analysis, propulsion system design and integration, material selection, structural efficiency, CAD/CAM, computer simulations. Su, Au, Wi, Sp Qtr. 3 cl. Prereq: 518, 516 or permission of instructor. Repeatable to a maximum of 8 cr hrs.

620 Automatic Control of Aircraft Vehicles I UGRD 3
Control theory as applied to analysis and design of flight control systems; components of automatic flight control systems. Wi Qtr. 3 cl. Prereq: 521 and ECE 300.

621 Aircraft and Spacecraft Automatic Control Systems II UGRD 4
Control theory as applied to analysis and design of control systems for complex flight structures; interaction between structural flexibility and control systems. Wi Qtr. 4 cl. Prereq: 521.

626 Orbital Mechanics UGRD 3

645 Introduction to Structural Dynamics of Aerospace Vehicles UGRD 4

661 Advanced Aerodynamics UGRD 3
Advanced elements of aerodynamics in low- and high-speed flow. Au Qtr. 3 cl. Prereq: 560. Not open to students with credit for 561.

693 Individual Studies in Advanced Aerospace Engineering UGRD 2-10
Individual studies on advanced topics in aerospace engineering. Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

694 Group Studies in Aerospace Engineering UGRD 1-15
Group studies on special topics in aerospace engineering. Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept. Repeatable to a maximum of 15 cr hrs.

720 Stability and Control of Flight Vehicles UGRD 4

745 Aerelasticity I UGRD 4
Dynamic loads analysis of elastic flight vehicles subjected to unsteady airloads. * Sp Qtr. 4 cl. Prereq: 521, 543 and 560.

751 Advanced Propulsion UGRD 4
Characteristics and performance of air breathing flight vehicle power plants and their components (inlets, turbo-machinery, combustors, and expansion nozzles). Au Qtr. 4 cl. Prereq: 550.

752 Rocket Propulsion UGRD 3
A discussion of all propulsion types for space flight: liquid, solid, hybrid, nuclear and electric. Emphasizes fundamentals of each technique, and trade-offs in engine selection and design. Sp Qtr. 3 hr cl. Prereq: 550.

760 Advanced Compressible Flow UGRD 4
Two-dimensional supersonic flow theories. Sp Qtr. 4 cl. Prereq: 561 or equiv.

771 Aerodynamics of Viscous Compressible Flows UGRD 4
Analysis of laminar boundary layers in high speed flows. Introduction to interacting boundary-layer theory and triple-deck theory, three-dimensional boundary layers. Wi Qtr. 4 cl. Prereq: 570.

775 Hypersonic Flows I UGRD 4
Introduction to the analysis of inviscid hypersonic flow fields. * Au Qtr. 4 cl. Prereq: 561.

783H Honors Research UGRD 1-5
Supervised research and project work arranged individually for honors students. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Sr, honors standing, permission of instructor. Repeatable to a maximum of 12 cr hrs. Limitations on numbers of credit hours applicable toward degree are governed by departmental rules. This course is graded S/U.

800 Theory of Deformation and Flow GRAD 3
General treatment of the basic principles underlying the mechanics of deformable media from macroscopic point of view. Au Qtr. 3 cl. Prereq: 543, 560, and 570 or equiv. Required of all first yr grad students.

801 Deformation of Aerospace Structures GRAD 3
Application of the unifying theories and principles of solid and fluid mechanics to vehicular structures with emphasis on aerospace structures. Wi Qtr. 3 cl. Prereq: 800.

802 Analytical Methods in Engineering I GRAD 4
Advanced methods for solution of partial differential equations with applications to fluid dynamics and heat transfer; topics include Green’s function, integral transforms and asymptotic solutions. Wi Qtr. 4 cl. Prereq: 560, 414 or equivs.

803 Analytical Methods in Engineering II GRAD 3
Continuation of 802 with emphasis on the solution of singular perturbation problems. Sp Qtr. 3 cl. Prereq: 802.

805 Aerodynamics of Chemically Reacting Fluids GRAD 3
The aerodynamics of one-dimensional compressible flow with chemical reactions and wave propagation. Au Qtr. 3 cl. Prereq: 800.

810 Flight Vehicle Performance Analysis GRAD 3
Analysis of flight vehicle performance in planetary atmospheres. Au Qtr. 3 cl. Prereq: 550 and 761.

820 Advanced Flight Vehicle Stability and Control GRAD 3
Advanced studies in stability of systems, non-linear systems, Liapunov method, dynamics in extra-terrestrial atmospheres, new control methods. Wi Qtr. 3 cl. Prereq: 720.

842 Advanced Structures for Flight Vehicles GRAD 3
Advanced analysis and design of aircraft structures and/or structural components including thermal, inelastic, and buckling effects. * Sp Qtr. 3 cl. Prereq: 543, 800.
## Aeronautical and Astronautical Engineering

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>844</td>
<td>Optimal Aerospace Structural Design</td>
<td>GRAD 3</td>
<td>Optimal design of aircraft and spacecraft structural components; emphasis on the issues of</td>
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<td>mathematical modeling of design problems for optimization and solution search techniques.</td>
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<td>Sp Qtr. 2.5 hr, Prereq: 542, 543, and 801. Not open to students with credit for 842 given in</td>
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<td>Spring Qtrs 1990-94.</td>
</tr>
<tr>
<td>850</td>
<td>Non-Equilibrium Flow Dynamics</td>
<td>GRAD 3</td>
<td>Relaxation, dissociation, waves (sound, shock) nozzle flow and design collisional energy</td>
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<td>transfer in gases.</td>
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<td>Sp Qtr. 3 cl. Prereq: 530 or equiv.</td>
</tr>
<tr>
<td>851</td>
<td>Advanced Propulsion Problems</td>
<td>GRAD 3</td>
<td>Course will emphasize a detailed discussion of current problems in the field of air breathing</td>
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<td>propulsion. Major emphasis on technical papers from current archival literature.</td>
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<td>Wi Qtr. Prereq: 751 or MechEng 727 or permission. Not available to students with credit for</td>
</tr>
<tr>
<td>860</td>
<td>Advanced Topics in Aerodynamics</td>
<td>GRAD 3</td>
<td>Topics to include unsteady aerodynamics, transient wave phenomena, interactive and separated</td>
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<td>flow, transonic flows.</td>
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<td>* Au Qtr. 3 cl. Prereq: 780. Repeatable to a maximum of 6 cr hrs.</td>
</tr>
<tr>
<td>862</td>
<td>Internal Flows in Turbomachinery</td>
<td>GRAD 4</td>
<td>Designed to give graduate students a detailed understanding of the swirling, rotating,</td>
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<td>compressible, and unsteady internal flows typical of turbomachinery.</td>
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<td>Wi Qtr. Prereq; Prereq: AeroEng 570 or MechEng 705 or equivalent foundation in fundamental</td>
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<td>fluid mechanics and boundary layers; AeroEng 751 or MechEng 627 or equivalent foundation in</td>
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<td>turbomachinery.</td>
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<tr>
<td>865</td>
<td>Advanced Viscous Flow Theory</td>
<td>GRAD 3</td>
<td>Three-dimensional viscous flow at low and high Reynolds number; stability theory; statistical</td>
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<td>theories of turbulence.</td>
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<td>* Wi Qtr. 3 cl. Prereq: 771 and 800.</td>
</tr>
<tr>
<td>866</td>
<td>Hydrodynamic Stability of Fluid Motions</td>
<td>GRAD 4</td>
<td>Instability of inviscid and viscous parallel flows; thermal and centrifugal instability</td>
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<td>boundary-layer transition; and concepts of linear, nonlinear, and secondary instability analysis.</td>
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<td>* Sp Qtr. 4 cl. Prereq: 570, 800 or equiv, or permission of instructor. Not open to students with</td>
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<td>credit for MechEng 866.</td>
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<tr>
<td>868</td>
<td>Molecular Theory of Gas Flows</td>
<td>GRAD 3</td>
<td>Theory of gas flows from molecular points of view.</td>
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<td>Au Qtr. 3 cl. Prereq: 800 concor.</td>
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<tr>
<td>873</td>
<td>Computational Fluid Dynamics</td>
<td>GRAD 4</td>
<td>Advanced numerical methods for solving Navier-Stokes equations as well as equations for</td>
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<td>inviscid and boundary layer flows.</td>
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<td>* Sp Qtr. 4 cl. Prereq: 615 or MechEng 707.</td>
</tr>
<tr>
<td>875</td>
<td>Introduction to Turbulence</td>
<td>GRAD 3</td>
<td>Turbulence theory fundamentals and tools used to understand the physical mechanisms involved</td>
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<td>and their application to modeling and experiment.</td>
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<td>Sp Qtr. 3 cl. Prereq; 560, 570, 800 or permission of instructor. Not open to students with</td>
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<tr>
<td>880</td>
<td>Seminar</td>
<td>GRAD 1</td>
<td>Seminar</td>
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<td>Au, Wi, Sp Qtrs. 1.2-hr cl. Repeatable to a maximum of 15 cr hrs. Required of all grad students</td>
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<td>in AeroEng. This course is graded S/U.</td>
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<tr>
<td>889</td>
<td>Advanced Topics in Aeronautical and Astronautical Engineering</td>
<td>GRAD 2-5</td>
<td>Advanced Topics in Aeronautical and Astronautical Engineering.</td>
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<td>Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 15 cr hrs. This</td>
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<td>course is graded S/U.</td>
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<td>Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs.</td>
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<tr>
<td>999</td>
<td>Research in Aeronautical and Astronautical Engineering</td>
<td>GRAD 1-8</td>
<td>Research for thesis or dissertation purposes only.</td>
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<td>Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.</td>
</tr>
</tbody>
</table>

### African American and African Studies

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>Introduction to African-American and African Studies</td>
<td>UGRD 5</td>
<td>Introduction to scholarly study of Black experience from the 15th century to the present,</td>
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<td>focusing on patterns of resistance, adaptation and cultural diversity.</td>
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<td>Au, Wi, Sp Qtrs. Prereq: English 110. Not open to students with credit for 201. GEC soc sci</td>
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<td>individuals and groups course.</td>
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<tr>
<td>121</td>
<td>African Civilizations to 1870</td>
<td>UGRD 5</td>
<td>Exploration of the political, social, and economic history of precolonial African civilizations,</td>
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<td>using a variety of interdisciplinary approaches and materials.</td>
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<tr>
<td>122</td>
<td>African Civilizations, 1870 to the Present</td>
<td>UGRD 5</td>
<td>Exploration of the political, social, and economic history of colonial and independent African</td>
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<td>countries, using a variety of interdisciplinary approaches and materials.</td>
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<tr>
<td>154</td>
<td>Introduction to African American Literature</td>
<td>UGRD 5</td>
<td>Survey of the literature of African descendants in the United States from 1750 to 1915.</td>
</tr>
<tr>
<td>200</td>
<td>Major Readings in African American and African Studies</td>
<td>UGRD 5</td>
<td>Introduction to selected authors and texts that represent a broad range of subjects that define</td>
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<td>the core interdisciplinary focus of African American and African Studies.</td>
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<tr>
<td>208.20</td>
<td>African Performing Ensemble</td>
<td>UGRD 1</td>
<td>African Performing Ensemble. 1-2 hr cl. Prereq: Admission by audition and permission of instructor.</td>
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<td>Repeatable to a maximum of 18 cr hrs. VPA Admis Cond course. Including cr hrs earned in 199.20,</td>
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<td>and Music 199.20 and 208.20. Cross-listed in Music.</td>
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<tr>
<td>218</td>
<td>Black Urban Experience</td>
<td>UGRD 5</td>
<td>Examination of contemporary black urban experience focused on the impact of persistent</td>
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<td>residential segregation, increasing class polarization, and the global force of hip hop culture.</td>
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<td>GEC soc sci individuals and groups course.</td>
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<tr>
<td>220</td>
<td>The Black Woman: Her Role in the Liberation</td>
<td>UGRD 5</td>
<td>The political role of the black woman in the struggle for black freedom; examination of changing</td>
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<td>laws and customs affecting the status of black women.</td>
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<tr>
<td>243</td>
<td>Interdisciplinary Approaches to Race and Ethnicity in the Americas</td>
<td>UGRD 5</td>
<td>An introduction to traditional African American music and its role in the history and development</td>
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<td>of African American music with its concomitant socio-political milieu.</td>
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<td>Not open to students with credit for Music 244. Cross-listed in Music. VPA Admis Cond course.</td>
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<tr>
<td>251</td>
<td>Introduction to African Literature</td>
<td>UGRD 5</td>
<td>An assessment of the oral prose tradition and written prose of African literature; specific</td>
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<td>emphasis placed on student reading from primary sources.</td>
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<td>GEC arts and hums lit and social diversity - international issues (Global) course.</td>
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<tr>
<td>254</td>
<td>Themes in African - American Literature</td>
<td>UGRD 5</td>
<td>Survey of themes in the literature of African descendants in the United States from 1915 to</td>
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<td>present. GEC arts and hums lit course.</td>
</tr>
<tr>
<td>261</td>
<td>Black-White Behavior</td>
<td>UGRD 5</td>
<td>A survey of the strong behavioral elements affecting black-white relations. SS Admis Cond course.</td>
</tr>
<tr>
<td>271</td>
<td>Contemporary Black Drama</td>
<td>UGRD 5</td>
<td>A literary analysis and discussion of plays by black playwrights in recent times. GEC arts and</td>
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<td>hums lit course. VPA Admis Cond course.</td>
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<tr>
<td>288</td>
<td>Bebop to Doowop to Hiphop: The Rhythm and Blues Tradition</td>
<td>UGRD 5</td>
<td>Examines the aesthetic and historical evolution of Rhythm and Blues: Black music tradition</td>
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<td>including Bebop, Rock and Roll and Hiphop redefining American popular culture post WWII.</td>
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<td>2-2 hr cl. Not open to students with credit for Music 288. Cross-listed in Music. GEC arts and</td>
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<td>hums and VPA social diversity in the US course.</td>
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<tr>
<td>290</td>
<td>Black Youth</td>
<td>UGRD 5</td>
<td>Examines how differences of race, class, gender, nation and migration influence identity and</td>
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<td>experience of Black youth. Open to students with credit for 660.</td>
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<tr>
<td>291</td>
<td>The Black Family</td>
<td>UGRD 5</td>
<td>Study of culturally and structurally diverse forms of Black family life through historical times</td>
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<td>and geographic space.</td>
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<td>Not open to students with credit for 691.</td>
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</tbody>
</table>
## 6 African American and African Studies

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>294</td>
<td>Group Studies</td>
<td>UGRD 1-5</td>
<td>Groups of students are given an opportunity to pursue special studies not otherwise offered. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>303</td>
<td>Language, Race and Ethnicity in the U.S.</td>
<td>UGRD 5</td>
<td>Objective examination of the relationship between language, race and ethnicity in the context of varieties of English by minority ethnic and racial groups in the US. Prereq: English 110 or 111 or 110.02 or 110.03. Not open to students with credit for 305 or Linguis 305 or 305. Cross-listed in Linguistics. GEC arts and hums cultures and ideas and social diversity in the US course.</td>
</tr>
<tr>
<td>310</td>
<td>Global Perspectives on the African Diaspora</td>
<td>UGRD 5</td>
<td>Study of historical processes, key figures and ideas, and cultural expressions of the worldwide dispersion of African descent from different times and places.</td>
</tr>
<tr>
<td>323.01</td>
<td>History of African-Americans in the Age of Slavery</td>
<td>UGRD 5</td>
<td>Origins of modern slavery: its development in the U.S.; the evolution of African-American life and culture from 1619 to the end of the Civil War. Not open to students with credit for 223 or History 223, or 260. Cross-listed in History.</td>
</tr>
<tr>
<td>323.02</td>
<td>History of African-Americans from Emancipation to the Present</td>
<td>UGRD 5</td>
<td>The rise of debt peonage among blacks; the formation of the northern ghetto; the Civil Rights Movement and beyond. Not open to students with credit for 224, 238, or History 224, 260, or 323.02. Cross-listed in History.</td>
</tr>
<tr>
<td>326</td>
<td>Black Americans and the Legal System</td>
<td>UGRD 5</td>
<td>An examination of the role of the legal system in the social and political dynamics of blacks in American society.</td>
</tr>
<tr>
<td>327</td>
<td>Introduction to African Politics</td>
<td>UGRD 5</td>
<td>Examination of dynamics of nation-building in African countries in transition from colonial dependencies to modern nation-states.</td>
</tr>
<tr>
<td>342</td>
<td>Music, Religion, and Ritual in Africa</td>
<td>UGRD 5</td>
<td>Survey of variety and interaction of musical and religious expressions in selective African societies, focusing on traditional contexts and contemporary Christian and Islamic examples. Prereq: 2 2-hr cl.</td>
</tr>
<tr>
<td>342H</td>
<td>Music, Religion, and Ritual in Africa</td>
<td>UGRD 5</td>
<td>Survey of variety and interaction of musical and religious expressions in selective African societies, focusing on traditional contexts and contemporary Christian and Islamic examples. Prereq: 101 or Music 140 or permission of instructor. Assigned/guided fieldwork projects in Columbus Metropolitan Area. GEC arts and hums cultures and ideas and social diversity - international issues (Global) course.</td>
</tr>
<tr>
<td>345</td>
<td>African American Thinkers</td>
<td>UGRD 5</td>
<td>Designed to acquaint students with race, gender, class, nationality, and other ideologies embedded in American political and social institutions. Prereq: English 110. Not open to students with credit for 545. GEC arts and hums lit course.</td>
</tr>
<tr>
<td>350</td>
<td>History of Modern Africa</td>
<td>UGRD 5</td>
<td>General survey of political, economic, and social developments in colonial and post-independence Africa. Prereq: One 10-hr GEC historical survey sequence or permission of instructor. Not open to students with credit for History 350. Cross-listed in History.</td>
</tr>
<tr>
<td>351</td>
<td>Caribbean Literature in English</td>
<td>UGRD 5</td>
<td>A consideration of prose, poetry, and drama written by Caribbean authors focusing on Caribbean literature in English within the framework of black literature. Sp Qtr. 5 cl.</td>
</tr>
<tr>
<td>361</td>
<td>Psychology of the Black Experience</td>
<td>UGRD 5</td>
<td>An analysis of personality theories commonly applied to black Americans and the black experience.</td>
</tr>
<tr>
<td>367.02</td>
<td>African-American Theatre History</td>
<td>UGRD 5</td>
<td>Examination of the aesthetic and sociological evolution in America of African-American theatre and its literature. Prereq: English 110 or 111 or equiv, and soph standing. Not open to students with credit for Theatre 367.02. GEC second writing and social diversity in the US course. Cross-listed in Theatre.</td>
</tr>
<tr>
<td>367.03</td>
<td>African-American Voices in U. S. Literature</td>
<td>UGRD 5</td>
<td>Discussion, analysis, and writing about issues presented through the diverse voices of African-American literature. Prereq: English 110 or 111 or equiv, and sop standing. Not open to students with credit for English 367.03. GEC second writing and arts and hums lit and social diversity in the US course.</td>
</tr>
<tr>
<td>367.04</td>
<td>Black Women Writers: Text and Context</td>
<td>UGRD 5</td>
<td>Writing and analysis of black women's literary representations of issues in United States social history. Prereq: English 110 or 111 or equiv, and sop standing. Not open to students with credit for WGSSt 215 or 367.04. GEC second writing and arts and hums lit and social diversity in the US course. Cross-listed in WGSSt.</td>
</tr>
<tr>
<td>376</td>
<td>African-American Art</td>
<td>UGRD 5</td>
<td>A topic or period approach to the works of African-American visual artists and art movements. 2-2-hr cl. GEC arts and hums VPA and social diversity in the US course.</td>
</tr>
<tr>
<td>378</td>
<td>History of Jazz I</td>
<td>UGRD 5</td>
<td>An in-depth study of the periods, trends, major performers/composers, styles and influences of jazz from its beginnings through the Swing era.</td>
</tr>
<tr>
<td>379</td>
<td>History of Jazz II</td>
<td>UGRD 5</td>
<td>Continuation of 378 from Bop through current styles.</td>
</tr>
<tr>
<td>451</td>
<td>Black Experience in Caribbean, African, and African-American Literature</td>
<td>UGRD 5</td>
<td>Exploration of themes, attitudes, and parallels in black literatures of Africa, the United States, and the Caribbean; emphasis on negritude and Pan-Africanism. Prereq: Jr or sr standing.</td>
</tr>
<tr>
<td>460</td>
<td>Political Thought in African Literature</td>
<td>UGRD 5</td>
<td>A study of political thought of selected African novelists in the 20th century.</td>
</tr>
<tr>
<td>485.01</td>
<td>Southern Africa Society and Culture</td>
<td>UGRD 5</td>
<td>A study of the social and cultural developments in Southern Africa, and the environment. Sp Qtr. 2 2-hr cl. Prereq: Enrollment or credit for English 110, and 2-quarter status. Not open to students with credit for 385.01. Not open to students with credit for 385.02. Students will pay all travel and subsistence costs.</td>
</tr>
<tr>
<td>485.02</td>
<td>Southern African Study Tour</td>
<td>UGRD 8</td>
<td>A study tour of Southern Africa to accompany 485.01. Su Qtr. Arr 3-week study tour of Southern Africa. Prereq: 485.01, enrollment or credit for English 110, and 2-quarter status. Not open to students with credit for 385.02. Students will pay all travel and subsistence costs.</td>
</tr>
<tr>
<td>493</td>
<td>Individual Studies</td>
<td>UGRD 1-5</td>
<td>Exploration of relevant subject as individually designed by student and professor. Prereq: 20 cr hrs of AfAm&amp;ASt course work, permission of instructor, and permission of dept chair. Repeatable to a maximum of 10 cr hrs. Including or hrs earned in 293. This course is graded S/U.</td>
</tr>
<tr>
<td>495</td>
<td>Community Development in Urban African-American Districts: Field Research and Seminar</td>
<td>UGRD 5</td>
<td>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. 1-2 hr cl per qtr and 30 hrs at a service learning site per qtr. Prereq: 101 or 201 and permission of course coordinator. Repeatable to a maximum of 10 or hrs.</td>
</tr>
<tr>
<td>504</td>
<td>Black Politics</td>
<td>UGRD 5</td>
<td>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. Not open to students with credit for Political Science 208 or 504. Cross-listed in Political Science 208.</td>
</tr>
<tr>
<td>505</td>
<td>Language and the Black Experience</td>
<td>UGRD 5</td>
<td>Introduction to the structure, history, and use of distinctive varieties of English used by and among many African Americans in the U.S. Prereq: English 110 or 110.01 or 110.02 or 110.03. Not open to students with credit for English 505 or Linguist 505. Cross-listed in English and Linguistics.</td>
</tr>
<tr>
<td>505S</td>
<td>Language and the Black Experience</td>
<td>UGRD 5</td>
<td>Introduction to the structure, history, and use of distinctive varieties of English used by and among many African Americans in the U.S. Prereq: English 110 or 110.01 or 110.02 or 110.03. Not open to students with credit for English 505 or Linguist 505. Cross-listed in English and Linguistics. Service Learning course.</td>
</tr>
<tr>
<td>515</td>
<td>Ethnicity, Development and the State in Sub-Saharan Africa</td>
<td>UGRD 5</td>
<td>Course takes a theoretical and comparative historical approach to analyzing problems of development, ethnicity and conflict in Sub-Saharan Africa. 2-2-hr cl. Prereq: Rank 2 or higher or permission of instructor. Not open to students with credit for IntStds 515. Cross-listed with IntStds 515.</td>
</tr>
<tr>
<td>527</td>
<td>Pan-Africanism and Nationalism</td>
<td>UGRD 5</td>
<td>Modern nationalist and Pan-Africanists movements in Africa and the Black Diaspora; parallels and contrasts between African political and social class protests within postcolonial black states.</td>
</tr>
</tbody>
</table>
African American and African Studies 7

705.01 Graduate Seminar in Southern African Society and Culture
A critical examination of the historical, cultural, economic and socio-political realities of Southern Africa and their impact on the contemporary landscape and environment. Sp Qtr. 2 2-hr cl. Prereq; Grad standing. Repeatable to a maximum of 10 cr hrs.

705.02 Study Abroad to Southern Africa
A three-week study tour of selected sites of historical, cultural, economic and socio-political importance in the contemporary Southern African region. Sp Qtr. Prereq; 705.01 and grad standing. Repeatable to a maximum of 16 cr hrs.

705.03 Graduate Seminar in West African Society and Culture
A critical examination of the historical, cultural, economic and socio-political realities of West Africa and their impact on the contemporary landscape and environment. Sp Qtr. 2 2-hr cl. Prereq; Grad standing. Repeatable to a maximum of 10 cr hrs.

705.04 Study Abroad to Western Africa
A critical examination of the historical, cultural, economic and socio-political realities of West Africa and their impact on the contemporary landscape and environment. Su Qtr. Arr. Prereq; 705.03 and grad standing. Repeatable to a maximum of 10 cr hrs.

710.01 Practicum: Community Service
First of a two-part course in experiential learning, seeking to prepare students with the types of training and experience that go beyond the traditional coursework and classroom. This course involves practical work with a community based organization. Prereq; 756. This course is graded S/U.

710.02 Practicum: Grant Proposal Writing
Second of a two-part course in experiential learning, seeking to prepare students with the types of training and experience that go beyond the traditional coursework and classroom. Prereq; Grad standing or permission of instructor. Not open to students with credit for 675 or 537 or History 675 or 552. Repeatable to a maximum of 15 cr hrs.

717 African American Political Leadership
An intensive reading course that examines Black people's struggle to acquire power. Wi Qtr. 1 3-hr cl. Prereq; Grad standing or permission of instructor. Not open to students with credit for 694 (W008) or Polisci 719. Cross-listed with Polisci 719.

718 Citizen Participation
Assessment and application of techniques of organization and action in the black community. Repeatable to a maximum of 15 cr hrs.

725 Political Development of Sub-Saharan Africa
The processes and problems of political change in Sub-Saharan Africa.

730 Black Political Movements and Organizations
Analysis of black political movements and organizations from slavery to contemporary times. Prereq; Grad standing or permission of instructor.

732 Law, Politics and Human Rights in Africa
An examination of the interplay of law and politics in contemporary Africa, and the place of human rights in the emerging order. Prereq; Grad standing or permission of instructor. Not open to students with credit for 632.

734.01 Topics in Race and the American Legal System: Affirmative Action
An examination of the changes over time in selected areas of American law and the consequences of those changes on the status of Black Americans: a study of the concept of Affirmative Action including a critical examination of the arguments for and against it. Prereq; Grad standing or permission of instructor.

734.02 Topics in Race and the American Legal System: Race and Employment
An examination of the changes over time in selected areas of American law and the consequences of those changes on the status of Black Americans: an examination of the significance of race and the application of the concept of Affirmative Action in employment. Prereq; Grad standing or permission of instructor.

742 African Historiography and Methodology
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 15 cr hrs. Including cr hrs earned in History 742. Cross-listed in History.

743 Studies in African History
The study of the historical literature of Africa and various aspects of African history; topics vary. Prereq; Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

748 Contemporary Art Music Traditions of Africa
An examination of selected published and unpublished musical works by contemporary composers of sub-Saharan Africa and of African descent. Prereq; Jr or Sr standing. Not open to students with credit for Music 748. Cross-listed in Music.

541 History of Islam in Africa UGRD 5
An examination of the history and spread of Islam in Africa and its impact on African social, economic, and political institutions. Prereq; 121 or 122, or History 121 or 122, or grad standing. Not open to students with credit for 643 or History 541.02 or 643. Cross-listed with History 541.02.

545 Intersections: Approaches to Race, Gender, Class, and Sexuality UGRD 5
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 Africana or CompStsl or WS&S or grad standing. Not open to students with credit for CompStsl 545 or WS&S 545. Cross-listed in CompStsl and WS&S.

551 Selected Topics in African-American and Related Literatures UGRD 5
Topics selected will relate to specific interests of enrolled students, who will develop an intensive analysis of the topic of their choice. Prereq; 251 or 351. GEC arts and hums lit and social diversity in the US course.

555.01 Topics in African-American History I UGRD 5
Selected topics in African-American history from the origins of African-American culture and slavery to emancipation. Prereq; One 10-hr GEC historical survey sequence and Jr or Sr standing, or permission of instructor. Repeatable to a maximum of 10 cr hrs, including cr hrs earned in History 555.01 and 555.02. Cross-listed in History.

555.02 Topics in African-American History II UGRD 5
Selected topics in African-American history from emancipation through segregation, and the Civil Rights Movement to the present. Prereq; One 10-hr GEC historical survey sequence and Jr or Sr standing, or permission of instructor. Repeatable to a maximum of 10 cr hrs, including cr hrs earned in History 555.01 and 555.02. Cross-listed in History.

561 Topics in African American Psychology UGRD 5
The study of different dimensions of African and African American psychology; topics vary. Prereq; 261, or 361 or grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

565 Slavery in the Atlantic World UGRD 5
This course will investigate the dispersion of Africans in the Americas and will examines systems of unfree labor and slave trading throughout the Atlantic World.

571 Images of Black People in Film and Popular Media UGRD 5
Historical and theoretical study of Black representation in film and popular culture in the US, Wi Qtr. Prereq; Jr or Sr standing. GEC arts and hums VPA and social diversity in the US course.

575 History of South Africa UGRD 5
An examination of the political and social developments in South Africa from the nineteenth century to the present. Au, Wi, Sp Qtrs. 2 2-hr cl. Not open to students with credit for 675 or 537 or History 675 or 552. Cross-listed with History 552.

582 Studies in African-American Literature UGRD 5
Topics vary; examples: Neo-slave narratives; the Harlem Renaissance; literature by African-American women. Prereq; English 110 or 111 or equiv. Repeatable to a maximum of 10 cr hrs. Including cr hrs earned in English 582. Cross-listed in English.

584H Literature and Modern Experience in Africa UGRD 5
A comprehensive view of the dominant thematic directions of African literature in the European languages, and their formal realization in aesthetic and symbolic terms. Prereq; Any GEC second writing course (367) and enrollment in an honors program.

595 Theorizing Race UGRD 5
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. 2 2-hr cl. Prereq; GEC second writing course or Philos 230 or Jr level or above class standing or permission of instructor. Not open to students with credit for Philos 395. Cross-listed in Philosophy.

605 An Introduction to African-American English GRAD 5
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 at 500-level or above. Not open to students with credit for Linguist 605. Cross-listed in Linguistics.

693 Individual Studies UGRD 1-5
Individual reading or research projects by special agreement between instructor and student. Prereq; Permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

694 Group Studies UGRD 1-5
Group Studies. Prereq; Permission of instructor. Repeatable to a maximum of 15 cr hrs.
8 African American and African Studies

750 Language and Society in Africa  GRAD 5
A survey of the interplay between language and society in the African context. Prereq: Grad standing or permission of instructor. Not open to students with credit for 650.

751 Introduction to Graduate Studies in African Literature  GRAD 5
A broad survey of the development of African literature, its variations, genres and themes. Prereq: Grad standing or permission of instructor.

752 Readings in African-American History  GRAD 5
Readings in the evolution of black culture, economics and family life, race relations, and the emergence of class stratification within the black community. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs. Including cr hrs earned in History 752. Cross-listed in History.

753 Graduate Survey in African-American and African Studies  GRAD 5
Critical analysis of the development of African-American and African studies as a discipline and the theoretical approaches to its subject matter. Prereq: Grad standing or permission of instructor.

754 Methodological Perspectives in African-American and African Studies  GRAD 5
A critical and transdisciplinary examination of methodological approaches employed in the study of the black experience in its convergent and divergent manifestations across the world. Prereq: Grad standing.

755.01 African Americans in Early America  GRAD 5
Intensive reading and discussion seminar explores African American life and culture during the colonial, revolutionary, and early national eras. Prereq: Grad standing. Repeatable to a maximum of 10 cr hrs. Cross-listed in History.

755.02 African Americans during the Nineteenth Century  GRAD 5
A study of the social, political, and economic history of black Americans during the 19th century. Prereq: Grad standing. Repeatable to a maximum of 10 cr hrs. Cross-listed in History.

755.03 African Americans during the Twentieth Century  GRAD 5
The reading intensive seminar explores African American life and culture during the twentieth century. Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs. Cross-listed in History.

755.04 African American Historiography  GRAD 5
This course is designed to acquaint students with the origins and evolution of African American history from the late-eighteenth century up to the present. Prereq: Grad standing. Repeatable to a maximum of 10 cr hrs. Cross-listed in History.

756 Theorizing Race and Ethnicity  GRAD 5
Examination of the ideas and theories of race and its intersection with ethnicity. Prereq: Grad standing or permission of instructor.

757.01 Introduction to Graduate Studies in African-American Literature, 1746-1900  GRAD 5
A survey of creative texts and critical interpretations representing and reflecting black culture and literary expression in the United States from 1746 to 1900. Not open to students with credit for English 757.01. Cross-listed in English.

757.02 Introduction to Graduate Studies in African-American Literature, 1900 to Present  GRAD 5
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. Not open to students with credit for English 757.02. Cross-listed with English.

758.01 Comparative History of the African Diaspora: Enslavement and Emancipation  GRAD 5
First of a two-part course on the history and evolution of the African Diaspora worldwide, from ancient times to the present. 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 or permission of instructor. Not open to students with credit for History 758.01. Cross-listed in History.

758.02 Comparative History of the African Diaspora: Post-Emancipation, Colonial and Post-Colonial Realities  GRAD 5
Second of a two-part course on the 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, from the period of the emancipation to the beginning of the 21st century. Prereq: Grad standing and 758.01 or History 758.01; or permission of instructor. Not open to students with credit for History 758.02. Cross-listed in History.

759 Topics in African Diaspora Studies  GRAD 5
A multi-disciplinary and critical examination of the origins, dimensions, and legacies of the African Diaspora. Topics will vary each term. Sp Qtr. 1-3 hr d. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 20 cr hrs.
African American and African Studies 9

531 Experiential Education in Public Schools UGRD 3
Examines the use of supervised agricultural experience programs and FFA activities as experiential education components of a comprehensive secondary agricultural education program.
Sp Qtr. 2 1.5-hr cl. Prereq or concur: 530. Not open to students with credit for AgrEdu 641.

532 Instructional Media and Technology UGRD 3
Theory and practice in developing and using instructional media and technologies in the teaching and learning process.
Sp Qtr. 1 2.5-hr cl. Prereq or concur: 530.

560.01 Field Experience in Extension I UGRD 5
Supervised participation in professional activities of extension personnel.
Prereq: 530, minimum CPHR 2.50. Concur: 560.02, 560.03 Application required at least two quarters prior to enrollment.

560.02 Field Experience in Extension II UGRD 5
Clinical analysis of professional extension activities in conferences and seminars.
Prereq: 530, minimum CPHR 2.50. Concur: 560.01, 560.03 Application required at least two quarters prior to enrollment.

560.03 Field Experience in Extension III UGRD 5
Written assignments, lesson plans, and documentation of professional extension activities.
Prereq: minimum CPHR 2.50. Concur: 560.01, 560.02 Application required at least two quarters prior to enrollment.

580.01 Field Experience in Public Schools I UGRD 5
Supervised participation in teaching and other professional responsibilities of teachers in agriculture in public schools.
Au Qtr. Prereq: 530, minimum CPHR 2.50. Concur: 580.02, 580.03, 585. Application required a least two quarters prior to enrollment.

580.02 Field Experience in Public Schools II UGRD 5
Clinical analysis of teaching agriculture in the public schools in conferences and seminars.
Au Qtr. Prereq: 530, minimum CPHR 2.50. Concur: 580.01, 580.03, 585. Application required a least two quarters prior to enrollment.

580.03 Field Experience in Public Schools III UGRD 5
Written assignments, lesson plans, and documentation of teaching agriculture in the public schools.
Au Qtr. Prereq: 530, minimum CPHR 2.50. Concur: 580.01, 580.02, 585. Application required a least two quarters prior to enrollment.

585 Program Development in Public Schools UGRD 3
Principles and procedures used in planning and conducting programs of agricultural education.
Au Qtr. 5 7-hr cl last week of quarter. Prereq: 530; concur: 580.

594 Group Studies UGRD 3
Group studies for students in specialized programs.
Au, Wi, Sp Qtr. Prereq. Repeatability to a maximum of 15 cr hrs.

622 Continuing Education in Agricultural and Extension Education UGRD 3
Principles and practices involved in developing vocational, technical, and extension programs for out-of-school youth and adults.
Wi Qtr. 1 2.5-hr cl.

630 Senior Seminar in Agricultural and Extension Education UGRD 5
Debate, consideration, and integration of agricultural education from a wider agricultural perspective, including international awareness, problem solving, and ethical decision-making.
Wi Qtr. 2 2-hr cl. Prereq: Sr standing and second writing course and 530.01 or 530.02 (or concur). Not open to students with credit for 600. GEC third writing course.

640 Instructional Media in Teaching Agriculture UGRD 3
Theory and practice in developing and using instructional media and equipment at the secondary, technical, and college levels.
^ Sp Qtr. 1 2.5-hr cl.

641 Occupational Experience in Agricultural Education UGRD 3
Principles and procedures used in selecting, planning, conducting, and evaluating occupational experience programs for students.
^ Su Qtr. 1 2.5-hr cl.

642 Youth Organizations UGRD 3
An analysis of youth organizations in vocational and extension education with emphasis on planning and conducting such programs.
* Sp Qtrs. 1 2.5-hr cl.

643 Youth Program Management in Non-School Settings UGRD 3
Principles, theories, and practices involved in conducting, supervising, and managing a youth program.
* Sp Qtr. 3 cl.
10 Agricultural and Extension Education

655 Internship in Agricultural and Extension Education UGRD 1-15
Guided participation to further enhance professional and/or technical competency in selected areas.
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

683H Honors Projects UGRD 1-10
Conducting and reporting the honors project.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Agr H590.01, enrollment in honors program, and permission of honors project supervisor. Repeatable to a maximum of 10 cr hrs. Repeatable as H683 or in combination with 293, 593, H593, H693, 691, or H693. This course is graded S/U.

693 Individual Studies UGRD 1-5
Planning, conducting, and reporting a special study appropriate to the needs of the student.
Su, Au, Wi, Sp Qtrs. Prereq: 2.50 cumulative gpa-ratio and written permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

694 Group Studies GRAD 1-3
Selected topics in agriculture and extension education.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

697 Study at a Foreign Institution UGRD 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 25 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

700 Foundations of Agricultural and Extension Education GRAD 3
Comparative examination of the mission, purpose, and historical foundations of agricultural and extension education in America.
** Au Qtr. 1 3-hr cl. Not open to students with credit for 810.

723 Strategic Planning in Agricultural and Extension Education GRAD 3
Strategic planning, implementation, and management of education, extension, and training programs in community settings.
* Wi Qtr. 1 3-hr cl. Prereq: 283 or permission of instructor. Not open to students with credit for 843.

735 Methods of Teaching Agricultural and Extension Education GRAD 3
Theory, principles, and procedures associated with effective teaching in agricultural and extension education at the secondary, technical, and post-secondary levels.
Sp Qtr. 1 3-hr cl. Not open to students with credit for 631. This course is graded S/U.

750 Grant Proposal Writing GRAD 3
Course covers preparation of grant proposals for teaching, research, or outreach programs. Emphasis on proposal development, identifying funding sources, and the proposal review process.
*Sp Qtr. Prereq: Grad standing.

770 Program Evaluation in Agricultural and Extension Education GRAD 3
Evaluation principles and procedures used in developing vocational, technical, and extension programs. Wi Qtr. 1 3-hr cl.

785 Program Supervision in Agricultural and Extension Education GRAD 3
Examines the role and processes of supervision in improving agricultural extension education programs, emphasizes leadership practices, addresses the concepts, principles, and skills needed to be a successful supervisor.
** Au Qtr. 1 3-hr cl. Not open to students with credit for 830.

789 Survey Research Practicum GRAD 5
Hands-on applications for students interested in the planning, implementation, and analysis of a scientific sample survey.

790 Workshop in Agricultural and Extension Education GRAD 1-5
Intensive study of selected programs, practices, and skills with an emphasis on applications in agricultural and extension education.
Su, Au, Wi, Sp Qtrs. Minimum of 3 wks. Prereq: Teaching or extension experience. Repeatable to a maximum of 34 cr hrs.

795.01 Seminar: Contemporary Problems GRAD 1-3
*Au Qtr. Prereq: Written permission of instructor. A maximum of 15 cr hrs may be earned with not more than 6 hours in any one decimal subdivision. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

795.02 Seminar: Problems and Issues GRAD 1-3
**Wi Qtr. Prereq: Written permission of instructor. Repeatable to a maximum of 6 cr hrs. A maximum of 15 cr hrs may be earned with not more than 6 hours in any one decimal subdivision.

795.03 Seminar: Leadership Development GRAD 1-3
Su (1st term) Qtr. Prereq: Written permission of instructor. Repeatable to a maximum of 6 cr hrs. A maximum of 15 cr hrs may be earned with not more than 6 hours in any one decimal subdivision.

795.04 Seminar: Program Development GRAD 1-3
** Au Qtr. Prereq: Written permission of instructor. Repeatable to a maximum of 6 cr hrs. A maximum of 15 cr hrs may be earned with not more than 6 hours in any one decimal subdivision.

795.05 Seminar: Research and Evaluation GRAD 1-3
Au, Sp Qtrs. 2 hr cl. Prereq: Written permission of instructor. A maximum of 15 cr hrs may be earned with not more than 6 hours in any one decimal subdivision. This course is graded S/U.

795.07 Seminar: Graduate Student Orientation GRAD 1-3
Graduate seminar designed to establish a "culture of scholarship" among graduate students in Agricultural and Extension Education and related areas.
Au Qtr. Repeatable to a maximum of 6 cr hrs. Sequence with 795.08 and 795.09. This course is graded S/U.

795.08 Seminar: Research Scholarship GRAD 1-3
Graduate seminar designed to establish a "culture of scholarship" among graduate students in Agricultural and Extension Education and related areas.
Wi Qtr. Repeatable to a maximum of 6 cr hrs. Sequence with 795.07 and 795.09. This course is graded S/U.

795.09 Seminar: Scholarship Dissemination GRAD 1-3
Graduate student seminar designed to establish a "culture of scholarship" among graduate students in Agricultural and Extension Education and related areas.
*Sp Qtr. Repeatable to a maximum of 6 cr hrs. Sequence with 795.07 and 795.08. This course is graded S/U.

800 History and Philosophy of Agricultural and Extension Education GRAD 3
Historical and philosophical concepts of agricultural and extension education which have established the traditions from which modern programs have evolved.
Au Qtr. 1 3-hr cl.

821 Administrative Practices in Vocational Education GRAD 3
A study of the concepts of vocational education program administration, including management skills, policy development, staff management, finance, and program evaluation.
** Sp Qtr. 1 2.5-hr cl. Not open to students with credit for 811 or EdVotec 821. Cross-listed in EduPAES 828.

823 Program Planning in Agricultural and Extension Education GRAD 3
Planning, implementation, and management of instructional systems in education and training programs.
** Wi Qtr. 1 3-hr cl.

831 Teaching and Learning in Agricultural and Extension Education GRAD 3
Cognitive, psychological and teaching methods relevant to agricultural education including human development and problem solving.
*Su Qtr. 1 3-hr cl.

840 Agricultural Communication Theory and Practice GRAD 3
Communication theories and methods applied to the food, agricultural and environmental sciences, including social scientific foundations of communication research.
* Su, Sp Qtrs. 2 1.5-hr cl.

842 Leadership and Administration in Agricultural and Extension Education GRAD 3
Theories, concepts and principles for leadership, administration and management in communication, education, extension and community settings.
Sp Qtr. 1 3-hr cl. Not open to students with credit for 811.

885 Research Methods GRAD 3
Principles and techniques of research appropriate for planning, conducting, and reporting research in vocational, technical, and extension education.
Su (1st term). 5 cl; Au, Wi Qtrs. 1 3-hr cl.

886 Research Design GRAD 3
Development of effective design for research problems in vocational, technical, and extension education, including theory, models, and sampling.
Wi, Sp Qtrs. 2.1-5-hr cl. Prereq: 885 or equiv.

887 Analysis and Interpretation of Data GRAD 3
Application and interpretation of descriptive and inferential statistics for research in vocational-technical and extension education, including the use of the computer.
Au, Sp Qtrs. 1 2.5-hr cl. Prereq: 886 or equiv.
Agricultural Communication

Introduction to Agricultural Communication UGRD 5

History and development of mass communication and its application in agriculture. Examination of career opportunities and skills needed to enter the profession.

Agricultural Issues in Contemporary American Society UGRD 5

Development of skills in reading, writing, speaking, listening, critical thinking, and appreciation of diversity in agriculture and the United States society.

Oral Expression in Agriculture UGRD 5

Oral expression theory and practice in an agricultural environment.

Advanced Agricultural Communication Technology UGRD 5

Exploration of the new media technologies used in the agricultural organizations.

Publication Design and Production UGRD 5

Application of layout and design principles to produce print and electronic documents for various audiences.

Agricultural Communication Internship UGRD 2-5

Coordinated and supervised experience in agricultural communication including reporting, writing, editing, photography, graphics, broadcasting, advertising, and public relations.

Agricultural Feature Writing UGRD 5

Principles and practice in feature writing. Laboratory experience in writing, editing, design, photography, and advertising.

Campaign Design and Management in Agricultural Organizations UGRD 5

Case studies, plans, and practices in public relations campaigns.

Senior Seminar in Agricultural Communication UGRD 5

Capstone course addressing communication issues of the contemporary world as related to agricultural and natural resource industries.

Agricultural and Extension Education

Individual Studies UGRD 1-5

Students plan, conduct, and report on a special problem in agricultural communication not included in regular course work.

Legal and Ethical Issues in Agricultural Communication UGRD 5

Examination and discussion of complex legal and ethical situations affecting socially responsible communication of food, agricultural and environmental topics.

Legal and Ethical Issues in Agricultural Communication UGRD 5

Examination and discussion of complex legal and ethical situations affecting socially responsible communication of food, agricultural and environmental topics.

Communication Strategies for Change and Development UGRD 5

Examines communication competencies needed by development and social change practitioners.

Small Air-Cooled Engines UGRD 4

Principles of operation, maintenance, and repair of small air-cooled engines.

Basic Metal Fabrication for Agriculture UGRD 4

A study of the principles and practices in basic metal fabrication using current metallurgical and welding processes required in the agricultural industry.

Professional Development I UGRD 3

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.

Engineering Technologies in Agriculture II UGRD 3

Continuation of 300.

Professional Development I UGRD 4

Business communications and professional development in Agricultural Systems Management including informative and persuasive writing, academic planning, project management, research techniques, team writing, report writing and presentations.

Engineering Technologies in Agriculture I UGRD 3

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.
Agricultural Systems Management

310 Electric Power for Ag and Residential UGRD 3 Applications
Principles and applications of systems and components essential for distribution and control of electricity for power, heat, and illumination in residences and agricultural structures.
Wi Qtr. 2 cl, 1 2-hr lab. Prereq: Math 148, Physics 103 or (preferred) Physics 111 or 131; or permission of the instructor. Not open to students with credit for ConSysMt 310.

320 Facilities for Agricultural and Greenhouse UGRD 5 Production
Buildings and equipment for livestock, crop, and greenhouse production; selection and specification of ventilation systems, waste management alternatives, and construction materials
Wi Qtr. 4 cl, 1 2-hr lab. Prereq: Math 149; Physics 103 or (preferred) Physics 111 or 131; or permission of instructor.

360 Agricultural Machinery UGRD 5
Basic principles of operation, selection and management of agricultural machinery, including power requirements, performance evaluation, calibration, adjustment, costs of operation and optimum size.
Sp Qtr. 2 2-hr cl, 1 3-hr lab. Prereq: Math 148, Physics 103 or (preferred) Physics 111 or 131, or permission of instructor. Not open to students with credit for AgSysMgt 301.

370 Principles of Hydrology UGRD 3
Principles of hydrology applied to agricultural and forest watersheds, including applications in drainage, erosion, irrigation, water supply, and water quality.
Au Qtr. 2.5 5-hr cl. Prereq: Math 148, Physics 103 or (preferred) Physics 111 or 131; or permission of the instructor.

371 Land Surveying for Agricultural and UGRD 2 Environmental Systems
Principles of land surveying applied to soil and water management on agricultural and environmental areas.
Sp Qtr. 1 1-hr cl, 1 3-hr lab. Prereq: Math 148; prerequisite or concurs: Physics 103 or (preferred) Physics 111 or 131; or permission of instructor.

489 Internship in Agricultural Systems Management UGRD 3
A pre-approved internship of planned and supervised experiences which provide professional and technical growth in agricultural and related industries.
Su, Au, Wi. Wi Qtr. Arr. Prereq: AgSysMgt major, 15 cr hrs in AgSysMgt and permission of instructor. Repeatable to a maximum of 6 cr hrs. Quarter of enrollment will be assigned by internship coordinator in consultation with student.

533 Laboratory Pedagogy and Management UGRD 3
Develops the pedagogical and management skills required to efficiently utilize educational laboratory facilities at the secondary school level for teaching agricultural mechanics and science.
Sp Qtr. 2 cl, 1 3-hr lab. Prereq: Agricultural education major.

550 Pollution Control and Waste Utilization UGRD 3
Management and utilization of animal wastes, fertilizers, pesticides, crop residues, milk and food processing, and farmstead and urban solid wastes to abate environmental pollution at the urban-rural interface.
Sp Qtr. 3 cl. Not open for grad cr to students majoring in Food, Agricultural, and Biological Engineering.

560 Fluid Power and Electronics in Agricultural UGRD 4 Machinery
Principles of operation, maintenance and selection of basic fluid power, electrohydraulic, electronic and computer controlled systems found on agricultural and construction machinery.
Wi Qtr. 2 cl, 2 2-hr labs. Prereq: 360 or permission of instructor.

575 Soil and Water Systems UGRD 3
Planning and managing drainage, irrigation, erosion prevention, and water storage systems.
Sp Qtr. 2 cl, 1 2-hr lab. Prereq: 370 and 371, or ConSysMt 440, or permission of instructor. Not open to students majoring in Food, Agricultural, and Biological Engineering or Civil Engineering.

576 Water Management in the Landscape UGRD 4 Environment
Planning, evaluation, and management of soil and water systems (drainage, irrigation, erosion control, water use, supply, quality) for landscape and container nursery plants.
Sp Qtr. 2 2-hr cl. Prereq: 370, 371, HCS 308, SoilSci 300.01, and 300.02 or ENR 300.01 and 300.02; or permission of instructor.

580 Precision Agriculture UGRD 3
Introduction to the principles and technologies of precision agriculture including GPS, GIS, sensors to measure soil and plant parameters and crop yields; variable rate technology.
Au Qtr. 1 2-hr cl, 1 3.5-hr lab.

591.01 General UGRD 1-5
In-depth study of selected area of agricultural mechanization with emphasis on application of principles, objectives, methods, and equipment to organization, management, and teaching of agricultural mechanics.
General.
Prereq: Teaching or extension experience or permission of instructor. Repeatable to a maximum of 10 cr hrs.

600 Agricultural Safety and Health UGRD 3
Agricultural safety and health practices, strategies and methods for the management of safety and health programs.
Wi Qtr. 2 cl, 1 2-hr lab. Prereq: Second writing course, AgrComm 390 or Comm 321 or JComm 321; or permission of instructor. Not open to students with credit for ConSysMt 600. AgSysMgt 600 and 605 together fulfill GEC third writing course requirement.

605 Professional Development II UGRD 2
Initiating and pursuing career plans, academic program review, strategies for seeking employment, professional growth and furthering interpersonal relationships are documented in a career/professional portfolio.
Au, Wi. Sp Qtrs. 2-hr cl, 1 hr rec. Prereq: 305, second writing course, AgrComm 390 or Comm 321 or JComm 321; or permission of instructor. Not open to students with credit for ConSysMt 605. GEC third writing course, AgSysMgt 600 and 605 together fulfill requirement.

683H Honors Project UGRD 1-10
Conducting and reporting the honors project.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: FAES 590.01, enrollment in honors program, and permission of honors project supervisor. Repeatable to a maximum of 10 cr hrs. Repeatable as H83H or in combination with 293 or 693. This course is graded S/U.

693 Individual Studies UGRD 1-5
Problems not included in regular courses; practice in development, organization, solution, and reporting on such problems.
Su, Au, Wi, Sp Qtrs. Prereq: 2.50 cumulative pt/hr ratio and written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

694 Group Studies UGRD 1-5
Advanced group studies in agricultural systems management.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

Agricultural, Environmental, and Dev Economics

200 Principles of Food and Resource Economics UGRD 5
Microeconomic principles applied to allocation issues in the production, distribution, and consumption of food and natural resource use. 200H (honors) may be available.
Au, Wi, Sp Qtrs. 3 cl. Not open to students with credit for 200H, or Econ 200. This course available for EM credit. BER/LAR class. GEC soc sci human, natural, and economic resources course. SS Admis Cond course.

200H Principles of Food and Resource Economics UGRD 5
Microeconomic principles applied to allocation issues in the production, distribution, and consumption of food and natural resource use. Wi Qtr. 5 cl. Prereq: Honor's program or permission of department or instructor. Not open to students with credit for 200 or Econ 200 or 200H. BER/GEC/LAR course. GEC soc sci human, natural, and economic resources course. SS Admis Cond course.

205 Data Analysis for Agribusiness and Applied UGRD 5 Economics
Introductory course in data analysis, stressing computer applications of probability and statistics, problems of data gathering, presentation, and interpretation in economics and business.
Au, Wi, Sp Qtrs. 3 1-hr cl, 1 96-min lab. Prereq: Math 130 or 131 or 148 or 150 or 151. Not open to students with credit for AgEduc 387 or AEE 387, HCS 260, AnimSci 260, Stat 133 or 135 or 145. GEC data analysis course.

280 Feast or Famine: The Global Business of Food UGRD 5
Global and regional trends in food consumption and production are surveyed. Trade, technological change, and other responses to food scarcity are analyzed.
Wi Qtr. 2 2-hr cl, 1 1-3-hr cl. Prereq: 335 or IntStds 280. Cross-listed in International Studies. GEC soc sci human, natural, and economic resources course. SS Admis Cond course.

401 Principles of Agribusiness Management UGRD 5
Introduction to agribusiness management principles and skills in the context of the four functions of management: planning, organizing, directing, and controlling.
Au, Wi, Sp Qtrs. 2-2.5-hr cl, 1-1.5-hr cl. Prereq: 200 or 200H or Econ 200 or 200H.

402 Principles of Agribusiness Marketing UGRD 5
Study of specific problems of marketing food and fiber products with emphasis on structures and institutions facing agribusinesses in domestic and international markets.
Au, Wi, Sp Qtrs. 2-2.5-hr cl, 1-1.5-hr cl. Prereq: 200 or 200H or Econ 200 or 200H.

403 Principles of Agribusiness Finance UGRD 5
Financial management of agribusinesses: financial system, time value of money, security valuation, capital budgeting, capital structure, portfolio analysis, financial institutions, futures and options contracts.
Au, Wi, Sp Qtrs. Prereq: 200 or 200H or Econ 200 or 200H and 412 or ActSciMt 211 and 205 or AgEduc 387 or AEE 387 or HCS 260 or AnimSci 260 or Stat 133 or 135 or 145.

410 Farm Business Management UGRD 5
Analysis of resource control and detailed application of economic and management principles to the organization, operation, and administration of farm businesses.
Wi Qtr. 2-2.5-hr cl. Prereq: 401. Not open to students with credit for 510.
### 412 Managerial Records and Analysis
**UGRD 5**
Nature and need for business records, analysis and interpretation of essential records from manager/owner viewpoint; their use in small business practices.
*Au, Wi, Sp Qtrs. 2 2-hr cl. 1.2-hr lab. Prereq: 200 or 200H or Econ 200 or 200H. Not open to students with credit for AcctMIS 211 or 212.*

### 421 Salesmanship in Agriculture
**UGRD 3**
Principles and techniques of selling to agribusiness buyers.
*Au Qtrs. 2 1.5-hr cl. Prereq: 200 or 200H or Econ 200 or 200H; Jr standing. Not open to students with credit for 521.*

### 422 Economics of the Livestock-Meat Industry
**UGRD 3**
Principles and practices involved in marketing livestock and meat; institutions and agencies concerned in pricing and product flows; industry organization and performance, public regulation; future trends.
*Wi Qtr. 2 1.5-hr cl. Prereq: 402. Not open to students with credit for 522. Offered in cooperation with Animal Science.*

### 423 Grain Marketing
**UGRD 3**
Principles and practices involved in grain and feed marketing and the theory of grain pricing; economics of grain marketing.
*Au Qtr. 3 cl. Prereq: 200, 200H or Econ 200 or 200H. Not open to students with credit for 523.*

### 426 Dairy Marketing and Pricing
**UGRD 3**
*Sp Qtr. 2 cl. 1.2-hr lab. Prereq: 200 or 200H or Econ 200 or 200H.*

### 428 Marketing Fruits and Vegetables
**UGRD 3**
Principles involved in the marketing of fresh and processed fruits and vegetables and the institutions and agencies concerned in pricing and product flows from producer to consumer.
*Sp Qtr. 2 1.5-hr cl. Prereq: 200 or 200H or Econ 200 or 200H. Not open to students with credit for 528.*

### 441 Agricultural Cooperatives
**UGRD 3**
Basic principles of cooperatives including types of organizations, legal aspects, governance, membership relations, debt and equity financing, organizational and inter-cooperative problems and distribution of earnings.
*Wi Qtr. 2 1.5-hr cl. Prereq: 401 or equiv. Not open to students with credit for 541.*

### 460 Human Resource Management in Small Businesses
**UGRD 3**
Human resource planning, job analysis, organizational structure, recruitment and selection, training, motivation, leadership, communication, compensation, and evaluating employee performance in context of small businesses.
*Au, Sp Qtrs. 2 1.5-hr cl. Prereq: Jr. standing. Not open to students with credit for 560.*

### 470 Agricultural Law
**UGRD 4**
A study of the legal system and selected areas of law that affect agriculture, including civil liabilities, property law, business law and regulatory law.
*Wi Qtr. 2 2-hr cl. Prereq: 200 or 200H or Econ 200 or 200H. Not open to students with credit for 670.*

### 488 Professional Development in AED Economics
**UGRD 1**
Participation in structured co-curricular programs leading to professional development.
*Su, Au, Wi, Sp Qtrs. Ar: Prereq: 2.0 cumulative pt-hr ratio and permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.*

### 489 Internship in Agribusiness and Applied Economics
**UGRD 3**
Supervised experience with an approved firm or organization; pre-approved outline, oral presentation, and written comprehensive report required.
*Su, Au, Wi, Sp Qtrs. Prereq: 401 or 402 or 403 or 500 or Econ 501 and permission of instructor. Open only to dept majors. This course is graded S/U.*

### 500 Managerial Economics for Agribusiness
**UGRD 5**
Application of economic theory and methods to agribusiness decision making.
*Au, Wi, Sp Qtrs. Prereq: 200 (200H) or Econ 200 (200H); and Math 131 (Wi 03 or thereafter) or 151 or 152.*

### 501 Price Analysis
**UGRD 3**
Forces that influence the behavior of agricultural prices; analytical techniques useful in predicting price changes or the consequences of price changes are introduced.
*Au, Sp Qtrs. 2 1.5-hr cl. Prereq: Basic spreadsheet competency and 500 or Econ 501.02. Math 131 (Wi 03 or thereafter) or 132 or 151, and one of the following: 205 or Stat 133 or 145, AgEcon 387 or AEE 387, HCS 260, AnimSci 260.*

### 502 Quantitative Economic Analysis
**UGRD 5**
Quantitative models and methods and their application to agricultural, environmental, and development economics and agribusiness.
*Wi, Sp Qtrs. Prereq: 205 or AgEcon 387 or AEE 387, HCS 260, AnimSci 260 or Stat 133 or 145 and 500 or Econ 501.02 (may be taken concurrently).*

### 503 Economics of Public Policy Analysis
**UGRD 5**
Understanding of economic tools and concepts for analyzing public policies important to the food industry, agriculture and natural resources.
*Au, Sp Qtrs. 2 1.5-hr cl. 1-hr rec. Prereq: 500 or Econ 501.02 (may be taken concurrently).*

### 531 Environmental and Natural Resources Economics
**UGRD 5**
Economic analysis of the use and management of natural resources and of environmental policy.
*Au, Sp Qtrs. 5 cl. Not open to students with credit for NatRes 531. Cross-listed in Natural Resources.*

### 532 Food Security and Globalization
**UGRD 5**
Examination of the causes of and solutions for food insecurity. Global and local factors that affect access to food are also considered.
*Au Qtr. 2 2-hr cl. Prereq: 200 or Econ 200 or permission of instructor. Not open to students with credit for 434 or IntStds 434, 532. Cross-listed in International Studies.*

### 533 Economic Development Processes in Developing Countries
**UGRD 5**
Study of major Third World problems using principles of development economics. Examines poverty, inequality, unemployment, population growth, resource use and rural development.
*Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 200 or Econ 200. Not open to students with credit for 435 or IntStds 435, 535. Cross-listed in International Studies.*

### 536 Economic Development of Sub-Saharan Africa
**UGRD 5**
Issues shaping economic development and stagnation in contemporary Africa such as population growth, agricultural development, industrialization, trade, structural adjustment and environmental issues.
*Au Qtr. 2 2-hr cl. Prereq: 200 or Econ 200. Not open to students with credit for 436 or IntStds 436, 536. Cross-listed in International Studies.*

### 537 Middle Eastern Economic Development
**UGRD 5**
Economic conditions, problems, interactions and potentials of Middle Eastern economies using principles of economic development and growth models.
*Sp Qtrs. 2 2-hr cl. Prereq: 200 or Econ 200. Not open to students with credit for 437, Econ 537, or IntStds 437, 537. Cross-listed in Economics and International Studies.*

### 538 Latin American Economic Development
**UGRD 5**
Public policy and other factors influencing economic growth in Latin America are examined.
*Sp Qtrs. 2 2-hr cl. Prereq: 200 or Econ 200 or equiv. Not open to students with credit for 438 or IntStds 438, 538. Cross-listed in International Studies.*

### 539 China's Economic Reforms and Globalization
**UGRD 5**
An introductory survey course of economic reforms and globalization in China with emphasis on economic and social transformation, and its integration into the global economy.
*Sp Qtr. 2 2-hr cl. Prereq: 200 or Econ 200 or permission of instructor. Not open to students with credit for 439 or IntStds 439, 539. Cross-listed in International Studies.*

### 540 International Commerce and the World Economy
**UGRD 5**
Application of trade theory and policies to world trade that impacts global business.
*Wi Qtr. Prereq: 200 or 200H or Econ 200 or 200H or permission of instructor. Not open to students with credit for IntStds 540. Cross-listed in International Studies.*

### 553 Consumer and Food Economics
**UGRD 4**
Applications of economic and statistical tools to analyze consumption behavior, demand for food and nutrition, food safety, market structure, and fast food industry.
*Au Qtr. Prereq: 200 or Econ 200 and knowledge of elementary statistics and basic spreadsheet competency or permission of instructor.*

### 565 Global Climate Change: Economic Implications and Opportunities
**UGRD 5**
This course examines the economic implications of climate change and climate change policies for society, including discussion of major state, federal, and international legislation.
*Au Qtr. Prereq: 200 or Econ 200. Not open to students with credit for IntStds 565. Cross-listed with IntStds 565.*

### 597.01 Problems and Policies in World Population, Food, and Environment Contemporary Issues
**UGRD 5**
Problems related to world-wide population increases, food production, and associated environmental stress; policy options for lessening these problems, especially in low-income countries. 597.01H (honors) may be available.
*Su, Au, Wi, Sp Qtrs. 2 1.5-hr cl. 2.4-hr rec. Prereq: Sr standing. Not open to students with credit for IntStds 597.01. Cross-listed in IntStds. GEC contemporary world course.*

### 597.01H Problems and Policies in World Population, Food, and Environment Contemporary Issues
**UGRD 5**
Problems related to world-wide population increases, food production, and associated environmental stress; policy options for lessening these problems, especially in low-income countries.
*Sp Qtr. Prereq: Sr standing. Honors program or permission of department or instructor. Not open to students with credit for IntStds 597.01H. Cross-listed in IntStds. GEC contemporary world course.*

### 601 Strategic Management
**UGRD 5**
A case-based course analyzing applied strategic management problems confronting agribusiness firms. Cases examine the economic complexities comprising the global food system.
*Au, Sp Qtrs. Prereq: 401, 403, and 500 and a second writing course. 503 may be taken concurren.
14 Agricultural, Environmental, and Dev Economics

625 Commodity Futures and Options Markets UGRD 4
Explores the institutional structure, price formation, and hedging uses of commodity futures and options markets.
Wi Qtr. 4 cl. Prereq: 500 or Econ 501.02.

631 Benefit-Cost Analysis UGRD 5
Development and illustration of key benefit-cost concepts and estimation techniques through applications to agricultural, infrastructure, natural resource, and environment projects.
Au Qtr. 2-2 hr d, 1-1 hr d. Prereq: 531 or minimum of 10 hrs of economic principles or permission of instructor.

680 The Economics of Urbanization and Sprawl UGRD 4
Changes in land use and population at the rural-urban fringe. Focus on economic factors driving changes, implications for rural and exurban communities, role of government.
Su, Au, Wi Qtrs. Prereq: Agr 590.01, enrollment in honors program, and permission of honors project supervisor. Repeatable to a maximum of 10 cr hrs. Repeatable as 683H or in combination with 293, 593, 593H, 599H, 693, or 693H. This course is graded S/U.

693.01 Agricultural Management and Finance Individual Studies UGRD 2-3
Planning, conducting, and reporting a special problem in agricultural economics. Prereq: 2.50 cumulative gpa ratio, 401 or permission of instructor. Repeatable to a maximum of 6 cr hrs in any or a combination of decimal subdivisions. This course is graded S/U.

693.02 Agricultural Marketing and Policy Individual UGRD 2-3 Studies
Planning, conducting, and reporting a special problem in agricultural economics. Prereq: 2.50 cumulative gpa ratio, 401 or permission of instructor. Repeatable to a maximum of 6 cr hrs in any or a combination of decimal subdivisions. This course is graded S/U.

693.03 Economic Development Individual Studies UGRD 2-3
Planning, conducting, and reporting a special problem in agricultural economics. Prereq: 2.50 cumulative gpa ratio, 401 or permission of instructor. Repeatable to a maximum of 6 cr hrs in any or a combination of decimal subdivisions. This course is graded S/U.

693.04 Quantitative Methods in Agricultural Economics Individual Studies UGRD 2-3
Planning, conducting, and reporting a special problem in agricultural economics. Prereq: 2.50 cumulative gpa ratio, 401 or permission of instructor. Repeatable to a maximum of 6 cr hrs in any or a combination of decimal subdivisions. This course is graded S/U.

693.05 Resource Economics Individual Studies UGRD 2-3
Planning, conducting, and reporting a special problem in agricultural economics. Prereq: 2.50 cumulative gpa ratio, 401 or permission of instructor. Repeatable to a maximum of 6 cr hrs in any or a combination of decimal subdivisions. This course is graded S/U.

693.06 General Agricultural Economics Individual Studies UGRD 2-3
Planning, conducting, and reporting a special problem in agricultural economics. Prereq: 2.50 cumulative gpa ratio, 401 or permission of instructor. Repeatable to a maximum of 6 cr hrs in any or a combination of decimal subdivisions. This course is graded S/U.

693.07 Consumption and Demand Individual Studies UGRD 2-3
Planning, conducting, and reporting a special problem in agricultural economics. Prereq: 2.50 cumulative gpa ratio, 401 or permission of instructor. Repeatable to a maximum of 6 cr hrs in any or a combination of decimal subdivisions. This course is graded S/U.

693.08 Regional Economics Individual Studies UGRD 2-3
Planning, conducting, and reporting a special problem in agricultural economics. Prereq: 2.50 cumulative gpa ratio, 401 or permission of instructor. Repeatable to a maximum of 6 cr hrs in any or a combination of decimal subdivisions. This course is graded S/U.

694.01 Agricultural Management and Finance Group Studies UGRD 2-5
Selected topics in agricultural economics to acquaint students with current economic conditions Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

694.02 Agricultural Marketing and Policy Group Studies UGRD 2-5
Selected topics in agricultural economics to acquaint students with current economic conditions Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

694.03 Economic Development Group Studies UGRD 2-5
Selected topics in agricultural economics to acquaint students with current economic conditions Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

694.04 Quantitative Methods in Agricultural Economics Group Studies UGRD 2-5
Selected topics in agricultural economics to acquaint students with current economic conditions Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

694.05 Resource Economics Group Studies UGRD 2-5
Selected topics in agricultural economics to acquaint students with current economic conditions Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

694.06 General Agricultural Economics Group Studies UGRD 2-5
Selected topics in agricultural economics to acquaint students with current economic conditions Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

694.07 Consumption and Demand Group Studies UGRD 2-5
Selected topics in agricultural economics to acquaint students with current economic conditions Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

694.08 Regional Economics Group Studies UGRD 2-5
Selected topics in agricultural economics to acquaint students with current economic conditions Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

697 Study at a Foreign Institution UGRD 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 25 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

701 Applied Data Analysis for Agricultural, Environmental, and Development Economics GRAD 4
Practical application of statistical and time series methods to the analysis of economic data in agricultural, environmental, and development economics.
Au Qtr. 2-2 hr cl. Prereq: 500 or Econ 501A or Econ 501.02 and Stat 133 or AEDEcon 205 or grad standing. Not open to students with credit for AgrEcon 622 or AEDEcon 622.

702 Introduction to Computational Economics UGRD 4
Practical application of linear and nonlinear programming methods to management problems in agricultural, environmental, consumer, and financial economics.
Sp Qtr. 2 1.5-hr labs. Prereq: Math 132, AEDEcon 500 or Econ 501.02.

703 Economics of Consumption UGRD 4
Applications of economic theory to consumption analysis, new models of consumer choices, empirical studies of demand/consumption, and consumer issues in the market place.
Au Qtr. 2 2-hr cl. Prereq: Econ 501.02 or Econ 501A or equiv.

711 Production and Consumption in Agricultural, Environmental, and Development Economics GRAD 4
Microeconomic theory principles and their application to the production, consumption, and market exchange of agricultural and environmental goods and services.
Au Qtr. 2 2-hr cl. Prereq: 500 or Econ 501A or Econ 501.02 or grad standing. Required for MS in Agricultural, Environmental, and Development Economics.

712 Finance and Risk Management for Agricultural, Environmental, and Development Economics GRAD 4
Managerial finance and risk management principles and their application to production, consumption, and investment problems in agricultural, environmental, and development economics.
Wi Qtr. 2 2-hr cl. Prereq: 711. Required for MS in Agricultural, Environmental, and Development Economics.

713 Public Policy and Market Regulation in Agricultural, Environmental, and Development Economics GRAD 4
Theories of social welfare, market failure, and public goods and their application to policy and regulation issues in agricultural, environmental, and development economics.
Sp Qtr. 2 2-hr cl. Prereq: 711. Required for MS in Agricultural, Environmental, and Development Economics.

734 Agricultural Trade Policy GRAD 4
International trade theory and its application to trade and policy issues in the food and agricultural sector.
Au Qtr. 2 2-hr cl. Prereq: Econ 501.02 and 502 or equiv.

800 Research Methods in Agricultural, Environmental, and Development Economics GRAD 3
Principles of scientific methods in agricultural, environmental, and development economics.
Au Qtr. 2 1.5-hr cl. Prereq: 711 or 712 or Econ 804.

801 Applied Methods in Agricultural Economics GRAD 4
Modeling
Principles and practice of applied econometrics to models in agriculture. Nonlinear and MLE estimation and hypothesis testing applied to systems of equations and censored models.
Wi Qtr. 2 2-hr cl. Prereq: Econ 741.

802 Advanced Computational Economics GRAD 4
Numerical analysis of stochastic dynamic models in economics and finance, emphasizing formulation, solution, and simulation of dynamic optimization, rational expectations, and asset pricing models.
Au Qtr. 2 1.5-hr cl. 1.15-hr lab. Prereq: Econ 804 and 805 or permission of instructor.

803 Applied Demand Analysis GRAD 4
Application of demand and consumption theory to the estimation of demand relationships and demand systems in agricultural and natural resource markets.
Sp Qtr. 2 2-hr cl. Prereq: 801 and Econ 804.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>806</td>
<td>Economics of Agricultural Production</td>
<td>GRAD 4</td>
<td>A further consideration of economic principles as they apply to production problems in agriculture.</td>
</tr>
<tr>
<td>807</td>
<td>Economic Analysis for Collective Choice</td>
<td>GRAD 5</td>
<td>Develops and extends benefit cost, public choice and new institutional economics for consideration of efficiency, basic needs, income distribution and sustainability in collective choice issues.</td>
</tr>
<tr>
<td>810</td>
<td>Agricultural Firm Management</td>
<td>GRAD 3</td>
<td>Examination of the operating and strategy problems confronting the managers of farm and nonfarm agribusiness firms, with emphasis on applying and integrating management concepts.</td>
</tr>
<tr>
<td>816</td>
<td>Financial Markets and Rural Development</td>
<td>GRAD 4</td>
<td>Course provides conceptual framework for formulation and evaluation of financial policies in developing countries (for rural and microenterprise activities). Emphasizes role of the state in finance.</td>
</tr>
<tr>
<td>820</td>
<td>Marketing Economics in Agriculture</td>
<td>GRAD 3</td>
<td>A critical study of contemporary problems in agricultural marketing in the U.S. and world economics with emphasis on the theoretical and policy implications.</td>
</tr>
<tr>
<td>830</td>
<td>Agricultural, Environmental, and Development Policy</td>
<td>GRAD 4</td>
<td>Application of welfare economics and institutional economics to problems and policies in agricultural, environmental, and development economics.</td>
</tr>
<tr>
<td>831</td>
<td>Resource Economics</td>
<td>GRAD 3</td>
<td>Application of economic theory and decision-making frameworks to current issues of resource use, allocation, and control.</td>
</tr>
<tr>
<td>832</td>
<td>Seminar in Economic Development of Foreign Agriculture</td>
<td>GRAD 3</td>
<td>Characteristic problems of developing countries, identification and analysis of limiting factors in underdevelopment, and techniques for stimulating economic development through growth in agriculture.</td>
</tr>
<tr>
<td>833</td>
<td>Economic Development Theory and Policy</td>
<td>GRAD 4</td>
<td>Applied development economics course with emphasis on policy formulation and evaluation; shows the power of economic theory for analysis of policies, markets and institutions.</td>
</tr>
<tr>
<td>834</td>
<td>Political Economy of Trade, Development and Agricultural Policies</td>
<td>GRAD 4</td>
<td>Analysis of policy making process of trade, development, and agricultural support policies in the food sector and its impact on economic welfare. Examine rent-seeking behavior.</td>
</tr>
<tr>
<td>840</td>
<td>Regional Economic Growth: Theory and Measurement</td>
<td>GRAD 4</td>
<td>Theories of economic growth and development at the sub-national level. Problems of rural regions are highlighted.</td>
</tr>
<tr>
<td>891</td>
<td>Field Survey in Agricultural, Environmental, and Development Economics</td>
<td>GRAD 1</td>
<td>Seminar for PhD students to learn about the various fields in agricultural, environmental, and development economics.</td>
</tr>
<tr>
<td>899.01</td>
<td>Agricultural Economics PhD Seminar</td>
<td>GRAD 1</td>
<td>Seminar forum for PhD students to present and discuss their PhD dissertation research.</td>
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<tr>
<td>899.02</td>
<td>Environmental Economics PhD Seminar</td>
<td>GRAD 1</td>
<td>Seminar forum for PhD students to present and discuss their PhD dissertation research.</td>
</tr>
<tr>
<td>899.03</td>
<td>Development Economics PhD Seminar</td>
<td>GRAD 1</td>
<td>Seminar forum for PhD students to present and discuss their PhD dissertation research. Satisfactory completion of the ADEEcon Qualifier Exam and permission of instructor. REQUIRED FOR PhD IN ADEECON. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>899.04</td>
<td>Quantitative Methods PhD Seminar</td>
<td>GRAD 1</td>
<td>Seminar forum for PhD students to present and discuss their PhD dissertation research. Satisfactory completion of the ADEEcon Qualifier Exam and permission of instructor. REQUIRED FOR PhD IN ADEECON. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>899.05</td>
<td>Agribusiness PhD Seminar</td>
<td>GRAD 1</td>
<td>Seminar forum for PhD students to present and discuss their PhD dissertation research. Satisfactory completion of the ADEEcon Qualifier Exam and permission of instructor. REQUIRED FOR PhD IN ADEECON. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>899.06</td>
<td>Regional Economics PhD Seminar</td>
<td>GRAD 1</td>
<td>Seminar forum for PhD students to present and discuss their PhD dissertation research. Satisfactory completion of the ADEEcon Qualifier Exam and permission of instructor. REQUIRED FOR PhD IN ADEECON. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>809.01</td>
<td>Agricultural Economics PhD Seminar</td>
<td>GRAD 1</td>
<td>Seminar forum for PhD students to present and discuss their PhD dissertation research. Satisfactory completion of the ADEEcon Qualifier Exam and permission of instructor. REQUIRED FOR PhD IN ADEECON. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>809.02</td>
<td>Environmental Economics PhD Seminar</td>
<td>GRAD 1</td>
<td>Seminar forum for PhD students to present and discuss their PhD dissertation research. Satisfactory completion of the ADEEcon Qualifier Exam and permission of instructor. REQUIRED FOR PhD IN ADEECON. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>809.03</td>
<td>Development Economics PhD Seminar</td>
<td>GRAD 1</td>
<td>Seminar forum for PhD students to present and discuss their PhD dissertation research. Satisfactory completion of the ADEEcon Qualifier Exam and permission of instructor. REQUIRED FOR PhD IN ADEECON. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>809.04</td>
<td>Quantitative Methods PhD Seminar</td>
<td>GRAD 1</td>
<td>Seminar forum for PhD students to present and discuss their PhD dissertation research. Satisfactory completion of the ADEEcon Qualifier Exam and permission of instructor. REQUIRED FOR PhD IN ADEECON. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>809.05</td>
<td>Agribusiness PhD Seminar</td>
<td>GRAD 1</td>
<td>Seminar forum for PhD students to present and discuss their PhD dissertation research. Satisfactory completion of the ADEEcon Qualifier Exam and permission of instructor. REQUIRED FOR PhD IN ADEECON. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>809.06</td>
<td>Regional Economics PhD Seminar</td>
<td>GRAD 1</td>
<td>Seminar forum for PhD students to present and discuss their PhD dissertation research. Satisfactory completion of the ADEEcon Qualifier Exam and permission of instructor. REQUIRED FOR PhD IN ADEECON. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>902</td>
<td>Computable General Equilibrium Analysis</td>
<td>GRAD 4</td>
<td>Application of computational general equilibrium methods to analyze allocative and distributional effects of economic policies.</td>
</tr>
<tr>
<td>993.01</td>
<td>Agricultural Management and Finance</td>
<td>GRAD 2-5</td>
<td>Planning, conducting, and reporting a special problem in agricultural, environmental, and development economics fitting the needs of the student, under the guidance of an instructor.</td>
</tr>
<tr>
<td>993.02</td>
<td>Agricultural Marketing and Policy Individual Studies</td>
<td>GRAD 2-5</td>
<td>Planning, conducting, and reporting a special problem in agricultural, environmental, and development economics fitting the needs of the student, under the guidance of an instructor.</td>
</tr>
<tr>
<td>993.03</td>
<td>Economic Development Individual Studies</td>
<td>GRAD 2-5</td>
<td>Planning, conducting, and reporting a special problem in agricultural, environmental, and development economics fitting the needs of the student, under the guidance of an instructor.</td>
</tr>
<tr>
<td>993.04</td>
<td>Quantitative Methods in Agricultural Economics</td>
<td>GRAD 2-5</td>
<td>Planning, conducting, and reporting a special problem in agricultural, environmental, and development economics fitting the needs of the student, under the guidance of an instructor.</td>
</tr>
<tr>
<td>993.05</td>
<td>Resource Economics Individual Studies</td>
<td>GRAD 2-5</td>
<td>Planning, conducting, and reporting a special problem in agricultural, environmental, and development economics fitting the needs of the student, under the guidance of an instructor.</td>
</tr>
<tr>
<td>993.06</td>
<td>General Agricultural Economics Individual Studies</td>
<td>GRAD 2-5</td>
<td>Planning, conducting, and reporting a special problem in agricultural, environmental, and development economics fitting the needs of the student, under the guidance of an instructor.</td>
</tr>
<tr>
<td>999</td>
<td>Research in Agricultural, Environmental, and Development Economics</td>
<td>GRAD 1-18</td>
<td>For thesis or dissertation purposes only.</td>
</tr>
</tbody>
</table>
16  Air Force Aerospace Studies

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>Introduction to Air Force ROTC and Air Force Heritage</td>
<td>UGRD 1</td>
<td>Introduction to the Air Force including Air Force organization, benefits, military customs and courtesies, dress and appearance and communication skills. Au Qtr. 1 cl, 2 lab hrs.</td>
</tr>
<tr>
<td>102</td>
<td>Foundations of Officership</td>
<td>UGRD 1</td>
<td>Exploration of Air Force officer as a profession, core values and the oath of office. Wi Qtr. 1 cl, 2 lab hrs.</td>
</tr>
<tr>
<td>103</td>
<td>Air Force Team Building and Communications Skills</td>
<td>UGRD 1</td>
<td>Practical applications of interpersonal communications and team building skills. Sp Qtr. 1 cl, 2 lab hrs.</td>
</tr>
<tr>
<td>201</td>
<td>The Evolution of USAF Air and Space Power</td>
<td>UGRD 1</td>
<td>Issues of leadership, technological advances, and air power theory. Au Qtr. 1 cl, 2 lab hrs. from Inception to World War II</td>
</tr>
<tr>
<td>202</td>
<td>The Evolution of USAF Air and Space Power</td>
<td>UGRD 1</td>
<td>The role of US air power from 1947 through the initial Cold War years and the Vietnam War. Wi Qtr. 1 cl, 2 lab hrs. from 1945 to 1989</td>
</tr>
<tr>
<td>301</td>
<td>Air Force Leadership Authority and Responsibility</td>
<td>UGRD 3</td>
<td>An overview of AF leadership responsibilities, problem solving, management functions and principles, team building techniques, motivation methods and conflict management. Au Qtr. 1 cl, 2 lab hrs.</td>
</tr>
<tr>
<td>302</td>
<td>Leadership and Accountability</td>
<td>UGRD 3</td>
<td>Leadership concepts and case studies, including professional/unprofessional relationships, the influence of power, effective supervision and leadership accountability. Wi Qtr. 3 cl, 2 lab hrs. Prereq: 301 or permission of instructor.</td>
</tr>
<tr>
<td>303</td>
<td>Officer Development and Professionalism</td>
<td>UGRD 3</td>
<td>Officer as a professional, topics include corrective supervision, counseling, leadership, accountability, core values, and military ethics. Sp Qtr. 1 cl, 2 lab hrs. Prereq: 302 or permission of instructor.</td>
</tr>
<tr>
<td>401</td>
<td>National Security and the Strategy Making Process</td>
<td>UGRD 3</td>
<td>The roles of the Executive branch, Congress, and military in the national security process; exploration of the organization and the role of the Air Force. Au Qtr. 2 cl, 2 lab hrs. Prereq: 303 or permission of instructor.</td>
</tr>
<tr>
<td>402</td>
<td>Regional Area Studies</td>
<td>UGRD 3</td>
<td>A study of US interests in regions around the world. Wi Qtr. 3 cl, 2 lab hrs. Prereq: 401 or permission of instructor.</td>
</tr>
<tr>
<td>403</td>
<td>Preparation for Active Duty</td>
<td>UGRD 3</td>
<td>Preparation for active duty as an Air Force officer. Sp Qtr. 3 cl, 2 lab hrs. Prereq: 402 or permission of instructor.</td>
</tr>
</tbody>
</table>

### Allied Medicine

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>Allied Medical Professions Survey</td>
<td>UGRD 1</td>
<td>Allied Medical Professions Survey.</td>
</tr>
<tr>
<td>100H</td>
<td>Allied Medical Professions</td>
<td>UGRD 1</td>
<td>Allied Medical Professions. Prereq: Honors program or permission of department or instructor.</td>
</tr>
<tr>
<td>102</td>
<td>Introduction to Health Professions</td>
<td>UGRD 2</td>
<td>An introduction to the allied health professions both graduate and undergraduate that contribute to the delivery of health care in America. Su, Wi Qtrs. 1-2 hr. cl, enrollment in health sciences</td>
</tr>
<tr>
<td>200</td>
<td>CPR for the Health Care Provider</td>
<td>UGRD 2</td>
<td>Knowledge, competencies, issues and concerns of health care providers regarding basic life support/cardiopulmonary resuscitation. Wi Qtr. 1 cl, 1 hr. cl. Prereq: Admission to the School of Allied Medical Professions or permission of instructor. Completion of course leads to American Heart Association certification Basic Life Support/Health Care Provider.</td>
</tr>
<tr>
<td>307</td>
<td>The Evolving Art and Science of Medicine</td>
<td>UGRD 5</td>
<td>An analysis of the concepts of health and healing, coupled with an examination of historical developments that have impacted the art and science of medicine. Au Qtr. 2 2.5-hr cl. GEC arts and hums cultures and ideas course.</td>
</tr>
</tbody>
</table>
604 Case Studies in Health Sciences UGRD 4
Experience in evaluating and analyzing case studies in health care and health services, emphasizing critical thinking, problem solving, and decision-making approaches and leadership.
Wi Qtr. 2 3-hr cl. 2 hr practice. Prereq: Sr level in Health Sciences or permission of instructor.

607 Role of Integrative Medicine in Society UGRD 5
A research-based analysis of the intersection between evidence-based medicine and complementary and alternative approaches to wellness, as defined by the National Institutes of Health.
Sp Qtr. 2 2.5-hr cl. Not open to students with credit for 407.

622 Human Resource Management for Allied Health Professionals UGRD 3
Emphasis on human resource development in health care institutions and related settings.
Wi Qtr. 3 cl. Prereq: 630 or permission of instructor. Not open to students with credit for MedDiet 622. Cross-listed in Medical Dietetics.

630 Management Principles for Health Professionals UGRD 3
An analysis of the management process and its application to the health care setting.
Au, Sp Qtr. 3 cl. Prereq: Enrollment in AMP or permission of instructor.

632 Diabetes Care and Management UGRD 2
Review of pathophysiology associated with diabetes; pharmacological and non-pharmacological treatments; pattern management; monitoring; and control to prevent secondary complications.
Su Qtr. 4-hr cl first five weeks of summer quarter. Prereq: General chemistry, general biology, general physiology. Clinical hours in specialty area requested but not required.

635 Allied Health Professional Clinical Interviewing UGRD 3
Focus on prevention, health promotion and wellness for older adults from the perspective of the allied health care professional.
Sp Qtr. 2 1.5-hr cl. Prereq: Sr standing in Health Sciences or permission of instructor.

640 Health Promotion and Disease Prevention UGRD 4
An introduction to health promotion and disease prevention with emphasis on environment, behavior and social science theory and application.
Au Qtr. 2 1.5-hr cl. 2 hr practice. Prereq: Jr standing in Health Sciences or permission of instructor.

641 Medical Communication with Latinos UGRD 3
Terminology/skills for communication with Spanish-speaking persons in health care context. Outreach to Latino Community (service emphasis). Familiarity with Spanish language translation/interpretation.
Au, Wi, Sp Qtrs. 1 3-hr cl. Prereq: Jr, sr, grad, or prof standing and proven proficiency in the Spanish language or permission of instructor. Students are required to develop and implement an individual learning contract that provides them with practice in the areas of interpretation for patients, translation of patient education documents in a culturally sensitive manner, development of educational programming, researching strategies for advocacy, etc.

642 Evidence-Based Practice in the Health Sciences: Practical Applications UGRD 4
Provides an overview of health issues and disparities faced by racial and ethnic minorities and the implications for public health practice.
Sp Qtr. Prereq: 640, or permission of instructor.

643 Health Promotion in Practice UGRD 4
Through grant-writing exercises, students will explore the research and practice of health promotion, including community organization, assessment & evaluation, capacity-building, and health advocacy.
Sp Qtr. Prereq: 642 or permission of instructor.

644 Interdisciplinary Approach to Policy and Community Action in the Health Sciences UGRD 3
Review of the principles of community policy in relation to the health care and professionals. Prereq: 672 or permission of instructor.

645 Health Risk Assessment: Theory and Practice UGRD 3
Study and application of health risk assessment theory, methods, and tools as a component of health promotion and disease prevention incorporating wellness and prevention strategies.
Wi Qtr. 2 1.5-hr cl. Prereq: 640 or permission of instructor.

650 Health Care Information Systems UGRD 3
Survey of patient, administrative and financial information systems in health care, and the technologies and management practices to support them.
Sp Qtr. 2 2-hr cl. Cross-listed in HIMS.

655 Individual Differences in Patient/Client Populations UGRD 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.
Wi Qtr. 1 3-hr cl. Prereq: 640, 643 and or level in Health Sciences/Health and Wellness Program or permission of instructor.

660 Healthcare Financial Management UGRD 3
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.
Wi Qtr. 2 1-hr cl, 1-2 hr lab. Prereq: Enrollment in AMP or grad standing in AMP or permission of instructor. Cross-listed in HIMIS.

662 Introduction to Managed Health Care UGRD 3
Introduction to the evolution, structure and function of managed care organizations with analysis of interfaces among payers, providers and purchasers of health care.
Au Qtr. 1 2-hr cl, 1-2 hr lab. Prereq: 591 or sr level in AMP and permission of instructor.

663 Introduction to the Long Term Care Continuum UGRD 3
Introduction to the types of services, regulatory requirements and financing of long term care alternatives in the US healthcare delivery system.
Wi Qtr. 2 1.5-hr cl. Prereq: 591 or sr standing in AMP and permission of instructor.

664 Care of the Older Adult: Aging in Place and Community Care UGRD 3
Explores continuum of health and community care for older adults examining issues of access, financing, housing, services and challenges to providing quality options.
Wi Qtr. 2 1.5-hr cl. Prereq: Enrollment in the School of Allied Medical Professions or permission of instructor.

665 Understanding the Aging Process UGRD 3
Study of physical and mental health components of normal aging with emphasis on critical components of successful aging, presented as basis for delivery of health services.
Su, Au, Wi, Sp Qtrs. 2 1.5-hr cl.

667 Aging and Public Policy UGRD 3
Provides a framework to examine major policy issues of an aging society, overview of the legislative process, and a focus on citizen participation in the policy process.
Sp Qtr. 1 3-hr cl. Prereq: Jr level in Health Sciences/Geriatrics and Gerontology or by permission of instructor.

668 Prevention and Wellness in Aging for Health Professionals UGRD 3
Focus on prevention, health promotion and wellness for older adults from the perspective of the allied health care professional.
Sp Qtr. 2 1.5-hr cl. Prereq: Enrollment in the School of Allied Medical Professions or permission of instructor.

670 Teamwork and Leadership in Health and Wellness UGRD 4
Students will gain a better understanding of leadership and team-building through experience in health-related projects.
Wi Qtr. 2 2-hr cl. Prereq: Sr standing in Health Sciences Program or permission of instructor.

672 Application of Ethical Decision Making in Health Care UGRD 3
Examination of ethical theories, bioethical principles, personal ethics, and ethical decision making using a six-step model for application in allied health professions.
Au, Wi Qtrs. 2 1.5-hr cl. Prereq: Sr standing in the Health Sciences Program and Allied Med 591 or permission of instructor.

675 Contemporary Topics in Health and Society UGRD 3
This course offers the opportunity to delve into the current issues and factors that are influencing and shaping both society and health systems.
Prereq: 672 or permission of instructor.

680.01 Research Design in Biomedical Sciences UGRD 3
Concepts related to initiating and conducting research; experimental design; use of computer graphics and statistics; and analysis of research reports. 680.01H (honors) may be available.
Au, Wi Qtrs. 2 1.5-hr cl.

680.01H Research Design in Biomedical Sciences UGRD 3
Concepts related to initiating and conducting research; experimental design; use of computer graphics and statistics; and analysis of research reports. 680.01H (honors) may be available.
^ Au, Wi Qtrs. 2 1.5-hr cl. Prereq: Honors program or permission of department or instructor.

693 Individual Studies UGRD 1-5
Guided study of selected topics. 693H (honors) may be available.
Su, Au, Wi, Sp Qtrs. 1-5 cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

693H Individual Studies UGRD 1-5
Individual Studies.
Su, Au, Wi, Sp Qtrs. Prereq: Honors program and permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

694 Group Studies UGRD 1-5
Supervised group studies of special topics within the various professions of the allied health field.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 or hrs.

695 Senior Seminar in Geriatrics and Gerontology UGRD 3
Explanation, investigation, analysis of current geriatric/gerontology issues and trends focusing on integrating a variety of perspectives, application of concepts and creative problem solving. Prereq: Sr, 1 3-hr cl. Prereq: 680 and or level in Health Sciences/Geriatrics and Gerontology or permission of instructor.
# Allied Medicine

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credit</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>696</td>
<td>Seminar in Program Assessment, Development and Evaluation for Health Sciences</td>
<td>UGRD 3</td>
<td>Review of needs assessment theory, concepts of economic analysis, quality of life and clinical outcomes of various health care services, and creation of a development and evaluation plan. Sp Qtr. 2 1.5-hr cl. Prereq: Jr standing in Health Sciences Program or permission of instructor.</td>
</tr>
<tr>
<td>700.01</td>
<td>Interprofessional Care</td>
<td>GRAD 3</td>
<td>Treatment of the whole person through the analysis of the interrelated problems of actual patients/clients. Repeatable to a maximum of 6 cr hrs. Wi Qtr. Limited to students in allied medical professions, education, law, medicine, nursing, social work, and theology (Columbus seminaries). Repeatable to a maximum of 6 cr hrs.</td>
</tr>
<tr>
<td>700.03</td>
<td>Ethical Issues</td>
<td>GRAD 3</td>
<td>Ethical issues of concern to the professions and arising out of advanced technology: euthanasia, mind control, malpractice, social responsibility of the professions. Au Qtr. Limited to students in allied medical professions, education, law, medicine, nursing, social work, and theology (Columbus seminaries). Repeatable to a maximum of 6 cr hrs.</td>
</tr>
<tr>
<td>700.04</td>
<td>Interprofessional Seminar in Clinical Practice</td>
<td>UGRD 3</td>
<td>Interprofessional teamwork in clinical settings. Wi Qtr. Grad. Prereq: Permission of instructor. Limited to students in allied medical professions, education, law, medicine, nursing, social work, and theology (Columbus seminaries). Repeatable to a maximum of 6 cr hrs.</td>
</tr>
<tr>
<td>710</td>
<td>Health Literacy</td>
<td>GRAD 3</td>
<td>Examines the issues and challenges of low health literacy, including research; development and testing of information in plain language; health communication techniques; and organizational approaches to meet these challenges. Au Qtr. Not open to students with credit for MedColl 710, Nursing 710, Pharmacy 709 or ArtsSc 709. Cross-listed with MedColl 710 and Nursing 710, Pharmacy 709 and ArtsSc 709.</td>
</tr>
<tr>
<td>717.02</td>
<td>Interdisciplinary Perspectives on Autism</td>
<td>UGRD 3</td>
<td>Focus on interdisciplinary topics in mental retardation and developmental disabilities. Critical examination of the latest information on biomedical, psycho-social, educational, communication and language, family and sensory issues of autism spectrum disorders. Sp Qtr. 1.5-hr cl. Prereq: Permission of instructor. Not open to students with credit in 717.02 in any of the cross-listed areas. Cross-listed in Education: Physical Activity and Educational Services, Human Development and Family Science, Human Nutrition, Nursing, Psychology, Social Work, and Speech and Hearing Science. Limit of 20 students.</td>
</tr>
<tr>
<td>719</td>
<td>Early Intervention Interdisciplinary Team Dynamics</td>
<td>GRAD 3</td>
<td>Interdisciplinary team-taught course with a focus on early intervention/early childhood education services for children birth to three and their families. Au Qtr. 2.5-hr cl. Prereq: Permission of instructor. Not open to students with credit for EduPAES 719, HDF5 719, Nursing 719, or SpHrng 719. Cross-listed in Education: Physical Activity and Educational Services, Human Development and Family Science, Human Nutrition, Nursing, Psychology, Social Work, and Speech and Hearing Science.</td>
</tr>
<tr>
<td>720</td>
<td>Aging and Design</td>
<td>UGRD 3</td>
<td>Analysis and development of designs for products and environment related to residential spaces for older adults based on environmental adjustment theories. Au Qtr. 1.5-hr cl. Prereq: Grad standing or permission of instructor. Not open to students with credit for TxdClo 720 or CSTxCl 720. Cross-listed in Consumer Sciences: Textiles and Clothing.</td>
</tr>
<tr>
<td>721</td>
<td>Practicum in Home Modifications and Universal Design</td>
<td>UGRD 3</td>
<td>Provides service-learning experience for students to learn about universally designed home modifications. Students help conduct workshops and home assessments. Sp Qtr. 1.5-hr cl. 6 hr lab. Prereq: 720 or FmReSt 720 or permission of instructor. Cross-listed with FmReSt 694A Sp 2003.</td>
</tr>
<tr>
<td>730</td>
<td>Managerial Leadership in Allied Health</td>
<td>GRAD 3</td>
<td>Application of managerial leadership principles for the development and administration of allied health departments in the health care system. Au Qtr. 1.5-hr cl. Prereq: Admission to AMP grad program or permission of instructor.</td>
</tr>
<tr>
<td>733</td>
<td>Teaching in the Allied Health Professions</td>
<td>GRAD 3</td>
<td>Principles and practice of teaching in the allied health professions; focuses on various teaching roles and strategies of allied health professionals in academic and clinical settings. Sp Qtr. 1.5-hr cl. Prereq: Admission to the AMP graduate program or permission of instructor.</td>
</tr>
<tr>
<td>770</td>
<td>Service Learning in Global Health</td>
<td>GRAD 3</td>
<td>Provides a service learning opportunity focusing on active student participation in an organized international health care experience. Wi Qtr. Arr. Prereq: Instructor permission only. Repeatable to a maximum of 15 cr hrs. Service Learning course. Application is required. Additional course fees and expenses must be paid by the student.</td>
</tr>
<tr>
<td>780</td>
<td>Introduction to High Risk Neonates and Neonatal Care Environments</td>
<td>GRAD 3</td>
<td>Overview of key issues related to high risk neonates including demographics, vulnerabilities, care approaches, intensive care environments, equipment, and personnel. Au Qtr. 1.5-hr cl. Prereq: Grad standing or permission of instructor.</td>
</tr>
<tr>
<td>790</td>
<td>Introduction to Gerontology</td>
<td>GRAD 3</td>
<td>Introduction to impact of physiological, psychological, and socio-economic conditions associated with aging to provide foundation in gerontology. Au Qtr. 1.5-hr cl. Not open to students with credit for Dent 792.17. Open to sr level students will permission of instructor. Cross-listed in Social Work. Core course required for Graduate Specialization in Aging.</td>
</tr>
<tr>
<td>791</td>
<td>Case Studies in Clinical Gerontology</td>
<td>GRAD 3</td>
<td>Interdisciplinary course for graduate and professional students using a team approach and case studies to work with older adults. Wi Qtr. 1.5-hr cl. Prereq: Dent 792.17 or permission of instructor.</td>
</tr>
<tr>
<td>795</td>
<td>Seminar</td>
<td>GRAD 1-3</td>
<td>Investigation of current topics of interest to allied health practitioners. Au, Wi, Sp Qtrs. 1.5-hr cl. Prereq: Instructor. Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>796.01</td>
<td>Health and Rehabilitation Science I</td>
<td>GRAD 3</td>
<td>An introductory graduate course designed to create integrated health and rehabilitation science researchers and educators. Prereq: Admission into the Health and Rehabilitation PhD Program or permission of instructor.</td>
</tr>
<tr>
<td>796.02</td>
<td>Health and Rehabilitation Science II</td>
<td>GRAD 3</td>
<td>An introductory graduate course designed to create integrated health and rehabilitation science researchers and educators. Prereq: 796.01 and admission into the Health and Rehabilitation PhD Program; or permission of instructor.</td>
</tr>
<tr>
<td>796.03</td>
<td>Health and Rehabilitation Science III</td>
<td>GRAD 3</td>
<td>An introductory graduate course designed to create integrated health and rehabilitation science researchers and educators. Prereq: 796.02 and admission into the Health and Rehabilitation PhD Program; or permission of instructor.</td>
</tr>
<tr>
<td>802</td>
<td>New and Emerging Assistive Technologies for Individuals with Disabilities</td>
<td>GRAD 3</td>
<td>Interdisciplinary course covering applications of technology to meet the functional needs of individuals in mobility, manipulation, communication, and cognition and learning. Sp Qtr. Lec/lab. Not open to students with credit for EduPAES 826. Cross-listed with EduPAES 826.</td>
</tr>
<tr>
<td>830</td>
<td>Leadership and Policy in Allied Health</td>
<td>GRAD 3</td>
<td>Students develop leadership skills and learn to explain and discuss the laws and policies that influence allied health professions. Wi Qtr. 1.5-hr cl. Prereq: Admission to the Health and Rehabilitation Sciences PhD program or permission of instructor.</td>
</tr>
<tr>
<td>850</td>
<td>Issues in Allied Health</td>
<td>GRAD 3</td>
<td>Discussion and critical examination of current issues in the allied health field and their impact on the health professions. Wi Qtr. 1.5-hr cl.</td>
</tr>
<tr>
<td>870</td>
<td>Fundamentals of Curriculum in Allied Health</td>
<td>GRAD 3</td>
<td>Education Study of curriculum antecedents and issues in allied health: an orientation for health professionals which deals with the major curriculum forces which have, and are, shaping allied health education. Su Qtr. 1.5-hr cl. Prereq: Admission to AMP graduate program or permission of instructor.</td>
</tr>
<tr>
<td>885.01</td>
<td>PhD Research Practicum</td>
<td>GRAD 2-5</td>
<td>Students gain practical, advanced skills in allied health research through structured research experiences. May focus on research techniques, methodologies, instrumentation, or data analysis. Prereq: Admission to the Health and Rehabilitation Sciences PhD program or permission of instructor. Repeatable to maximum 18 hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>885.02</td>
<td>PhD Teaching Practicum</td>
<td>GRAD 2-5</td>
<td>Students gain practical, advanced skills in allied health teaching through structured mentoring experiences. Prereq: Admission to the Health and Rehabilitation Sciences PhD program or permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>889.01</td>
<td>Practicum: Educational</td>
<td>GRAD 2-5</td>
<td>Practical experience in an educational setting within the allied health fields. Prereq: 3 cr hrs in educational methodology. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>889.02</td>
<td>Practicum: Administration</td>
<td>GRAD 2-5</td>
<td>Practical experience in an administrative setting within the allied health fields. Au Qtr. Prereq: HHSA 615 or equiv and written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>889.03</td>
<td>Practicum: Research</td>
<td>GRAD 2-5</td>
<td>Practical experience in a research setting within the allied health fields. Prereq: 3 cr hrs in research design or permission of instructor. Repeatable to a maximum 10 cr hrs. This course is graded S/U.</td>
</tr>
</tbody>
</table>
Advanced Topics GRAD 3

Students gain knowledge and skills in advanced topics related to the school faculty's health and rehabilitation research. Topics and faculty vary by quarter.

892 Evidence Based Practice GRAD 3

Students learn to apply evidenced based practice, identify the most valid and relevant research reports, analyze research using specificity and sensitivity measures, examine effect sizes.

Sp Qtr. 1 hr d. Prereq: Admission to the Health and Rehabilitation Sciences PhD program or permission of instructor. Repeatable to a maximum of 15 cr hrs.

895.01 PhD Research Seminar GRAD 1-2

Students develop skills in analyzing, discussing, and synthesizing health and rehabilitation research. Students present their own scholarship to other graduate students and faculty.

Su, Au, Wi, Sp Qtrs. 1 hr d. Prereq: Admission to the Health and Rehabilitation Sciences PhD program or permission of instructor. Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

895.02 PhD Teaching Seminar GRAD 1-2

Prepares students to effectively develop learning objectives, plan instruction and learning activities, and develop/revise student evaluation skills in allied health and rehabilitation professional programs.

Au Qtr. 1-2 hr d. Prereq: Admission to the Health and Rehabilitation Sciences PhD program or permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

999 Research GRAD 1-15

Research for thesis or dissertation.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

American Sign Language

101 Elementary American Sign Language I UGRD 5

Introduction to American Sign Language (ASL) focuses on development of receptive (listening) and expressive (speaking) skills, American deaf culture and history. Instruction primarily in ASL. Not open to native users or those with EM credit, or to students with 2 or more years of study of this language in high school. Not open to students with credit for English 101 or EduTL 101. GEC for lang course.

102 Elementary American Sign Language II UGRD 5

Further development of ASL skills. Focus on talking about self and others. Continued exploration of American deaf culture and history. Instruction primarily in ASL.

Prereq: 101 or English 101 or EduTL 101. Not open to students with credit for English 102 or EduTL 102, or those with EM credit. GEC for lang course.

103 Intermediate American Sign Language I UGRD 5

Advanced development of ASL skills. Continued talking about self and others with extended narratives, exploration of American deaf culture and history. Instruction primarily in ASL.

Prereq: 102 or English 102 or EduTL 102. Not open to native users or students with credit for EduTL 113 or SpHrng 103 or EM credit for ASL 103 or equivalent. GEC for lang course.

104 Intermediate American Sign Language II UGRD 5

More advanced development of ASL skills with a focus on storytelling. ASL literature explored. Further exploration of American deaf culture and history.

Prereq: 103 or EduTL 13 or SpHrng 103 or EM credit. Not open to native users or students with credit for EduTL 114 or SpHrng 104 or those with EM credit for ASL 104 or equivalent. GEC for lang course.

Anatomy

199.01 Basic Human Anatomy UGRD 5

The basics of human anatomy supplemented by computer-assisted instruction and demonstrations of human material.

Au, Wi, Sp Qtrs. Prereq: Health Sciences students in CED and ASC. Not open to students with credit for 200.

199.03 Basic Human Anatomy UGRD 5

The basics of human anatomy supplemented by computer-assisted instruction and demonstrations of human material.

Au, Wi, Sp Qtrs. Prereq: Biology 101 or 113; enrollment in pre-nursing, gpa 2.75. Not open to students with credit for 200.

199.04 Basic Human Anatomy UGRD 5

The basics of human anatomy supplemented by computer-assisted instruction and demonstrations of human material. Emphasis directed toward specialty.

Au, Wi, Sp Qtrs. Prereq: Enrollment in pre-AMP, AMP, pre-Opt, ExSci, Pre-Pharm, Pre-Dent. Not open to students with credit for 200.

199.05 Basic Human Anatomy UGRD 5

The basics of human anatomy supplemented by computer-assisted instruction and demonstrations of human material.

Wi, Sp Qtrs. Prereq: Enrollment in DHY only. Not open to students with credit for 200.

200 Introductory Anatomy UGRD 6

Fundamental principles of human anatomy, supplemented by demonstrations of human material.

220 Introductory Human Anatomy for Engineers UGRD 2

Introduction to human anatomy for engineering students using a systems approach through lectures, laboratory with prostected cadavers, and computer software.

Sp Qtr. 1 2-hr lect and 1 2-hr lab. Prereq: Biology 113 or 115 or equiv. Enrollment limited to undergraduate engineering students or permission of instructor.

400 Intermediate Human Anatomy UGRD 3

To acquaint pre-professional students with a basic knowledge of Human Anatomy via sectional material.

Prereq: GenBiol 113-114 or 115H-116H or GenChem 121-122-123. The students must have these courses prior to considering Anatomy 400. Sectional Anatomy used in course.

600 Advanced Neuromuscular Anatomy GRAD 5

Neuromuscular anatomy of the human body through an in-depth dissection experience.

Su Qtr. 2 hr cl, 2 3-hr labs. Prereq: 200 or equiv. permission of instructor.

601 Human Anatomy for Dental Students MED 7

Basic principles of embryology, anatomy, histology and neuroanatomy of the human body.

Au Qtr. 3 cl, 3 3-hr labs. Prereq: Dent 1st yr standing.

602 Human Anatomy for Dental Students MED 4

A continuation of 601.

Wi Qtr. 5 cl, 2-hr lab. Prereq: 601.

603 Human Anatomy for Dental Students MED 7

A continuation of 602.

Sp Qtr. 3 cl, 3 3-hr labs. Prereq: 602.

693 Individual Studies in Anatomy GRAD 2-18

Designed to enable the student to pursue a minor investigation in some anatomical field of choice.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs. 1 month, offered all months. This course is graded S/U.

700 Human Histology GRAD 6

A microscopic study of cells, tissues, and organs with particular emphasis on human; consideration of microscopic structure in relation to function of various organ systems.

Sp Qtr. 3 cl, 3 2-hr labs. Prereq: Permission of instructor.

710 Human Embryology GRAD 3-5

Designed to acquaint the anatomy graduate student with a basic knowledge of human embryology.

Au Qtr. Arr. Prereq: Permission of instructor.

712 Human Anatomy GRAD 12

Designed to acquaint a graduate student with a basic knowledge of human anatomy by regional dissection.

Au Qtr. Arr. Prereq: Permission of instructor. Starts 3rd week in August; ends in mid-November.

716 Human Neurobiology GRAD 7

Designed to acquaint a graduate student with a basic knowledge of human neuroanatomy.

Wi Qtr. Arr. Prereq: Permission of instructor. Not open to students with credit for NeuroSc 716. Cross-listed in Neuroscience Department.

750 Radiologic Anatomy GRAD 2

Anatomy of specific regions or areas as it applies to the interpretation and understanding of diagnostic images.

Sp Qtr. Prereq: Satisfactory completion of MedColl 682, or Anatomy 712 or equiv and permission of instructor. Repeatable to a maximum of 8 cr hrs. Cross-listed with Radiology.

850 Seminar in Anatomy GRAD 1

Discussions of research in progress and reports from the literature of current anatomical problems.

Wi, Sp Qtrs. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

911.02 Advanced Studies in Anatomy: Connective Tissue and Bone GRAD 3-5

Activities of fibrous connective tissues emphasizing formation and maintenance of fibers and ground substance, dynamics of the structure, chemistry, and metabolism of bone.

Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

911.03 Advanced Studies in Anatomy: Embryology GRAD 3-5

Mammalian embryological development emphasizing descriptive or experimental approaches; metabolic aspects of development including enzymatic changes, hormonal effects, environmental factors, and teratogenic agents.

Prereq: Permission of Instructor. Repeatable to a maximum of 30 cr hrs.

911.10 Advanced Studies in Anatomy: Principles of Human Cytogenetics GRAD 3-5

Human cytogenetics as related to autosomal and sex chromosomes; technique of tissue culture for study of human chromosomes and karyotype analysis.

Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

911.13 Advanced Studies in Anatomy: Topographical Anatomy GRAD 3-5

Study of unmounted serial cross sections of selected regions of the human body emphasizing the inter-relationship of structures to one another in a three-dimensional perspective.

Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.
Anatomy

911.14 Advanced Studies in Anatomy: Advanced Regional Dissections
GRAD 3-5
Careful dissection of one or more regions of the body, supplemented with literature research. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

999 Research in Anatomy
GRAD 1-18
Research for thesis or dissertation purposes only. Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

Anesthesiology

999 Research
GRAD 1-18
Students doing their Ph.D. research have to register for research credits. Su, Au, Wi Sp Qtrs. Repeatable. This course is graded S/U.

Animal Sciences

200 Introductory Animal Sciences
UGRD 5
Introduction to the historical, social, and biological fundamentals underlying the animal industries in the world. 200H (honors) may be available. Au, Wi, Sp Qtrs. 4 cl, 1 2-hr lab. 200E may be available for honors embedded experience.

200H Introductory Animal Sciences
UGRD 5
Role, current organization, history, and characteristics of the animal industries in the world. Au, Wi, Sp Qtrs. 4 cl, 1 2-hr lab. Prereq: Honors program or permission of department or instructor. Not open to students with credit for AnimSci 200.

201 Introduction to Equine Studies
UGRD 5
Overview on the history, use, and management of horses and their economic impact on society. Topics include nutrition, reproduction, health care, and industry employment opportunities. Au Qtr. 3 cl, 1 3-hr lab.

207 Dairy Cattle Evaluation
UGRD 3
Use of functional type traits in evaluation and selection of dairy cattle. Sp Qtr. 1 2-hr lab and 1 3-hr lab. Prereq: 200 and soph standing. Off campus field exp: 1 2-day field trip to dairy herds in the state plus 3-4 class periods.

240 Animals in Society
UGRD 5
Introduction to the historical, social, cultural, economic and legal frameworks within which current human-animal relationships have evolved. Au Qtr. 3 1-hr cl, 1 2-hr rec. GEC soc sci individuals and groups course.

245 Companion Animal Fundamentals
UGRD 5
Introduction to social, financial, health, nutrition, and management fundamentals, as well as career opportunities, involved in companion animal care. Sp Qtr. 5 cl.

248 Human and Animal Interactions in the United States
UGRD 2
How history, government, geography and infrastructure impact the use of animals in the United States. Au Qtr. Prereq: permission of instructor.

250 Food Animal Products
UGRD 3
The value and impact of food animal products on our society. Wi, Sp Qtrs. 3 cl. Prereq: 200 or concur.

260 Data Analysis and Interpretation for Decision Making
UGRD 5
Basic concepts of probability and statistics applied to the interpretation of quantitative data. Au, Wi Qtrs. 4 cl, 1 2-hr rec/lab. Prereq: Math 130 or 148. Not open to students with credit for AnimSci 210, AgEcon 205 or ADEcon 205, AgEduc 387 or AEE 387, HCS 260, NatRes 222, or ENR 222. Stat 125, 135, 145. Distance Learning format. GEC data analysis course.

271.01 Equine Behavior and Training
UGRD 5
Understanding equine behavior and physiology and practical application of that knowledge to safely and effectively modify desirable and undesirable behavior of assigned horses. Au Qtr. Prereq: Permission of instructor; must have medical insurance. A maximum of five credits between AnimSci 271.01 and 271.02 may count in the Animal Sciences major. Repeatable to a maximum of 10 cr hrs.

271.02 Advanced Equine Behavior and Training
UGRD 5
Further understanding equine behavior and physiology and advanced application of that knowledge to safely and effectively modify desirable and undesirable behavior of assigned horses. Wi Qtr. Prereq: Permission of instructor; proof of medical insurance. A maximum of five credits between AnimSci 271.01 and 271.02 may count toward the Animal Sciences major. Repeatable to a maximum of 10 cr hrs.

290 Creating a Career with the Animal Sciences
UGRD 2
Career development is pursued as a matching of personal interests with the opportunities from guest professionals. Course assignments include enhancing a careers-based web site. Sp Qtr. 1 2-hr cl. Not open to Rank 4 students.

299H Freshman Research Seminar: Contemporary Animal Biology Research
UGRD 3
Exploration of prominent scientists and emerging issues in animal biology research. Wi Qtr. 3 1-hr cl. Prereq: Enrolled in Honors or permission of instructor. Only available to students with 90 hours or fewer.

300 Livestock Selection and Evaluation
UGRD 4
Laboratory exercises employing current standards of animal excellence including carcass value for the selection and improvement of farm livestock. Au Qtr. 4 2-hr lab-discussions. Prereq: 200 and yr standing.

301 Equine Selection and Evaluation
UGRD 3
Understanding the relationship of form to function; evaluating conformation and performance, and orally defending that evaluation. Sp Qtr. 3 2-hr labs. Prereq: 200 or 201. The student will pay a lab fee.

305 Meat Animal and Carcass Evaluation
UGRD 3
The factors that influence the value of meat animals, carcasses, and wholesale cuts in accordance with recognized grading standards; laboratory practice. Wi Qtr. 3 2-hr labs. Prereq: 200.

306 Poultry Science Fundamentals
UGRD 5
Describes classes of poultry and game birds, evaluation of poultry products, incubation, housing, anatomy, diseases, genetics, and nutrition. Laboratories include raising chickens for market. Sp Qtr. 4 cl, 1 1-hr lab, 1hr arr. Prereq: 200 or Biology 101 or 113. This course is available for EM credit.

310 Principles of Animal Systems Physiology
UGRD 5
Introductory course that surveys organs/systems within the body and relates the functional physiology of those systems to animal production. 310H (honors) may be available. Wi, Sp Qtrs. 5 1-hr cl. Prereq: Biology 101 or 113 or 115H or PCMB 101 or PintBio 101. BER/LAR course. GEC bio sci course.

317 Milk Secretion
UGRD 3
Introduction to mammary gland anatomy, milk synthesis, and factors affecting mammary health. Sp Qtr. 2 1.5-hr cl. Prereq: Biology 101 or 113.

318 Introductory Reproductive Physiology
UGRD 3
Introduction to anatomy and physiology of reproductive systems of various species with a focus on agricultural species. Sp Qtr. Prereq: Biology 101 or 113 or 115H. Not open to students with credit for Animal Science 610.

320 Principles of Genetic Improvement
UGRD 5
An introduction to the methods available for bringing about genetic change in farm animals. Wi, Sp Qtrs. 5 cl. Prereq: 200; and 260 or AgEcon 205 or ADEcon 205 or AgEduc 387 or AEE 387 or HCS 260 or Stat 145, and Biology 101 or 113.

330 Principles of Animal Nutrition
UGRD 5
A study of nutrients needed by animals. Au, Wi, Sp Qtrs. 4 cl, 1 2-hr lab. Prereq: Biology 101 or 113 or 115H or PCMB 101 or PintBio 101.

331 Equine Feeds and Feeding
UGRD 4
Nutrient needs of the horse; significance of supplements and feeds as they relate to the horse’s nutrition and health. Wi Qtr. 4 cl.

340 Management Intensive Grazing
UGRD 3
The application of scientific principles of plant growth, animal nutrition and behavior to manage grazing systems for profitable, sustainable livestock enterprises. Sp Qtr. 1 2-hr cl, 1 2-hr lab. Prereq: 200 or HCS 200. Occasional Saturday field trips (2).

341 Equine Facilities, Marketing, and Management
UGRD 4
Emphasis on the development and practical management of equine facilities. Topics include commercial and private training, boarding and show facilities. Wi Qtr. 2 1-hr cl, 1 2-hr recitation. Prereq: 201 or 200.

347 Challenges and Opportunities for the Dairy Industry
UGRD 2
Examination of the challenges and opportunities facing the dairy production and processing sectors in Ohio and the US. Wi Qtr. Prereq: 200. Not open to students with less than 45 credit hours.

355.01 Principles of Meat Science
UGRD 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. Au, Wi Qtrs. 3 cl.

355.02 Meat Science Products Laboratory
UGRD 3
Procedures and value factors involved in meat animal harvest, carcass evaluation, fresh meat processing, cured-processed meat production, and retail merchandising. Wi Qtr. 2 3-hr labs. Prereq or conc r: 355.01.
360 Global Food and Agriculture UGRD 5
The integration of food, agriculture, environment, resources, technology, culture and trade on a global scale.
Wi Qtr. 3 1.5-hr cl. Not open to students with credit for AnimSci 375. 360E may be available for honors extended experience.

400 Cellular Effects on Animal Growth and Development UGRD 4
To understand how the cell affects the formation and growth of tissues and organs important in domestic animal growth.
Au Qtr. 2 1.5-hr cl. Prereq: 310. Not open to students with credit for AnimSci 460.

413 Principles of Animal Health UGRD 5
Introduction to infectious diseases, agents causing disease, and host defense systems.
Sp Qtr. 2 2.5-hr cl. Prereq: 200, 310; Biology 114 or 116H.

488 Professional Development in Animal Sciences UGRD 1-3
Participation in structured co-curricular programs leading to professional development (e.g. Academic Quadrathon, Livestock Selection and Evaluation Teams, etc.).
Su, Au, Wi, Sp Qtr. Arr. Prereq: 2.00 cumulative pt-hr ratio and permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

489 Internship in Animal Science UGRD 3-5
Supervised preplanned employment experience and/or on-site problem solving study program; written comprehensive report required.
Su, Au, Wi, Sp Qtr. Arr. Prereq: 15 cr hrs in AnimSci. Open only to dept majors. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

494 Group Studies UGRD 1-5
Special topic area group studies formally proposed for a specific quarter by an animal sciences faculty member.
Su, Au, Wi, Sp Qtr. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

541 Equine Production UGRD 5
The application of scientific principles to the production of horses. Includes farm design, reproductive management, genetics, nutrition, health, marketing and behavior of the horse.
Sp Qtr. Prereq: 210 or 201, and 330 or 331.

542 Beef Cattle Production and Management UGRD 5
The application of science and basic principles of nutrition, genetics, physiology, and marketing to the production and management of beef cattle.
Sp Qtr. 4 cl, 1 hr lab. Prereq: 310 and 320 and 330.

543 Swine Production UGRD 5
The application of science and basic principles of nutrition, physiology, genetics, health, economics, meats, and housing in integrated management systems for modern swine production.
Au Qtr. 3 cl, 1.5-hr lab. Prereq: 310 and 320 and 330.

544 Sheep Production and Management UGRD 5
The application of science and basic principles of nutrition, genetics, physiology, and marketing to the production and management of sheep.
Wi Qtr. 3 cl, 1 hr lab. Prereq: 310 and 320 and 330.

545 Companion Animal Biology and Behavior UGRD 5
Anatomy, genetics, nutrition, physiology and behavior of dogs and cats. Human-companion animal relationships.
Au Qtr. 2 2-hr cl. 1 1-hr lab. Prereq: 310, 320 or 330.

546 Poultry Management UGRD 5
Describes classes of poultry and game birds, incubation, housing, anatomy, diseases, genetics, and nutrition. Laboratories include raising chickens for market and egg production.
Wi Qtr. 4 cl, 1.5-hr lab and 1 hr arr. Prereq: 310, 320 and 330. Not open to students with credit for PftySc 546.

547 Dairy Herd Management UGRD 5
Application of scientific principles to practical herd management, analyses of alternatives and decision making.
Au Qtr. 2 2.5-hr cl. Prereq: 310, 320 and 330. Not open to students with credit for 447.

555.02 Meat Processing UGRD 4
Fundamental changes in soft animal tissues resulting from comminution and application of chemicals and heat.
Au Qtr. 3 cl, 2 2-hr labs. Prereq: 355.01.

555.03 Branded Meat Products UGRD 4
Integration of multiple factors influencing value-added product development including: raw material quality and procurement, processing, packaging, distribution, and complexity of market development in niche markets.
* Sp Qtr. 2 2-hr cl. Prereq: 200, 355.01; AEDEcon 200.

593 Individual Studies UGRD 2-5
Special assignments and elementary research; problems assigned after consultation with instructor in charge.
Su, Au, Wi, Sp Qtrs. Prereq: 2.50 cumulative pt-hr ratio and written permission of instructor. Repeatable to a maximum of 10 cr hrs. Repeatable or hrs include cr hrs in AnimSci 593. This course is graded S/U.

597 Issues Concerning Use of Animals by Humans UGRD 5
The historical, biological, ethical, nutritional, and economic issues of using animals to meet human needs.
Su, Au, Wi, Sp Qtrs. 2 2.5-hr cl. Prereq: Jr or sr standing. Not open for major credit in AnimSci. LAR course. GEC contemporary world course.

600 Capstone Course in Animal Sciences UGRD 5
Relationship of the animal sciences to the emerging and continuing issues facing society.
Au, Sp Qtr. 3 2-hr cl. Prereq: Sr standing, second writing course. Not open to freshmen or sophomores. GEC course.

605 Advanced Meat Science UGRD 3
Advanced antemortem and postmortem biochemical principles in skeletal muscle underlying meat quality.
Sp Qtr. 3 cl. Prereq: 355.01. Not open to students with credit for 555.01.

610 Physiology of Reproduction UGRD 5
Physiology and endocrinology of the reproductive systems; examination of basic mechanisms governing reproduction in various species.
Au Qtr. 3 cl, 1 hr recitation, 1-2 hr lab. Prereq: 310 and second writing course. GEC course.

616 Poultry Physiology UGRD 5
An organ system approach to avian physiology with particular emphasis on adaptation to modern production systems, animal care, growth, and reproduction.
Wi Qtr. 4 cl, 1.5-hr lab. Prereq: 310.

617 Physiology of Lactation UGRD 3
The physiological, endocrine, nutritional, and environmental factors influencing the synthesis and ejection of milk.
Wi Qtr. 2 1-hr cl, 1 2-hr lab. Prereq: 20 or hrs in AnimSci or Vertebrate Biology.

618 Molecular Events in Tissue Growth and Development UGRD 4
A molecular developmental approach to the study of tissue growth, structure, and function in animals and humans.
Sp Qtr. 2 2-hr cl. Prereq: 310, Biochem 511 or graduate standing or permission of instructor.

628 Genetic Applications to the Animal Industries UGRD 3
Application of genetic principles to beef, dairy, horse, poultry, sheep and swine industries. The approach is the study of populations through quantitative and molecular genetics.
Wi Qtr. 2 1.5-hr cl. Prereq: 320 or equiv or permission of instructor. Not open to students with credit for 522.

630.01 Advanced Animal Nutrition: Ruminant Nutrition UGRD 5
Principles of ruminant nutrition, metabolism and physiology. Computer formulations and feeding strategies for beef and dairy cattle will enhance application and problem solving.
Au Qtr. 3 1.5-hr cl. Prereq: 330 or grad standing.

630.02 Advanced Animal Nutrition: Non-Ruminant Nutrition UGRD 5
Principles of non-ruminant nutritional physiology, metabolism, and practical feeding programs.
Wi Qtr. 3 1.5-hr cl. Prereq: 330 or grad standing.

630.03 Advanced Animal Nutrition: Feeding Management and Records Analysis for Dairy Cattle UGRD 3
Feeding management of dairy cattle for the prevention of diseases and analysis of dairy records for production medicine decisions.
Wi Qtr. Prereq: 330.

638 Nutritional Immunology in Animal Systems UGRD 3
Understanding how nutrition can be applied to modify immune responses during and after an infection to increase animal production.
Sp Qtr. Prereq: 330 or permission of instructor.

647 Evaluation and Integration of Research for Dairy Operations UGRD 5
Integration of scientific principles to maximize efficiency in dairy farm operations.
Sp Qtr. 5 cl. Prereq: 310 Off campus field exp: 2 1-day field trips to established dairy operations.

650 Advanced Meat Technology UGRD 3
Evaluation of scientific contribution to meat products and processing.
Sp Qtr. 2 2-hr labs. Prereq: Permission of instructor. Not open to students with credit for AnimSci 650.

655 Laboratory Analysis of Meat Products UGRD 3
Analysis of meat products by physical, chemical, and microbiological techniques.
Wi Qtr. 2 cl, 2 1-hr labs. 4 hrs arr. Prereq: Permission of instructor.

660 Quality Control Interpretation UGRD 3
Sampling, statistical plotting, and chart interpretation using examples drawn from the food area.
Sp Qtr. 3 cl.

668 Applied Biometrics UGRD 5
Study methods used in the quantification of biological processes and the integration of research results and knowledge into quantitative methods.
Sp Qtr. 5 1-hr cl. Prereq: Stat 528 and 529, or equiv.
22 Animal Sciences

683H Honors Projects UGRD 1-10
Conducting and reporting the honors project.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: FAES 590.01H, enrollment in honors program, and permission of honors supervisor. Repeatable to a maximum of 10 cr hrs. Repeatable as 683H or in combination with 593, 593H, 693, or 693H. This course is graded S/U.

690 Anaerobic Microbiology UGRD 5
Provides and understanding of fundamentals of anaerobic microbiology and applications to animal and human nutrition and bioenergy production. Sp Qtr. Prereq: MicroBiol 520 and Biochem 511 or permission of instructor.

693 Individual Studies UGRD 3-5
Special assignments and advanced research; problems assigned after consultation with the instructor in charge. Su, Au, Wi, Sp Qtrs. Prereq: 2.50 cumulative pt-hr ratio and written permission of instructor. Repeatable to a maximum of 15 or hrs. This course is graded S/U.

694 Group Studies UGRD 3-5
Special topics area group studies finally proposed for a specific quarter by an animal science faculty member. Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor.

697.01 Study at a Foreign Institution: Welfare of Agricultural and Recreational Animals UGRD 5
Role of animal welfare in production efficiency and in recreational animals. How animal welfare issues will impact the future of global food animal agriculture. Wi Qtr. Arr. Prereq: 310, 320, 330. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as travel and subsistence costs. This is part of a 3 course sequence that will be required in the Animal Sciences Australia Study Abroad Program.

697.02 Study at a Foreign Institution: Animal Production Systems in the Diverse Environments of Australia UGRD 5
Animal production systems, comparing practices, economic issues and environmental constraints between Australia and the United States. Wi Qtr. Arr. Prereq: 310, 320, 330. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as travel and subsistence costs. This is part of a 3 course sequence that will be required in the Animal Sciences Australia Study Abroad Program.

697.03 Study at a Foreign Institution: African Wild Dogs: Behavior and Ecology UGRD 4
This study abroad program will enable students to learn about instincts that guide behaviors of wild dogs by participating in field research in Africa. Au Qtr. 20 hr lec, 60 hr lab. Prereq: Biology 114 and jr standing; preference given to students who have completed or are registered for AnimSci 545. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as travel and subsistence costs.

697.04 Study at a Foreign Institution: Dairy Industry UGRD 4
Outside of the US
An opportunity for students to study the dairy industry of another country and to experience it by visiting the country studied. Sp Qtr. Prereq: Open to students accepted into Dairy Industry Study Abroad Program and concurrently enrolled in AnimSci 494 (Dairy Industry in the Netherlands). Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as travel and subsistence costs.

697.05 Study at a Foreign Institution: Human and Animal Interactions in Europe UGRD 3
Experience the beliefs and views of Irish culture on the use and involvements of animals as part of their daily lives. Au Qtr. Arr. Prereq: Concurrent enrollment in 494 (Human and Animal Interactions in the United States) and permission of instructor. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as travel and subsistence costs.

697.06 Human and Animal Interactions in Australasia UGRD 3
Study abroad giving students an appreciation for cultural differences in the use and involvements of animals in society, comparing a Midwestern with an Australasian culture. Au Qtr. Short term study abroad: 10 days after Au Qtr. Prereq or concur: 248 (Human and Animal Interactions in the United States), and permission of Instructor.

697.08 Study at a Foreign Institution: Equine Studies in Europe UGRD 3
Short-term study abroad program to allow students to experience different cultures and compare how aspects of the culture shape and impact respective equine industries. 11 day study tour. Prereq: 201 and permission of instructor. Repeatable to a maximum of 6 cr hrs.

710 Advanced Reproductive Physiology UGRD 4
Recent advances in research in mammalian reproduction. * Sp Qtr. 2.2 hr cl. Prereq: 610 and acceptable courses in Physiol, Anatomy, and Biochem.

720.01 Genetics of Animal Populations I UGRD 3
Parameters of statistical populations, genetic arrays and equilibria, and statistical measures; partitioning the phenotypic variance, mutation, migration, selection, and chance. * Au Qtr. 3 cl. Prereq: 320 or MolGen 500, or equiv.

720.02 Genetics of Animal Populations II UGRD 3
Selection for polygenic characters, mating systems, and development of breeding plans. * Au Qtr. 3 cl. Prereq: 720.01.

730 Advanced Topics in Ruminant Nutrition GRAD 5
Advanced aspects of microbial fermentation, digestive physiology, and metabolism by ruminants integrated into current research topics. * Sp Qtr. Prereq: Biochem 511 or equiv, AnimSci 630.01 or equiv, or permission of instructor. Not open to students with credit for 730.01.

761 Carbohydrate and Lipid Metabolism UGRD 5
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. Wi Qtr. 3.1-hr cl. Prereq: Biochem 511 or equiv; HumnNtr 610 or AnimSci 630.01, or grad standing or permission of instructor. Not open to students with credit for FdScTe 761 or HumnNtr 761. Cross-listed in Food Science and Technology and Human Nutrition.

762 Principles of Nutrient Metabolism UGRD 5
In-depth examination of the cellular and molecular mechanisms responsible for regulation of nutrient transport and metabolism with focus on the utilization of dietary protein. Au Qtr. 3.1-cl. Prereq: Biochem 511 or equiv; HumnNtr 310 or AnimSci 330; or grad standing or permission of instructor. Not open to students with credit for FdScTe 762 or HumnNtr 762. Cross-listed in Food Science and Technology and Human Nutrition.

763 Vitamin and Mineral Metabolism UGRD 5
In-depth treatment of biochemical functions, absorption, transport, utilization, interrelationships and nutritional requirements of the vitamins and minerals in humans and other higher animals. Su Qtr. 3.1-cl. Prereq: Biochem 511 or equiv; EEOB 232 or AnimSci 310; HumnNtr 610 or AnimSci 630.01 or 630.02 or grad standing. Not open to students with credit for FdScTe 763 or HumnNtr 763. Cross-listed in Food Science and Technology and Human Nutrition.

810.03 Immunology and Immunogenetics GRAD 5
Immunology and Immunogenetics. Sp Qtr. Prereq: Written permission of instructor, acceptable courses in Physiol, CBNAnat and Biochem. Prereq. Written permission of instructor. Not open to students with credit for AnimSci, DairySci or PthySci 810.

830.01 Advanced Studies: Energy/Lipids GRAD 5
Advanced concepts in nutrition. Energy/Lipids. * Wi Qtr. 5. cl. Prereq: FdScTe 630 or HumnNtr 610; 761 and 762 or FdScTe 761 and 762 or HumnNtr 761 and 762; 10 grad cr hrs in Physiol. Not open to students with credit for FdScTe 830 and HumnNtr 830. Cross-listed in Food Science and Technology, and Human Nutrition.

830.02 Vitamins/Minerals GRAD 5
Advanced concepts in nutrition. * Wi Qtr. 5 cl. Prereq: 530 or HumNtr 610; 761 and 762 or FdScTe 761 and 762 or HumNtr 761 and 762; 10 grad cr hrs in Physiol. Not open to students with credit for FdScTe 830 or HumnNtr 830. Cross-listed in Food Science and Technology, and Human Nutrition.

830.03 Proteins and Amino Acids GRAD 3
Advanced concepts in nutrition. * Wi Qtr. Prereq: 530 or HumNtr 610; 761 and 762 or FdScTe 761 and 762 or HumNtr 761 and 762; 10 grad cr hrs in Physiol. Not open to students with credit for FdScTe 830 or HumnNtr 830. Cross-listed in Food Science and Technology, and Human Nutrition.

830.08 Carbohydrates GRAD 3
Advanced concepts in nutrition. * Au Qtr. Prereq: 530 or HumNtr 610; 761 and 762 or FdScTe 761 and 762 or HumNtr 761 and 762; 10 grad cr hrs in Physiol. Not open to students with credit for FdScTe 830 or HumnNtr 830. Cross-listed in Food Science and Technology, and Human Nutrition.

830.09 Food and Nutritional Toxicology GRAD 3
Advanced concepts in nutrition. Basic principles in food and nutrition toxicology focused on interactions of nutrients and food toxins, role of diet in mutagenesis and carcinogenesis and safety assessment. * Sp Qtr. Prereq: 530 or HumNtr 610; 761 and 762 or FdScTe 761 and 762 or HumNtr 761 and 762; 10 grad cr hrs in Physiol; HumnNtr 610 or AnimSci 630.01 or 630.02 or permission of instructor. Not open to students with credit for FdScTe 830 or HumnNtr 830. Cross-listed in Food Science and Technology, and Human Nutrition.

830.10 A Comprehensive Approach to Food Safety GRAD 3
Advanced concepts in nutrition. Course provides a comprehensive overview of food safety issues, challenges and solutions across the food chain from farm to table. Wi Qtr. 1.3-hr cl. Prereq: 530 or HumNtr 610; 761 and 762 or FdScTe 761 and 762 or HumNtr 761 and 762; 10 grad cr hrs in Physiol. Not open to students with credit for FdScTe 830 or HumnNtr 830. Cross-listed in Food Science and Technology, and Human Nutrition.
830.11 Nutrition-Endocrine Interactions in Women’s Health
Advanced concepts in nutrition. Examination of the historical and emerging research in the area of diet-endocrine interactions and women’s health.
Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: Biology 101 or equiv. Not open to students with credit for 251. NS Adminis Cond course. GEC bio sci course.

200H Introduction to Physical Anthropology
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.
Su, Au, Wi, Sp Qtrs. 5 cl. Prereq; Honors program or permission of department or instructor; Biology 101 or equiv. Not open to students with credit for 251. NS Adminis Cond course. GEC bio sci course.

201 World Prehistory: An Anthropological Perspective
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. 21H (honors) may be available.
Su, Au, Wi, Sp Qtrs. 5 cl. Not open to students with credit for 261. GEC soc sci individuals and groups and social diversity - international issues (Global) course. SS Adminis Cond course. E201 may be available for honors embedded experience at the regional campuses.

202 Peoples and Cultures: An introduction to Cultural Anthropology
Comparative survey of traditional and contemporary peoples in the several world culture regions; culture concepts; study of selected topics.
Su, Au, Wi, Sp Qtrs. 5 cl. GEC soc sci individuals and groups and social diversity - international issues (Global) course. SS Adminis Cond course.

202H Peoples and Cultures: An introduction to Cultural Anthropology
Comparative survey of traditional and contemporary peoples in the several world culture regions; culture concepts; study of selected topics.
Su, Au, Wi, Sp Qtrs. 5 cl. Prereq; Honors program or permission of department or instructor. Not open to students with credit for 261. GEC soc sci individuals and groups and social diversity - international issues (Global) course. SS Adminis Cond course.

241 The Culture and Cultures of the Middle East
Introduction to the culture of the Middle East as lived in its villages, towns, and cities.
Au, Wi Qtr. 2 hr-cl not. Not open to students with credit for NELC 241. Cross-listed in Near Eastern Languages and Cultures. GEC arts and human cultures and ideas and social diversity - international issues (Global) course.

294 Group Studies
Designed to give groups of students an opportunity to pursue special studies in topics not otherwise offered.
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 10 hr.

300 Human Origins
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.
Au, Wi Qr. 2-8 hr-cl. Prereq: 200 or permission of instructor.

301 Modern Human Physical Variation
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.
Au, Wi, Sp Qtrs. 2-8 hr-cl. Prereq: 200 or permission of instructor. Not open to students with credit for 535.

302 Introduction to Medical Anthropology
Relationship of anthropology to the art and science of medicine.
Au, Wi, Sp Qtrs. Prereq: 200 or permission of instructor.

304 The Living Primates
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.
Au Qtr. 2 hr-cl. Prereq: 200.

305 Introduction to Forensic Anthropology
An introduction to the field of forensic anthropology in which students will be introduced to basic methods used to analyze unidentified human skeletal remains.
Sp Qtr.
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315 Evolution: Contemporary and Interdisciplinary Perspectives UGRD 5
Develop an understanding of the interplay among different disciplinary approaches to evolutionary studies. Sp Qtr. 2 2-hr cl. Prereq; one biology, one anthropology or one earth sciences course. Not open to students with credit for EarthSci 315. Cross-listed in Earth Sciences.

350 Prehistoric Indians of the Ohio Valley UGRD 5
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. Sp Qtr. 3, 3 weekend field trips. Prereq; 201 or permission of instructor.

400 Contemporary Views of the Ancient Near East: Orientalism, Archaeology and Nationalism UGRD 5
Examines the history and impacts of Western archaeological scholarship in the Near East and explores contemporary archaeological practice. Wi Qtr.

401 Fundamentals of Archaeology UGRD 5
Introduction to basic archaeological theory and practice including fundamental field and laboratory, principles of survey, excavation, chronological analysis, typology, and palaeoethnography. Au Qtr. 4 cl, 1 1-hr lab. Prereq; 201 or permission of instructor.

402.01 North American Indians UGRD 5
Description and analysis of simple and complex hereditary characteristics in order to evaluate origin, adaptations and affinities of populations in a world region. North American Indians. Prereq; 200 or permission of instructor.

409 Primate Evolution UGRD 5
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. Sp Qtr. 2 2-hr cl. Prereq: 200.

411 Human Ecological Adaptations UGRD 5
A study of the interactive relationships between humans and their environments, past and present, with a focus on human biology. Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq; 200 or permission of instructor, Zoology or EEOB 400 recommended.

421.01 Regional Survey Course in Cultural Anthropology: China UGRD 5
A general survey of the traditional Chinese culture and society; family, kinship, and socio-political organizations; their transformations during the last century. Not open to students with credit for 414.

421.05 Regional Survey Course in Cultural Anthropology: Anthropology of Africa UGRD 5
Overview of anthropological studies of traditional African societies, with themes of European colonialism, kinship, social organization, economics, and politics. Sp Qtr.

421.06 Survey Course in Cultural Anthropology: Latin American Cultures and Migration in Global Peru UGRD 5
An intensive ethnographic investigation of Latin American and Caribbean migration (Mexico, Ecuador, The Dominican Republic) including the history of migration; contemporary movement; and transnationalism. Wi Qtr. 2 2-hr cl.

421.08 Regional Survey Course in Cultural Anthropology: Indians of North America UGRD 5
Development of culture change in North American Indians. Not open to students with credit for 412. GEC soc sci individuals and groups course.

451 Archaeology of the Ancient Near East UGRD 5
Archaeology of the Levant, Mesopotamia and Egypt from human origins through the age of pyramids and ziggurats.

452 Archaeology of the Pacific Islands UGRD 5
Introduces the prehistory of the Pacific Islands from an archaeological perspective. It emphasizes voyaging, colonization, and the emergence of cultural complexity.

489 Internship in Anthropology UGRD 2-6
An opportunity for work experience and on-the-job learning in anthropology-related employment.

500 Primate Sexuality UGRD 5
An evolutionary approach to the diversity of mating systems, morphologies, processes, and behaviors among prosimians, monkeys, apes, and humans.

525 History of Anthropological Theory UGRD 5
Major theoretical viewpoints in anthropology seen in their historical context. Au, Wi, Sp Qtrs. 5 cl. Prereq; 202 or permission of instructor.

533.01 New World Prehistory: Aztecs and their Predecessors UGRD 5
Detailed survey of native American prehistory: Examines the ancient civilizations of Mesoamerica, including the Olmecs, Zapotecs, Mixtecs, Aztecs, and Teotihuacan. Au Qtr. 4 cl. Prereq; 201.

553.02 New World Prehistory: Prehistoric Indians of Eastern North America UGRD 5
Detailed survey of native American prehistory: Survey of the archaeology and cultural history of North America east of the Rocky Mountains. Sp Qtr. 4 cl. Prereq: 201. Not open to students with credit for 550, 551, or 551.01.

553.04 New World Prehistory: Ancient Maya Civilization UGRD 5
Detailed survey of native American prehistory: recent archeological and epigraphic discoveries and examines the ancient Maya civilization of Mesoamerica. Au Qtr. 2 2-hr cl. Prereq; 201.

570H Introduction to Quantitative Genetics in Anthropology UGRD 5
Introduction to the genetic basis and analysis of phenotypic variation and evolution with an emphasis on human populations and human characteristics. Sp Qtr. 2 2-hr cl. Prereq: Jr or sr honors status, 200, Stat 529, MolGen 500; or permission of instructor.

597.01 Cultural Conflict in Developing Nations UGRD 5
Analysis of cultural conflict in developing nations resulting from rapid and extensive technological and social change. Au, Su Qtrs. 5 cl. Prereq; Jr or sr standing. Not open to students with credit for 450. GEC contemporary world course.

597.02 Women, Culture, and Development UGRD 5
An analysis of the dramatic changes occurring in women's lives in response to development and modernization; developing and developed countries contrasted. Au, Wi, Sp Qtrs. 5 cl. Prereq; Jr or sr standing. Not open to students with credit for 460. GEC contemporary world course.

597.03H The Prehistory of Environment and Climate UGRD 5
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. Wi Qtr. 2 2-hr cl. GEC contemporary world course.

597.04 The Molecular Revolution: Heredity, Genome Mapping, and Genomania UGRD 5
Interface of genetic technology, genome project, and health against background of societal tensions, genomics, and dilemmas of genetic testing, and repercussions of molecular revolution.

597.05H The Global Food Crisis UGRD 5
This multidisciplinary course explores the causes, consequences and potential solutions to the global food crisis. Au Qtr. Prereq; Honors status and Junior/Senior status; or permission of department or instructor. GEC contemporary world course.

601.01 Medical Anthropology: Biosocial Aspects of Health UGRD 5
Biomedical and biosocial influences on problems of human health throughout the world, focusing upon the evolutionary implications of those problems.

601.04 Medical Anthropology: Global Perspectives on Women's Health UGRD 5
A cross-cultural comparison of the political, economic, social, and biological issues surrounding women's health.

602.01 Special Topics in Archaeology: Strategy of Archaeological Field Research UGRD 5
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.

602.02 Special Topics in Archaeology: Environmental Archaeology UGRD 5
Laboratory Methods
Practical experience in the laboratory analysis of archaeological materials with emphasis on stone, bone, and ceramic artifacts; preparation of reports on analytical procedures and results.

602.03 Special Topics in Archaeology: Environmental Archaeology UGRD 5
A survey of the principles, methods, and techniques of prehistoric environmental analysis; emphasis on understanding Pleistocene and Holocene environments as they relate to archaeology.
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630 Language and Culture in Education UGRD 5
Examination of the problems of educating children of diverse cultural and linguistic backgrounds in the U.S. school system.
Au, Wi, Sp Qtr. 2 2-hr cl. Prereq: 202 or equiv or grad standing.

640.01 Special Topics in Physical Anthropology: Primate Behavior UGRD 5
A broad survey of living primates, major taxonomic groups within the order, diet, group living, mating strategies, predation, intelligence.
Prereq: 200 or equiv or permission of instructor.

640.02 Special Topics in Physical Anthropology: Growth and Development UGRD 5
Growth and development.
Prereq: 200 or equiv or permission of instructor.

640.04 Special Topics in Physical Anthropology: Forensic Anthropology UGRD 5
Application of osteological and bioarchaeological methods in forensic science.
Au Qtr. Prereq: 200 or equiv or permission of instructor; 603.01 or equiv.

640.05 Special Topics in Physical Anthropology: Biology of Senescence UGRD 5
Biology of human senescence, aging, longevity, and chronic disease; evolutionary theories, mechanistic models, biocultural influences, cellular and physiological processes; biodemography, interventions, homoeostasis.
Sp Qtr. 2 2-hr cl. Prereq: 200 or Biology 101 or Biology 113 or permission of instructor.

640.06 Special Topics in Physical Anthropology: Human Evolutionary Anatomy UGRD 5
An evolutionary approach to studying the human body through integrative anatomy, focusing on the functional anatomy of fossil and modern hominid skeletal evidence and primate comparative anatomy.
Sp Qtr. Prereq: 200 or equiv and 300; or permission of instructor.

650 Research Design and Ethnographic Methods UGRD 5
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.
Au Qtr. Prereq: 202 or permission of instructor.

650H Research Design and Ethnographic Methods UGRD 5
Students learn to study anthropological problems through hands on experience with ethnographic methods, critical discussion of issues in ethnographic research and design an ethnographic study.
Au Qtr.

651 Spatial Analysis for Anthropologists GRAD 5
Introduces the analysis of spatial data in anthropological research; data collection; analysis using GIS; theoretical and methodological issues pertaining to research design.  
Su Qtr. Prereq: Geog 607 (Undergraduates only) or permission of department.

685 Summer Field School in Archaeology UGRD 3-12
Practical experience in archaeological fieldwork including site survey, excavation, surveying and mapping, preservation, and other related methods and techniques of data recovery.  
Su Qtr. Full time in expedition camp. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs.  
Field school is conducted at a site within commuting distance of the Columbus campus. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

686 Forensic Science, Forensic Anthropology and Forensic Archaeology Summer Field School UGRD 5
Intensive forensic science field course covering crime scene processing, evidence collection, and case development for testimony in court.  
Su Qtr. 1.5 days/8 hrs day.

693.01 Individual Studies: Theory UGRD 1-15
Theory.
Prereq: Written permission of instructor. Repeatable. This course is graded S/U.

693.02 Individual Studies: History UGRD 1-15
Prereq: Written permission of instructor. Repeatable. This course is graded S/U.

693.03 Individual Studies: Anthropological Linguistics UGRD 1-15
Anthropological Linguistics.
Prereq: Written permission of instructor. Repeatable. This course is graded S/U.

693.04 Individual Studies: Research Methodology UGRD 1-15
Research Methodology.
Prereq: Written permission of instructor. Repeatable. This course is graded S/U.

693.05 Individual Studies: Prehistory UGRD 1-15
Prehistory.
Prereq: Written permission of instructor. Repeatable. This course is graded S/U.

693.06 Individual Studies: Ethnography UGRD 1-15
Ethnography.
Prereq: Written permission of instructor. Repeatable. This course is graded S/U.
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693.07 Individual Studies: Physical Anthropology UGRD 1-15
Physical Anthropology. Prereq: Written permission of instructor. Repeatable. This course is graded S/U.

694 Group Studies GRAD 2-15
Designed to give groups of students an opportunity to pursue special studies in topics not otherwise offered.
Su, Au, Wi, Sp Qtr. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

697 Study at a Foreign Institution UGRD 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtr. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 hrs. This course is Progress (P) graded. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

699 Undergraduate Research in Anthropology UGRD 1-15
Undergraduate research in variable topics.
Su, Au, Wi, Sp Qtr. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

701.01 Advanced Topics in Physical Anthropology: Modern Human Physical Variation UGRD 5
Discussion of advanced topics in human variation and hominid evolution; emphasis on critical analysis and evolution of theoretical topics in research design. Survey of modern human biological diversity; examination of the underlying evolution and adaptive mechanisms responsible; interpretation of the interplay between biology and behavior in adaptation. Not open to students with credit for 803.04 or 803.07.

701.02 Advanced Topics in Physical Anthropology: Hominid Paleanthropology UGRD 5
Discussion of advanced topics in human variation and hominid evolution; emphasis on critical analysis and evolution of theoretical topics in research design. A comprehensive study of the fossil hominids; fossils of "Homo Sapiens" and their relation to other fossil hominids.

702 Theories in Cultural Anthropology UGRD 5
Major theoretical orientations in cultural anthropology; the developmental histories of the major theoretical schools and examination of their respective philosophical foundations. Au Qtr. 2 2-hr cl., arr. time.

703 Culture and Language UGRD 5
Development and range of anthropological concerns with language; emphasis on utility of linguistic approaches, methods, and theories to other subdisciplines of anthropology.
Au, Wi, Sp Qtr. 2 2-hr cl.

720 Teaching in Anthropology GRAD 5
This course focuses on skills and pedagogy involved in teaching introductory anthropology. Prereq: Grad standing in the Department of Anthropology.

747 Foundations of Anthropology GRAD 5
The foundations of anthropological theory in all subdisciplines is explored in an historical and interdisciplinary context.

750 Osteology and Odontology Laboratory UGRD 6
Advanced theoretical and practical study of an osteological or odontological problem from data collection through data analysis to the presentation of results.
Wi, Sp Qtr. 2 3-hr cl. Prereq: 603.01, 603.02, 603.03, and 603.04; or permission of instructor. Repeatable to a maximum of 18 cr hrs.

783H Honors Research UGRD 3-5
Honors Research.
Su, Au, Wi, Sp Qtr. Prereq: 4th yr standing with a grade of A in at least half of the anthropology courses and an average of B in the remainder; permission of the instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 2 qtrs are required of candidates for the degree BA with distinction in anthropology. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. This course is graded SU.

801.01 Archaeology of Hunter-Gatherer Societies GRAD 5
Advanced study of hunter-gatherer band society from theoretical, ethnographic, and archaeological perspectives. Prereq: Admission to grad program.

801.02 Origins of Food Production GRAD 5
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 603.07.

801.03 The Archaeology of Complex Societies GRAD 5
Advanced theoretical and comparative study of the rise and fall of complex societies in antiquity in the Old and New Worlds.
Wi Qtr. 1 3-hr cl. Prereq: Admission to grad program.

802 Issues in Archaeological Theory GRAD 5
Examination of the assumptions and concepts underlying archaeological data; methods of reconstructing cultural history, past lifeways, and explaining cultural change.
Wi Qtr. 4 cl. Prereq: Admission to graduate program. Not open to students with credit for 556 or 556.01.

805.01 North America GRAD 3-5
North America. Repeatable to a maximum of 10 cr hrs.

805.02 East Asia GRAD 3-5
East Asia. Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 10 cr hrs.

810.01 Seminars in Cultural Anthropology: Nature of Culture GRAD 3-5
Nature of culture. Repeatable to a maximum of 10 cr hrs.

810.05 Seminars in Cultural Anthropology: Acculturation, Change and Stability GRAD 3-5
Acculturation, change and stability. Repeatable to a maximum of 10 cr hrs.

810.06 Seminars in Cultural Anthropology: Peasant Cultures GRAD 3-5
Peasant cultures. Repeatable to a maximum of 10 cr hrs.

810.08 Seminars in Cultural Anthropology: Human Ecology GRAD 3-5
Human ecology. Repeatable to a maximum of 10 cr hrs.

810.21 Seminars in Cultural Anthropology: Study Design and Data Analysis GRAD 3-5
Study design and data analysis. Repeatable to a maximum of 10 cr hrs.

810.22 Seminars in Cultural Anthropology: Theory and Problems in Cultural Anthropology GRAD 3-5
Theory and problems in cultural anthropology. Repeatable to a maximum of 10 cr hrs.

810.23 Seminars in Cultural Anthropology: Ethnographic Field Experience GRAD 3-5
Ethnographic field experience. Repeatable to a maximum of 10 cr hrs.

820.01 Seminars in Physical Anthropology: Evolutionary Theory GRAD 3-5
Evolutionary theory. Repeatable to a maximum of 10 cr hrs.

820.03 Seminars in Physical Anthropology: Non-human Primate Behavior GRAD 3-5
Non-human primate behavior. Repeatable to a maximum of 10 cr hrs.

820.04 Seminars in Physical Anthropology: Human Growth and Development GRAD 3-5
Human growth and development. Repeatable to a maximum of 10 cr hrs.

820.05 Seminars in Physical Anthropology: Population Genetics GRAD 3-5
Population genetics. Repeatable to a maximum of 10 cr hrs.

820.06 Seminars in Physical Anthropology: Biological Distance GRAD 3-5
Biological distance. Repeatable to a maximum of 10 cr hrs.

820.11 Seminars in Physical Anthropology: Biocultural Adaptations GRAD 3-5
Biocultural adaptations. Repeatable to a maximum of 10 cr hrs.

820.12 Seminars in Physical Anthropology: Primate Anatomy GRAD 3-5
Primate anatomy. Repeatable to a maximum of 10 cr hrs.

820.16 Seminars in Physical Anthropology: Biomedical Anthropology GRAD 3-5
Biomedical anthropology. Repeatable to a maximum of 10 cr hrs.

820.17 Seminars in Physical Anthropology: Biocultural Medical Anthropology GRAD 5
Explores human reproduction from a biocultural and ecological perspective. Repeatable to a maximum of 45 cr hrs.
820.18 Seminars in Physical Anthropology: Research Issues in Gerontology
Explores the interface between research and practice issues in gerontology and geriatrics. 5 cr hrs. 3-5 hrs. Open only to students with credit for SocWork 727. Repeatable to a maximum of 45 or hrs. Cross-listed with SocWork 727.

820.24 Seminars in Physical Anthropology: Quantitative Methods
Quantitative methods. Repeatable to a maximum of 10 cr hrs.

820.25 Seminars in Physical Anthropology: Quantitative Methods II: Advanced
Quantitative Methods II: Advanced. ** Repeatable to a maximum of 10 cr hrs.

820.30 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. 13 cr hrs. Repeatable to a maximum of 45 cr hrs.

827 Writing and Publishing in Anthropology
Advanced seminar in production and publication of professional literature in anthropology. Au, Wi, Sp Qtrs. 5 cr hrs. Open only to students in Anthrop grad program.

828 Writing Research Proposals in Anthropology
Advanced seminar in constructing and submitting proposals for funded research in anthropology.

830.01 Seminars in Prehistory: Archeology of High Civilizations
Archeology of high civilizations. Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 10 cr hrs.

830.02 Seminars in Prehistory: Old World History
Old world history. Repeatable to a maximum of 10 hours.

830.03 Seminars in Prehistory: North American Archaeology
North American archaeology. Repeatable to a maximum of 10 hours.

830.04 Seminars in Prehistory: Seminar in the Archaeology of the Ancient Near East
Examines anthropological approaches to archaeological remains of 50,000 years of diverse cultures in the Near East from the first humans to the first empires. Au Qtr. 2.5-12 hr lecture, 1.5-9 hr seminar. Repeatable to a maximum of 30 hours.

830.05 Seminars in Prehistory: Landscape in Anthropology
Landscape in anthropology. Repeatable to a maximum of 30 hours.

830.06 Seminars in Prehistory: Paleoenvironment
Advanced survey of current archaeological research on past human diet, with emphasis on methods. Wi Qtr. Provides graduate-level advanced study of human diet as revealed through the archaeological record.

993.01 Individual Studies: Theory
Theory. Permission of instructor. Repeatable. This course is graded S/U.

993.02 Individual Studies: History
History. Permission of instructor. Repeatable. This course is graded S/U.

993.03 Individual Studies: Anthropological Linguistics
Anthropological Linguistics. Permission of instructor. Repeatable. This course is graded S/U.

993.04 Individual Studies: Research Methods
Research Methods. Permission of instructor. Repeatable. This course is graded S/U.

993.05 Individual Studies: Prehistory
Prehistory. Permission of instructor. Repeatable. This course is graded S/U.

993.06 Individual Studies: Ethnology
Ethnology. Permission of instructor. Repeatable. This course is graded S/U.

993.07 Individual Studies: Physical Anthropology
Physical anthropology. Permission of instructor. Repeatable. This course is graded S/U.
Arabic

104.51 Intermediate Modern Standard Arabic I: Individualized Track
Building on previously acquired functional abilities; using Arabic to express opinion and
feelings; oral interaction in the classroom; reading authentic texts of various genres.
Su, Au, Wi, Sp Qtrs. Prereq: Grade of B- or above in 103.01, or 5 cr hrs in 103.51, or
permission of instructor. Repeatable to a maximum of 5 cr hrs. Not open to native speakers of
this language through regular course enrollment or EM credit. GEC for lang course. Students complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with
90% proficiency required for advancement.
151.51 Basic Colloquial Arabic: Individualized Track
Introduction to phonology and grammar of the spoken language of educated urbanites of the
Eastern Arab world.
Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 5 cr hrs. Not open to students with credit for 106 or 151 or 201. Does not satisfy ASC foreign language requirement.
200.01 Arabic Grammar I
UGRD 5
Accelerated introduction to the structure of modern standard and classical Arabic; phonology,
morphology, and syntax, with emphasis on development of reading comprehension skills.
Prereq: 104. Not open to students with credit for 402 or 400.01.
200.02 Arabic Grammar II
UGRD 5
Continuation of 200.01 with emphasis on the grammatical analysis and comprehension of
authentic texts selected from different periods and genres.
Prereq: 200.01 or permission of instructor. Not open to students with credit for 400.02.
205.01 Intermediate Modern Standard Arabic II
UGRD 5
Initiating and sustaining communication; reading and understanding short authentic passages;
and writing to express many language functions.
Prereq: 104.01 or 5 cr hrs of 104.51. Students must register for and complete 5 cr hrs during the qtr.
205.51 Intermediate Modern Standard Arabic II: Individualized Track
Initiating and sustaining communication; reading and understanding short authentic passages;
and writing to express many language functions.
Su, Au, Wi, Sp Qtrs. Prereq: Grade of B- or above in 104.01, or 5 cr hrs of 104.51, or
permission of instructor. Repeatable to a maximum of 5 cr hrs. Students register for and
complete 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with
90% proficiency at the level of 50% required for advancement.
241 Culture of the Contemporary Arab World
UGRD 5
A general survey and examination of the socio-cultural structure of the modern Arab world.
241H (honors) may be available. Taught in English. GEC arts and hums cultures and ideas and social diversity - international issues (Global) course.
241H Culture of the Contemporary Arab World
UGRD 5
A general survey and examination of the socio-cultural structure of the modern Arab world.
Prereq: Honors program or permission of department or instructor. Taught in English. GEC arts and hums cultures and ideas and social diversity - international issues (Global) course.
293 Individual Studies
UGRD 1-15
Individual Studies.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept. Repeatable to a maximum of 30 cr hrs.
This course is graded S/U.
294 Group Studies
UGRD 1-15
Group Studies.
Au, Wi, Sp Qtrs. Prereq: Written permission of dept. Repeatable to a maximum of 30 cr hrs.
367 Issues in Arab-American Culture, Society, and Literature
UGRD 5
Discussion, analysis, and writing about issues relating to Arab-American culture, society, and
literature within the context of social diversity in the United States. Prereq: English 110 or 111 or equiv, and soph standing or above. GEC second writing and arts and hums cultures and ideas and social diversity in the US course.
371 Classical and Medieval Arabic Literature in Translation
UGRD 5
Reading and analysis of major works of Arabic literature from the 5th to the 17th centuries
including classical poetry, the Qur'an, and the Arabian Nights. Not open to students with credit for 271 and 272. GEC arts and hums lit and social diversity - international issues (Global) course.
372 Modern Arabic Literature in Translation
UGRD 5
Reading and analysis of representative works of the 19th and 20th centuries; by contemporary
women authors.
Prereq: English 110 or 111 or equiv. Not open to students with credit for 273 or WGSSt 372. Cross-listed in WGSSt. GEC arts and hums lit and social diversity - international issues (Global) course.
372H Modern Arabic Literature in Translation
UGRD 5
Reading and analysis of representative works of the 19th and 20th centuries; by contemporary
women authors.
Prereq: Honors program or permission of department or instructor; English 110 or 111 or equiv.
Not open to students with credit for 273 or WGSSt 372. Cross-listed in WGSSt. GEC arts and hums lit and social diversity - international issues (Global) course.
375 The Arabian Nights
UGRD 5
Readings from The Arabian Nights; the history of the text, translations and literary and
 cinematic adaptations.
Wi Qtr. Prereq: English 110. GEC arts and hums lit course.
377 Contemporary Folklore in the Arab World
UGRD 5
Study of contemporary folklore of the Arab world, including verbal art, material culture, visual
self-presentation, and performance.
Prereq: English 110. Not open to students with credit for CompStd 377. Cross-listed in Comparative Studies. GEC arts and hums cultures and ideas and social diversity - international issues (Global) course.
401 Intermediate Literary Arabic Reading
UGRD 5
Developing reading skills through reading adapted and authentic Arabic texts; selections reflect
cultural and literary aspects of Arab-Islamic civilization.
Prereq: 205 or permission of instructor.
403 Intermediate Arabic Conversation and Composition
UGRD 5
Practice in aural comprehension, conversation, and controlled compositions on various aspects
of Arabic culture.
Prereq: 256. Not open to students with credit for 604.
411 Colloquial Arabic 1
UGRD 5
Introduction to the phonology and grammar of the everyday spoken language used in the
Eastern Arab world.
Wi Qtr. Prereq: 104.
412 Colloquial Arabic 2
UGRD 5
Continued study of the phonology and grammar of the everyday spoken language used in the
Eastern Arab world.
Sp Qtr. Prereq: 411.
420 Media Arabic
UGRD 5
Introduction to news media in Arabic.
Prereq: 401.
501 Intermediate Literary Arabic 3
UGRD 5
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.
Wi Qtr. Prereq: 401 or permission of instructor.
603 Advanced Arabic Conversation and Composition
UGRD 5
Intensive practice in speaking and writing Arabic at an advanced level based on contemporary
literary usage; conducted entirely in Arabic.
Prereq: 501 or permission of instructor. Not open to students with credit for 601.
608 Advanced Arabic Grammar and Stylistics
UGRD 5
Advanced discussion of Arabic morphology and syntax, with readings from both modern and
classical texts from various genres.
Wi Qtr. Prereq: 603 or permission of instructor.
610 Introduction to Arabic Linguistics
UGRD 5
An introduction to the structure of the Arabic language, both spoken and written.
Prereq: 193 or 152, and Linguist 601, or permission of instructor.
611 History of the Arabic Language
UGRD 5
Survey of the evolution of the Arabic language in its cultural and historical setting.
Prereq: Permission of instructor. GEC third writing course.
615 Translation: Theory and Practice
UGRD 5
Examination of some general guidelines for translating from Arabic to English or from English to
Arabic, depending on the first language of the student.
Prereq: Permission of instructor. Advanced reading proficiency in second language.
621 Origin and Development of Arabic-Islamic Concepts
UGRD 5
An examination of Arabic-Islamic terminology.
Au, Wi, Sp Qtrs. Prereq: 401 or permission of instructor.
626 Introduction to the Arabic Qur'an
UGRD 5
A linguistic, literary, and cultural analysis of selected chapters from the Qur'an.
Prereq: 403.
627 Classical Arabic Poetry
UGRD 5
Selected readings from classical and medieval Arabic poetry; Arabic metrics and literary theory.
Prereq: 403.
628 Classical Arabic Prose
UGRD 5
Selected readings reflecting the evolution of Arabic prose literature from its origins to the late
Abbasid period.
Prereq: 403.
651 Contemporary Arabic Prose Fiction
UGRD 5
Reading and analysis of short stories and novels representative of major developments and
trends of the 20th century.
Prereq: 403. Not open to students with credit for 622 or 625.
652 Contemporary Arabic Poetry and Drama UGRD 5
Reading and analysis of plays and poems representative of major developments and trends of the 20th century.
Prereq: 403. Not open to students with credit for 623 or 624.

671 The Qur'an in Translation UGRD 5
An introduction, in English, to the literary, religious, and cultural implications of the fundamental Book of Arabic literature and of Islamic civilization.

672 Arabic Folk Narrative in Translation UGRD 5
Literary and cultural aspects of 1001 Nights and other popular narratives (epics, legends, folktales) in the Arab world.

692 Workshop UGRD 1-9
Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it.
Su Qtr. Arr. Prereq: Teaching experience and written permission of workshop director.
Repeatable to a maximum of 27 cr hrs. This course is graded S/U.

693 Individual Studies UGRD 1-5
Individual Studies.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

694 Group Studies UGRD 1-15
Group Studies.
Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

697 Study at a Foreign Institution UGRD 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This course is Progress (P) graded. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

710 Studies in Arabic Linguistics UGRD 5
Advanced analytical study of synchronic, diachronic, sociolinguistic, and dialectal topics and problems.
Prereq: 610 or 611 or permission of instructor. Repeatable to a maximum of 20 cr hrs.

721 Studies in Arabic Poetry UGRD 5
Advanced study of specific poetic periods, figures, and/or topics involving extensive reading and discussion of appropriate primary and secondary source materials.
Prereq: 10 cr hrs of Arabic literature at the 600 level or equiv. Repeatable to a maximum of 15 cr hrs.

722 Studies in Arabic Prose UGRD 5
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: 10 cr hrs of Arabic literature at the 600 level or equiv. Repeatable to a maximum of 20 cr hrs.

783H Honors Research UGRD 3-5
Offers undergraduates with special aptitudes a greater opportunity to do independent study and research than is possible in normal course work.
Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the Arabic courses and an average of B in the remainder; permission of the instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee.
Repeatable to a maximum of 15 cr hrs. At least 2 quarters are required of candidates for the degree BA with distinction in Arabic. Failure to receive a mark of S in this course is a disqualification for special honors. This course is graded S/U.

801 Teaching Arabic at the College Level GRAD 5
Methods and techniques for the teaching of Arabic at the college level.
Au Qtr. 2-wk intensive workshop followed by 1.2-hr cl weekly. Prereq: TA in NELC or permission of instructor. For students enrolled in this course, the minimum number of hrs required for graduation is increased by 5 cr hrs.

811 Seminar in Arabic Studies GRAD 5
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 20 cr hrs. Preparation of major research paper is required.

998 Research in Arabic GRAD 1-25
Research for thesis purposes only.
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

Architecture

100 Architecture Survey UGRD 1
Introduction to the University, the Knowlton School of Architecture and the professions of architecture, city and regional planning and landscape architecture.
Au, Wi, Sp Qtrs. 2 cl. Cross-listed in Landscape Architecture.

100H Honors Architecture Survey UGRD 1
Honors introduction to the University, the Knowlton School of Architecture and the professions of architecture, city and regional planning and landscape architecture.
Au, Wi, Sp Qtrs. 2 cl. Prereq: Honors program or permission of department or instructor.

200 Outlines of Architecture and Landscape Architecture UGRD 3
Introduction to the disciplines of architecture and landscape architecture with an emphasis upon the physical artifact and its formal and cultural context.
Su, Au, Wi, Sp Qtrs. 3 cl. Not open to students with credit for LArch 200. Cross-listed in Landscape Architecture. Required for students intending to major in arch. VPA Admis Cond course.

200H Honors Outlines of Architecture and Landscape Architecture UGRD 3
Honors introduction to the disciplines of architecture and landscape architecture with an emphasis upon the physical artifact and its formal and cultural context.
Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: Honors program or by permission of department or instructor. Not open to students with credit for LArch 200. Required for students intending to major in Arch VPA Admis Cond course.

201 Introduction to Architectural History UGRD 3
Introduction to architecture, emphasis on three-dimensional qualities of complex architectural form and space as determined by cultural history.
3 cl. Not open to 3rd and 4th year arch students. VPA Admis Cond course.

202 Introduction to Basic Design in Architecture and Landscape Architecture UGRD 5
Introduction to basic design; problem solving techniques; language of design; exploration of space and object through graphic exercises, drawings and models.
8 lab hrs. Not open to students with credit for LArch 151. Cross-listed in Landscape Architecture as 151. VPA Admis Cond course.

241 Architectural Design I UGRD 6
Introduction to architectural design including issues of human occupation and movement, space, structure, material and site, with an emphasis on developing representational and conceptual skills.
Au Qtr. 2 cl, 10 lab hrs. Prereq: 200 and 202; concur 271; Math 150 and 117 or equiv; Physics 111 or equiv; Physics 112 recommended and submission of portfolio based on 202. Admission to AHR, who have completed 200, 202 with a 2.75 GPA and have earned a 2.75 GPA with at least 45 earned hrs; Admission is competitive.

242 Architectural Design II UGRD 6
Continuation of 241.
Wi Qtr. 2 cl, 10 lab hrs. Prereq: 241, 271; concur 272. Open only to students enrolled in Arch.

243 Architectural Design III UGRD 6
Continuation of 242.
Sp Qtr. 2 cl, 10 lab hrs. Prereq: 242, 272; concur 273. Open only to students enrolled in Arch.

271 Architectural Graphics I UGRD 3
Course sequence introducing techniques of representation, including freehand and constructed 3-D drawing, computer modeling and graphics for design.
Au Qtr. 2 cl, 6 lab hrs. Concur: 241. Open only to students enrolled in Arch. GEC arts and humi VPA course.

272 Architectural Graphics II UGRD 3
Continuation of 271.
Wi Qtr. 2 cl, 6 lab hrs. Prereq: 271; concur 242. Open only to students enrolled in Arch.

273 Architectural Graphics III UGRD 3
Continuation of 272.
Sp Qtr. 2 cl, 6 lab hrs. Prereq: 272; concur 243. Open only to students enrolled in Arch.

293 Individual Studies in Architecture UGRD 1-5
Designed for students who desire to pursue, individually, special studies in the discipline.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

294 Group Studies in Architecture UGRD 1-5
Designed for students who desire to pursue, in a group, special studies in the discipline. 294H (honors) may be available.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 15 cr hrs.

294H Group Studies UGRD 1-5
Designed for students who desire to pursue, in a group, special studies in the discipline.
Su, Au, Wi, Sp Qtrs. Prereq: Honors program and permission of department or instructor. Repeatable to a maximum of 15 cr hrs.

314 Architectural Design IV UGRD 6
Continued development of architectural design skills through exploration and integration of site, program and construction in a series of design problems.
Au Qtr. 2 cl, 10 lab hrs. Prereq: 243; concur 626. Open only to students enrolled in Arch.

342 Architectural Design V UGRD 6
Continuation of 341.
Wi Qtr. 2 cl, 10 lab hrs. Prereq: 341; concur 627. Open only to students enrolled in Arch.

343 Architectural Design Options Studio UGRD 6
Studio explorations of architectural design and research. Topics vary.
Sp Qtr. 1 cl, 10 lab hrs. Prereq: 342 or permission of instructor. Open only to students enrolled in Arch. Cross-listed with 443.
30 Architecture

426 Introduction to Architectural Structures UGRD 4
Survey of statics and strength of materials; survey of structural systems with emphasis on integrated structural behavior and selection of the best structural system.
Au Qtr. 4 cl. Prereq: Physics 111. BERLAW/GEC course. Meets Natural Science GEC with Physics 111.

441 Architectural Design VI UGRD 6
Capstone studio: design of a complex building on an urban site; emphasis on historical, cultural and social implications of architecture in addition to program, and building technology.
Au Qtr. 2 cl, 10 lab hrs. Prereq: 342. Open only to students enrolled in Arch. 441 and 442 must be taken in sequence in the same year.

442 Architectural Design VII UGRD 6
Continuation of 441.
Wi Qtr. 1 cl, 10 lab hrs. Prereq: 441 or permission of Undergrad Committee. Open only to students enrolled in Arch. 441 and 442 must be taken in sequence in the same year.
Meets Capstone requirement with 441.

443 Architectural Design Options Studio UGRD 6
Studio explorations of architectural design and research. Topics vary.
Sp Qtr. 1 cl, 10 lab hrs. Prereq: 342 or 442 or permission instructor. Open only to students enrolled in Arch. Cross-listed with Arch 343.

444H Special Honors Design Studies UGRD 6
Studio for group and/or individual design studies.
Au, Wi, Sp Qtr. Arr. Prereq: 4th yr standing in Arch with a minimum cumulative p-hr ratio of 3.20; honors program or permission of department or instructor. Accepted students may substitute this course for 441, 442, or 443.

600 History of Ancient and Medieval Architecture UGRD 4
Survey of history of architecture of Mesopotamia, Egypt, Greece, and Rome; includes early Christian, Byzantine, Romanesque, and Gothic periods; includes historical inquiry, physical, and cultural influences, theories, and analysis techniques. 600H (honors) may be available.
2 2-hr cl. Open to majors and non-majors.

600H Honors History of Ancient and Medieval Architecture UGRD 4
Honors survey of history of architecture of Mesopotamia, Egypt, Greece, and Rome; includes early Christian, Byzantine, Romanesque, and Gothic periods; includes historical inquiry, physical, and cultural influences, theories, and analysis techniques.
2 2-hr cl. Prereq: Honors program or permission of department or instructor. Open to majors and non-majors.

601 History of Architecture: Renaissance to Crystal Palace UGRD 4
Survey of history of architecture of Renaissance, Mannerist, Baroque, Enlightenment periods to the 19th century; includes historical inquiry, physical and cultural influences, theories and analysis techniques.
601H (honors) may be available.
2 2-hr cl. Open to majors and non-majors.

601H Honors History of Architecture: Renaissance to Crystal Palace UGRD 4
Honors survey of history of architecture of Renaissance, Mannerist, Baroque, Enlightenment periods to the mid-19th century; includes historical inquiry, physical and cultural influences, theories and analysis techniques.
2 2-hr cl. Prereq: Honors program or permission of department or instructor. Open to majors and non-majors.

602 History of Modern Architecture UGRD 4
Survey of history of modern architecture; includes historical inquiry, physical and cultural influences, theories and analysis techniques.

603 Topics in Architectural History and Theory UGRD 3
Investigation of topics in architectural history and theory.
3 cl. Prereq: Permission of instructor required. Repeatable to a maximum of 9 cr hrs. Open to majors and non-majors.

603H Honors Topics in Architectural History and Theory UGRD 3
Honors investigation of topics in architectural history and theory.
3 cl. Prereq: Honors program and permission of instructor. Repeatable to a maximum of 9 cr hrs. Open to majors and non-majors.

604 History and Preservation of 19th- and 20th-Century American Architecture UGRD 3
Investigation of 19th- and 20th-century American architecture with emphasis upon issues of preservation and conservation.
3 cl. Prereq: Grad standing or 4th yr standing in arch or permission of instructor.

605 Research Methods in Architectural History and Preservation UGRD 3
A survey of literary and physical research techniques in architectural history and preservation; identification and recording of historic buildings; field work in inventory techniques.
3 cl. Prereq: Grad standing or 4th yr standing in arch or permission of instructor.

606 Architectural Preservation: Administration and Practice UGRD 3
An outline of regulations, laws, economic incentives, funding sources, and technical/design guidelines as they affect architectural preservation.
Wi Qtr. 4 cl. Prereq: 4th yr standing or grad standing in Arch or permission of instructor.

609 Evolution of the English Architectural Environment UGRD 3
Survey of the development of the English architecture in response to the physical characteristics of the island and the changing social, political, and economic context.
3 cl. Not open to students with credit for 309. Open to majors and non-majors.

610 Survey of Architectural Theory UGRD 3
Survey of architectural theory which reviews the history of architecture while searching for reinterpretations, strategies, structures, and precedents for theory in Western intellectual history.
3 cl. Pre req: 301, 302, 303, 304, 305, or 606, 601, 602, and 603, or permission of instructor. Not open to students with credit for 401.

616 Introduction to Architectural Structures GRAD 3
Survey of statics and strength of materials; survey of structural systems with emphasis on integrated structural behavior and selection of best structural systems.
Au Qtr. 2 2-hr cl. Open only to students in 3+ Master of Architecture Program.

617 Wood and Steel Structure UGRD 3
Principles, elements, computations, detailing, and connections for structural wood and steel.
Wi Qtr. 3 cl. Prereq: 426 or 416. Not open to students with credit for 427.

618 Masonry and Concrete Structure UGRD 3
Principles, elements, computations, detailing, and connections for structural masonry and concrete.
Sp Qtr. 3 cl. Prereq: 427 or 618. Not open to students with credit for 428.

626 Introduction to Building Construction UGRD 3
Introduction to construction materials and method with an emphasis on wood light frame and timber construction.
Au Qtr. 3 cl, 2 hrs lab. Prereq: Arch 3rd yr or permission of instructor. Concour 341 (U only).

627 Building Construction I UGRD 3
Introduction to construction materials and method with an emphasis on masonry and concrete construction.
Wi Qtr. 3 cl, 2 hrs lab. Prereq: 626. Concour 342 (U only).

628 Building Construction II UGRD 3
Introduction to construction materials and method with an emphasis on glass, steel, and curtain wall construction.
Sp Qtr. 3 cl, 2 hrs lab. Prereq: 627.

630 Computer Graphics for Architectural Design UGRD 3
Introduction to computer-aided architectural design for studio uses; theory of architectural modeling and design applications using commercially available software.
1 2-hr cl, 1 2-hr lab. Prereq: Admission to School of Architecture Graduate Program or permission of instructor.

641 Accelerated Architectural Design I UGRD 6
Architectural analysis and problem solving for students in the 3+ Architecture Graduate Program.
Au Qtr. Prereq: Admission to the 3+ Master of Architecture Program.

642 Accelerated Architectural Design II UGRD 6
Continuation of 641.
Wi Qtr. Prereq: 641. Open only to students in the 3+ Master of Architecture Graduate Program.

643 Accelerated Architectural Design III UGRD 6
Continuation of 642.
Sp Qtr. Prereq: 642. Open only to students in the 3+ Master of Architecture Graduate Program.

660 Topics in Computing for Architectural Design UGRD 4
Investigation of computer techniques and usage as they relate to architecture. Topics vary.
Prereq: Arch 3rd yr and 273 or 630, and permission of instructor. Repeatable to a maximum of 12 cr hrs.

661 Environmental, Mechanical and Electrical Systems in Architecture I UGRD 3
Environmental, mechanical, electrical, lighting systems for architecture. Includes: heat loss/gain, heating/cooling, energy usage, acoustics/noise control, water, sanitary, storm water systems, fire protection, daylighting.
Au Qtr. 3 cl. Prereq: Physics 112, enrollment in Graduate School, or permission of instructor. One of 3 courses sequenced with 662, 663.

662 Environmental, Mechanical, and Electrical Systems in Architecture II UGRD 3
Environmental, mechanical, electrical, lighting systems for architecture. Includes: heat loss/gain, heating/cooling, energy usage, acoustics/noise control, water, sanitary, storm water systems, fire protection, daylighting.
Wi Qtr. 3 cl. Prereq: Physics 112, enrollment in Architecture, or permission of instructor. One of 3 courses sequenced with 661, 663.
663 Environmental, Mechanical and Electrical Architecture UGRD 3
Systems in Architecture III
Environmental, mechanical, electrical, lighting systems for architecture. Includes: heat loss/gain, heating/cooling, energy usage, acoustics/noise control, water, sanitary, storm water systems, fire protection, daylighting.
Sp Qtr. 3 cl. Prereq; Physics 112, enrollment in Architecture, or permission of instructor. One of 3 courses sequenced with 661, 662.

671 Social and Psychological Influences on Architecture UGRD 3
Survey of the relationships between human-made surroundings and selected social/psychological processes basic to human functions; the application of this material to programming, design, and evaluations of settings for human use.
3 cl. Prereq; Arch 3rd yr standing or above.

672 Economic Influences on Architecture UGRD 3
Survey of economic issues and methods relevant to practice of architecture including the building delivery systems, market analysis, computation of present, future and annual worth; life cycle costing, depreciation, and tax implications.
3 cl. Prereq; Arch 3rd yr standing or above.

693 Individual Studies in Architecture UGRD 1-5
For students majoring in arch desiring to pursue special studies not offered in the fixed curriculum.
Su, Au, Wi, Sp Qtrs. Prereq; Permission of instructor and completion of dept independent study form. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

694 Group Studies in Architecture UGRD 1-5
For students majoring in arch desiring to pursue special studies not offered in the fixed curriculum.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor and completion of dept independent study form. Repeatable to a maximum of 15 cr hrs.

698.01 Study Tour: Domestic UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq; Permission of instructor. Repeatable for different titled study tours only. Repeatable.

698.02 Study Tour: Foreign UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq; Permission of instructor. Repeatable for different titled study tours only. Repeatable.

698.03H Study Tour: Honors UGRD 1-15
Honors. Repeatable.

698.04 Study Abroad Preparatory Course UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq; Permission of instructor. Repeatable for different titled study tours only.

698.04H Study Abroad Preparatory Course, Honors UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Honors program and permission of instructor. Repeatable for different titled study tours only.

700 Allied Arts and Issues UGRD 3
Analysis of arts and issues related to architecture. Topics vary.
3 cl. Prereq; Permission of instructor. Repeatable to a maximum of 9 cr hrs.

701 History of Architectural Theory UGRD 3
Survey of architectural theories as stated by architects, historians, and architectural critics.
3 cl. Prereq; Arch 4th yr standing or permission of instructor.

724 Structural Design in Architecture UGRD 3
Analysis and design of structural elements and systems; emphasis on integration of structures and building design.
3 cl. Prereq; 426 or 618 or permission of instructor.

751 Practice of the Design Professions I UGRD 3
History of professions and their clients; the professional's interaction with society and government substantive aspects of practice, including organization and communication; legal aspects of construction.
Au Qtr. 3 cl. Prereq; Grad standing in Arch or permission of instructor.

752 Practice of the Design Professions II UGRD 3
Management of construction contracts; bonds and insurance operational procedures during negotiation and construction phases; arbitration, office and project case studies.
Sp Qtr. 3 cl. Prereq; Grad standing in Arch or permission of instructor.

783H Honors Research UGRD 3
Research and investigation for each student with individual conferences resulting in a proposal, objectives, bibliography, and other research.
Art. Prereq; 4th yr standing in Arch with a minimum cumulative gpa ratio of 3.20, honors program or permission of department or instructor. This course is graded S/U.

784H Honors Project UGRD 6
Development and promulgation of an honors project as proposed in H783.
Art. Prereq: 783H; 4th yr standing in Arch with a minimum cumulative gpa ratio of 3.20; honors program or permission of department or instructor. Accepted students may substitute this course for 443. Completion and acceptance of the project is required for graduation with distinction in BS Arch.

801 Architectural Theory: Criticism GRAD 3
Fundamentals of the formal analysis of persistent architectural typologies.
Au Qtr. 3 cl. Prereq; Grad standing in Arch; concur: 841.

802 Architectural Theory: Tectonics GRAD 3
Investigations into the tectonic strategies of 20th century architecture.
Wi Qtr. 3 cl. Prereq; Grad standing in Arch; concur: 842.

803.01 Seminar: Architectural Issues I GRAD 3
Investigations of Contemporary Architectural Theory.
Prereq; 802. Students select two of the 803 decimal subdivisions. Repeatable to a maximum of 6 cr hrs.

803.02 Seminar: Architectural Issues II GRAD 3
Investigations of Contemporary Architectural Theory.
Prereq; 802. Students select two of the 803 decimal subdivisions. Repeatable to a maximum of 6 cr hrs.

803.03 Seminar: Architectural Issues III GRAD 3
Investigations of Contemporary Architectural Theory.
Prereq; 802. Students select two of the 803 decimal subdivisions. Repeatable to a maximum of 6 cr hrs.

810 Baumer Seminar GRAD 3
Contemporary strategies in architectural practice and criticism as elaborated upon by significant architects, designers, theoreticians and historians. Taught by Baumer Distinguished Visiting Professor.
Sp Qtr. Prereq; Permission of Graduate Studies Committee and 6th yr grad standing. Repeatable to a maximum of 9 cr hrs.

841 Advanced Architectural Design I GRAD 6
Development of small-scale residential and institutional projects with an emphasis on historical precedent.
Au Qtr. 8 lab hrs. Concurs: 801.

842 Advanced Architectural Design II GRAD 6
Continuation of 841. Programs and sites of increasing complexity with additional emphasis on tectonic strategies.
Au Qtr. 8 lab hrs. Concurs: 802.

844.01 Architecture Studio: Advanced Design I GRAD 6
Final graduate design studios devoted to the development of creative, technical and critical strategies in contemporary architectural practice.
Au, Wi, Sp Qtrs. Prereq: 602 and 842. Repeatable to a maximum of 24 cr hrs.

844.02 Architecture Studio: Advanced Design II GRAD 6
Final graduate design studios devoted to the development of creative, technical and critical strategies in contemporary architectural practice.
Au, Wi, Sp Qtrs. Prereq: 602 and 842. Repeatable to a maximum of 24 cr hrs.

844.03 Architecture Studio: Advanced Design III GRAD 6
Final graduate design studios devoted to the development of creative, technical and critical strategies in contemporary architectural practice.
Au, Wi, Sp Qtrs. Prereq: 802 and 842. Repeatable to a maximum of 24 cr hrs.

844.04 Architecture Studio: Advanced Design IV GRAD 6
Final graduate design studios devoted to the development of creative, technical and critical strategies in contemporary architectural practice.
Au, Wi, Sp Qtrs. Prereq: 802 and 842. Repeatable to a maximum of 24 cr hrs.

893 Individual Studies in Architecture GRAD 1-6
Individual Studies in Architecture.
Su, Au, Wi, Sp Qtrs. Prereq; Grad standing in Arch, permission of instructor, and completion of dept independent study form. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

894 Group Studies in Architecture GRAD 1-6
Group Studies in Architecture.
Su, Au, Wi, Sp Qtrs. Prereq; Grad standing in Arch, permission of instructor. Repeatable to a maximum of 18 cr hrs.

899 Interdepartmental Seminar GRAD 1-5
See Interdepartmental Seminars.
Su, Au, Wi, Sp Qtrs.

999 Research in Architecture GRAD 1-18
Research for thesis purposes only.
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.
<table>
<thead>
<tr>
<th>Course Number</th>
<th>Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Concepts and Issues in Art</td>
<td>UGRD 2</td>
<td>An orientation for new art students and a survey of art making with an emphasis on contemporary works.</td>
</tr>
<tr>
<td>205</td>
<td>Beginning Drawing</td>
<td>UGRD 5</td>
<td>An introduction to basic freehand drawing, exploration of a range of drawing methods, media, concepts; emphasis on drawing from observation. 205H (honors) may be available.</td>
</tr>
<tr>
<td>206</td>
<td>Visual Studies: Two Dimensional Art</td>
<td>UGRD 5</td>
<td>Basic concepts of two-dimensional art dealing with visual structure, process, content, and invention. 206H (honors) may be available.</td>
</tr>
<tr>
<td>207</td>
<td>Visual Studies: Three-Dimensional Art</td>
<td>UGRD 5</td>
<td>Basic concepts of three-dimensional art dealing with the organization of space and form, using a variety of materials, processes, tools.</td>
</tr>
<tr>
<td>208</td>
<td>Visual Studies: Four Dimensional Art and Recorded Time</td>
<td>UGRD 3</td>
<td>Introduction to basic concepts of real time and recorded time-based artworks using a variety of processes and media.</td>
</tr>
<tr>
<td>299</td>
<td>BA Portfolio Review</td>
<td>UGRD 0</td>
<td>Successful BA portfolio review.</td>
</tr>
<tr>
<td>300.01</td>
<td>Introduction to Photography: Film Camera</td>
<td>UGRD 5</td>
<td>Introduction to photographic theory, practice, and aesthetics with image production and critique.</td>
</tr>
<tr>
<td>300.02</td>
<td>Introduction to Photography: Digital Camera</td>
<td>UGRD 5</td>
<td>Introduction to photographic theory, practice, and aesthetics with image production and critique.</td>
</tr>
<tr>
<td>300.02H</td>
<td>Digital Camera</td>
<td>UGRD 5</td>
<td>Introduction to photographic theory, practice, and aesthetics with image production and critique.</td>
</tr>
<tr>
<td>307</td>
<td>Beginning Sculpture</td>
<td>UGRD 5</td>
<td>An introduction to the principles of sculpture, emphasizing basic forming processes and media.</td>
</tr>
<tr>
<td>330</td>
<td>Introduction to Glassblowing</td>
<td>UGRD 5</td>
<td>Introduction to glass as a fluid material for artistic expression; emphasis on the development of original imagery made from molten glass.</td>
</tr>
<tr>
<td>331</td>
<td>Introduction to Printmaking</td>
<td>UGRD 5</td>
<td>Introduction to printmaking concepts, equipment, and process.</td>
</tr>
<tr>
<td>332</td>
<td>Introduction to Glass Forming</td>
<td>UGRD 5</td>
<td>Introduction to principles and practice of making kiln formed glass art, with a focus on techniques of fusing, bending, and casting colored glass.</td>
</tr>
<tr>
<td>340</td>
<td>Fundamentals of Ceramic Art: Handforming</td>
<td>UGRD 5</td>
<td>Introduction to the art phases of the ceramic field; laboratory practice in the hand forming process. 340H (honors) may be available.</td>
</tr>
<tr>
<td>341</td>
<td>Fundamentals of Ceramic Art: Wheel</td>
<td>UGRD 5</td>
<td>Introduction to the ceramic arts through the use of the potter's wheel with lectures covering a broad survey of the field of ceramics.</td>
</tr>
<tr>
<td>340H</td>
<td>Fundamentals of Ceramic Art: Handforming</td>
<td>UGRD 5</td>
<td>Introduction to the art phases of the ceramic field; laboratory practice in the hand forming process. 340H (honors) may be available.</td>
</tr>
<tr>
<td>350</td>
<td>Digital Image Manipulation I</td>
<td>UGRD 5</td>
<td>Introduction to creating and manipulating graphic images using Photoshop; includes input/output of digital work as applies to artists.</td>
</tr>
<tr>
<td>353</td>
<td>Art of Podcasting</td>
<td>UGRD 5</td>
<td>Introduction to the concepts and techniques of producing, editing, publishing and critiquing personal and artistic video/audio content as related to the medium of podcasting.</td>
</tr>
<tr>
<td>359</td>
<td>Art of Printmaking</td>
<td>UGRD 5</td>
<td>Introduction to the principles of printmaking, emphasis on the development of original imagery made from molten glass.</td>
</tr>
<tr>
<td>370</td>
<td>Beginning Life Drawing</td>
<td>UGRD 5</td>
<td>Drawing from the human figure; discussion of drawing as related to significant traditions; lectures and demonstrations.</td>
</tr>
<tr>
<td>372</td>
<td>Visual Studies: Color</td>
<td>UGRD 5</td>
<td>An introduction to seeing and using color for all disciplines; projects deal with color organization phenomena, and interaction.</td>
</tr>
<tr>
<td>373</td>
<td>Painting I</td>
<td>UGRD 5</td>
<td>Introductory painting emphasizing fundamentals and their utilization as a basis for individual development; student initially works from still life; subsequent projects increase in complexity.</td>
</tr>
<tr>
<td>374</td>
<td>Painting II</td>
<td>UGRD 5</td>
<td>An introduction to the principles of sculpture, emphasizing basic forming processes and media.</td>
</tr>
<tr>
<td>376</td>
<td>Painting III</td>
<td>UGRD 5</td>
<td>An introduction to the principles of sculpture, emphasizing basic forming processes and media.</td>
</tr>
<tr>
<td>375</td>
<td>Introduction to Printmaking</td>
<td>UGRD 5</td>
<td>Introduction to printmaking concepts, equipment, and process.</td>
</tr>
<tr>
<td>376</td>
<td>Advanced Life Drawing</td>
<td>UGRD 5</td>
<td>Advanced life drawing; emphasis on observation and invention.</td>
</tr>
<tr>
<td>377</td>
<td>Advanced Color</td>
<td>UGRD 5</td>
<td>Advanced color; emphasis on understanding and utilizing color in art.</td>
</tr>
<tr>
<td>378</td>
<td>Advanced Composition</td>
<td>UGRD 5</td>
<td>Advanced composition; emphasis on utilizing composition in art.</td>
</tr>
<tr>
<td>379</td>
<td>Advanced Drawing</td>
<td>UGRD 5</td>
<td>Advanced drawing; emphasis on developing drawing skills.</td>
</tr>
<tr>
<td>380</td>
<td>Advanced Painting</td>
<td>UGRD 5</td>
<td>Advanced painting; emphasis on developing painting skills.</td>
</tr>
<tr>
<td>381</td>
<td>Advanced Sculpture</td>
<td>UGRD 5</td>
<td>Advanced sculpture; emphasis on developing sculptural skills.</td>
</tr>
<tr>
<td>382</td>
<td>Advanced Printmaking</td>
<td>UGRD 5</td>
<td>Advanced printmaking; emphasis on developing printmaking skills.</td>
</tr>
<tr>
<td>383</td>
<td>Advanced Glassblowing</td>
<td>UGRD 5</td>
<td>Advanced glassblowing; emphasis on developing glassblowing skills.</td>
</tr>
<tr>
<td>384</td>
<td>Advanced Ceramics</td>
<td>UGRD 5</td>
<td>Advanced ceramics; emphasis on developing ceramic skills.</td>
</tr>
<tr>
<td>385</td>
<td>Advanced Digital Image</td>
<td>UGRD 5</td>
<td>Advanced digital image; emphasis on developing digital image skills.</td>
</tr>
<tr>
<td>386</td>
<td>Advanced Print</td>
<td>UGRD 5</td>
<td>Advanced print; emphasis on developing print skills.</td>
</tr>
<tr>
<td>387</td>
<td>Advanced Sculpture</td>
<td>UGRD 5</td>
<td>Advanced sculpture; emphasis on developing sculpture skills.</td>
</tr>
<tr>
<td>388</td>
<td>Advanced Printmaking</td>
<td>UGRD 5</td>
<td>Advanced printmaking; emphasis on developing printmaking skills.</td>
</tr>
<tr>
<td>389</td>
<td>Advanced Glassblowing</td>
<td>UGRD 5</td>
<td>Advanced glassblowing; emphasis on developing glassblowing skills.</td>
</tr>
<tr>
<td>390</td>
<td>Advanced Ceramics</td>
<td>UGRD 5</td>
<td>Advanced ceramics; emphasis on developing ceramic skills.</td>
</tr>
<tr>
<td>391</td>
<td>Advanced Digital Image</td>
<td>UGRD 5</td>
<td>Advanced digital image; emphasis on developing digital image skills.</td>
</tr>
<tr>
<td>392</td>
<td>Advanced Print</td>
<td>UGRD 5</td>
<td>Advanced print; emphasis on developing print skills.</td>
</tr>
<tr>
<td>393</td>
<td>Advanced Sculpture</td>
<td>UGRD 5</td>
<td>Advanced sculpture; emphasis on developing sculpture skills.</td>
</tr>
<tr>
<td>394</td>
<td>Advanced Printmaking</td>
<td>UGRD 5</td>
<td>Advanced printmaking; emphasis on developing printmaking skills.</td>
</tr>
<tr>
<td>395</td>
<td>Advanced Glassblowing</td>
<td>UGRD 5</td>
<td>Advanced glassblowing; emphasis on developing glassblowing skills.</td>
</tr>
<tr>
<td>396</td>
<td>Advanced Ceramics</td>
<td>UGRD 5</td>
<td>Advanced ceramics; emphasis on developing ceramic skills.</td>
</tr>
<tr>
<td>397</td>
<td>Advanced Digital Image</td>
<td>UGRD 5</td>
<td>Advanced digital image; emphasis on developing digital image skills.</td>
</tr>
<tr>
<td>398</td>
<td>Advanced Print</td>
<td>UGRD 5</td>
<td>Advanced print; emphasis on developing print skills.</td>
</tr>
<tr>
<td>399</td>
<td>Advanced Sculpture</td>
<td>UGRD 5</td>
<td>Advanced sculpture; emphasis on developing sculpture skills.</td>
</tr>
<tr>
<td>400</td>
<td>Second-year Level Production Course</td>
<td>UGRD 5</td>
<td>Second-level production course in black and white and color photography emphasizing technical and aesthetic explorations commenced in 300.</td>
</tr>
<tr>
<td>401</td>
<td>Third-year Level Production Course</td>
<td>UGRD 5</td>
<td>Third-level production course in black and white and color photography emphasizing technical and aesthetic explorations commenced in 300.</td>
</tr>
<tr>
<td>402</td>
<td>Fourth-year Level Production Course</td>
<td>UGRD 5</td>
<td>Fourth-level production course in black and white and color photography emphasizing technical and aesthetic explorations commenced in 300.</td>
</tr>
</tbody>
</table>
401 Photography III UGRD 5
Third-level production course in black and white photography with emphasis in creative explorations including manipulations, through a sustained body of work. 
Au, Wi, Sp Qtrs. 2 3-hr cl. Prereq: 301 or 400. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

440 Intermediate Ceramic Art: Handforming UGRD 5
Studio practice in designing ceramic wares with emphasis on the hand forming processes. 
Wi, Sp Qtrs. 2 3-hr labs, 5 hrs arr. Prereq: 240 or 340 (Au Qtr 2003 and thereafter). Not open to students with credit for 340 prior to Au Qtr 2003. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

442 Intermediate Ceramic Art: Wheel UGRD 5
Intermediate course utilizing potter's wheel as forming process. 
Wi, Sp Qtrs. 2 3-hr labs, 5 hrs arr. Prereq: 242 or 342 (Au 2003 and thereafter). Not open to students with credit for 342 prior to Au Qtr 2003. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

451 Multimedia Authoring UGRD 5
Integration of image, video and sound for the creation of internet art, such as tactical media and identity construction. Technical and aesthetic concepts emphasized. 
Au, Wi, Sp Qtrs. 2 3-hr cl-cls, 5 lec/demos hrs, 5 lab hrs. Prereq: 350 or 450 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

452 3D Computer Sculpture UGRD 5
Study of concepts, aesthetics, procedures, and practice of sculpting on the computer. 
Au, Wi, Sp Qtrs. 2 3-hr cl-cls, 6 lec hrs, 4 lab hrs. Prereq: 350 or 450 or permission of instructor. Repeatable to a maximum of 15 cr hrs. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

455 Holography I UGRD 5
The basic technique of three-dimensional image making; construction of a diode laser and use of this device to make holograms. 455H (honors) may be available. 
Au, Wi, Sp Qtrs. 5 lec/demos hrs, 5 lab hrs. Repeatable to a maximum of 15 cr hrs including cr hrs earned in 455H and Physics 455H.

455H Holography I UGRD 5
The basic technique of three-dimensional image making; construction of a diode laser and use of this device to make holograms. 
Au, Wi, Sp Qtrs. 5 lec/demos hrs, 5 lab hrs. Prereq: Honors program or permission of department or instructor. Repeatable to a maximum of 15 cr hrs. Including cr hrs earned in 455H and Physics 455H. Cross-listed in Physics. GEC arts and hums VPA course.

470 Intermediate Drawing UGRD 5
Intermediate level drawing experience focusing on drawing from observation, exploration of materials and processes and the use of color. 
Au, Wi, Sp Qtrs. 2 3-hr labs, 5 hrs arr. Prereq: 270 (prior to Au Qtr 2003) or 370 (Au Qtr 2003 and thereafter). Not open to students with credit for 370 prior to Au Qtr 2003.

473 Painting UGRD 5
A continuation of 373 emphasizing technical and conceptual fundamentals of painting from observation and abstraction with a focus in spatial relationships in painting. 
Su, Au, Wi, Sp Qtrs. 2 3-hr labs, 9 hrs arr. Prereq: 273, 370, and 372 (prior to Au Qtr 2003); or 372, 373, and 470 (Au Qtr 2003 and thereafter). Not open to students with credit for 373 prior to Au Qtr 2003.

476 Beginning Relief Printmaking UGRD 5
Introduction to the practice and examination of several modes of artistic expression in the relief processes of printmaking. 
Au, Wi, Sp Qtrs. 2 3-hr cl. Prereq: 208, 370 and 375, and HistArt 201 or 202. Not open to students with credit for 376. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

477 Beginning Serigraphy UGRD 5
Introduction to the practice and examination of several modes of artistic expression in the serigraphic processes of printmaking. 
Au, Wi, Sp Qtrs. 2 3-hr cl. Prereq: 208, 370 and 375, and HistArt 201 or 202. Not open to students with credit for 377. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

478 Beginning Intaglio Printmaking UGRD 5
Introduction to practice and examination of several modes of artistic expression in the intaglio processes of printmaking. 
Au, Wi, Sp Qtrs. 2 3-hr cl. Prereq: 208, 370 and 375, and HistArt 201 or 202. Not open to students with credit for 378. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

479 Beginning Lithography UGRD 5
Introduction to the practice and examination of several modes of artistic expression in the lithographic processes of printmaking. 
Au, Wi, Sp Qtrs. 2 3-hr cl. Prereq: 208, 370, and 375, and HistArt 201 or 202. Not open to students with credit for 379. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

480 Construction Sculpture UGRD 5
Exploration of a range of technical and conceptual concerns of sculpture, using wood as a primary material. 
Sp Qtr. 2 3-hr cl. Prereq: 208 and 207, and HistArt 201 or 202. Not open to students with credit for 380. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

481 Metal Fabrication UGRD 5
Introduction to metal fabrication, including casting, forging, and other processes. 
Au, Wi, Sp Qtrs. 2 3-hr cl. Prereq: 307 and HistArt 201 or 202. Not open to students with credit for 381. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

482 Life Sculpture UGRD 5
Aspects of the human form studied in relation to the materials of sculpture; experimentation in a choice of materials: clay, wax, cement, and plaster. 
Au, Wi, Sp Qtrs. 3 3-hr cl, 5 hrs arr. Prereq: 307 and HistArt 201 or 202. Not open to students with credit for 382. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

489 Internship in Art UGRD 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 10 cr hrs. This course is graded SU.

493.09 Individual Studies: Drawing UGRD 2-5
Preliminary studies for students in specialized programs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. Including cr hrs earned in 293.09, or 293.10. This course is graded SU.

493.10 Individual Studies: Painting UGRD 2-5
Preliminary studies for students in specialized programs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. Including cr hrs earned in 293.09 and 293.10. This course is graded SU.

524 Large Format Photography UGRD 5
Advanced still photography course dealing with the mechanics, aesthetics, and psychology of large format photography. 
Sp Qtr. 2 3-hr cl. Prereq: 401 and written permission of instructor. Student must supply 4 x 5 format film. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

531 Color Printing UGRD 5
Introduction to color negative printing, its history, and current aesthetic issues surrounding work in color photography. 
Au Qtr. 2 3-hr cl. Prereq: 401 and written permission of instructor. Film processing supplied by student. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

550 Digital Image Manipulation II UGRD 5
Creation, manipulation and animation of digital imagery including the integration of multiple elements, such as video and audio, into artistic projects. 
Au, Wi, Sp Qtrs. 2 3-hr cl/clabs. Prereq: 452; 350 or 450; and permission of instructor. Repeatable to a maximum of 15 cr hrs.

551 New Media UGRD 5
Approaches to new media, electronic and digital control of objects, projections and sound in interactive installations, performances and exhibits. 
Au, Wi, Sp Qtrs. 2 3-hr cl, 1 lab. Repeatable to a maximum of 15 cr hrs. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

552 Computer Animation I UGRD 5
Introduction to theory and practice of 3D modeling, animation, cinematography and audio as it relates to experimental digital storytelling. 
Au, Wi, Sp Qtrs. 2 3-hr cl, 1 lab. Prereq: 452 and permission of instructor. Repeatable to a maximum of 15 cr hrs. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.
553 Video Art I UGRD 5
Introduction to the creation and analysis of video artwork, including techniques of video capture post production, manipulation and critique within the context of art.
Au, Wi, Sp Qtrs. 1 2-hr lab (2 hrs arranged). Prereq: 200 or 208 or 300.02 or 350 or HistArt 260 or Dance 357 or Theatre 100 or permission of instructor. Repeatable to a maximum of 10 cr hrs.

554 Video Art II UGRD 5
Au, Wi Qtrs. 1 4-hr lab (2 hrs arranged). Prereq: 553, or permission of instructor.

555 Holography II UGRD 5
Expanding the students' knowledge of holographic techniques, including computer generated holography in traditional and experimental artworks.
Au, Wi, Sp Qtrs. 5 lec/demon hrs, 5 lab hrs. Prereq: 455 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

570.01 Special Topics UGRD 5
Special topics in intermediate to advanced drawing materials and processes for personal expression with emphasis on development of analytical and critical skills.
Au, Wi, Sp Qtrs. 2-5 hrs. Prereq: 370 (prior to Au Qtr 2003); or 470 (Au Qtr 2003 and thereafter). Repeatable to a maximum of 10 cr hrs.

570.02 Life Drawing Studio UGRD 5
Intermediate to advanced level course focusing on issues of the figure.
Au, Wi, Sp Qtrs. 2-3 hr cl. Prereq: 370 (prior to Au Qtr 2003); or 470 (Au Qtr 2003 and thereafter). Repeatable to a maximum of 10 cr hrs.

573 Multi-Level Painting UGRD 5
Intermediate painting; traditional subject matter such as figures, still lifes, and concepts relative to contemporary directions in painting.
Su, Au, Wi, Sp Qtrs. 2-3 hr labs, 5 hrs arr. Prereq: 473. Repeatable to a maximum of 10 cr hrs.

587.01 Third Year Sculpture Class: Part 1 UGRD 5
Advanced study of sculptural processes, techniques, and concepts.
2-3 hr cl. Prereq: 280 or 480, 281 or 481, and 282 or 482. Open only to sculpture majors. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

587.02 Third Year Sculpture Class: Part 2 UGRD 5
Advanced study of sculptural processes, techniques, and concepts.
2-3 hr cl. Prereq: 280 or 480, 281 or 481, 282 or 482, and 587.01. Open only to sculpture majors. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

587.03 Third Year Sculpture Class: Part 3 UGRD 5
Advanced study of sculptural processes, techniques, and concepts.
2-3 hr cl. Prereq: 280 or 480, 281 or 481, 282 or 482, and 587.02. Open only to sculpture majors. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

589 Undergraduate Internship UGRD 3-5
Planned field, teaching, curatorial, or lab experience under academic and professional supervision.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Art majors with Photog emphasis, jr standing or above, and permission of instructor. Repeatable to a maximum of 15 cr hrs. Interns may receive no monetary compensation.

591.03 Studio Practice I: Ceramics UGRD 2-5
Intermediate studio practice, following and continuing the basic program of courses undertaken in the first two years.
Prereq: Permission of instructor. The following decimal subdivisions, with the exception of 591.12, are open only to js and srs majoring in Art. Repeatable to a maximum of 20 cr hrs. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

591.04 Studio Practice I: Glass UGRD 2-5
Intermediate studio practice, following and continuing the basic program of courses undertaken in the first two years.
Prereq: Permission of instructor; open only to js and srs majoring in Art. Repeatable to a maximum of 20 cr hrs. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

591.06 Studio Practice I: Printmaking UGRD 2-5
Intermediate studio practice, following and continuing the basic program of courses undertaken in the first two years.
Prereq: Permission of instructor; open only to js and srs majoring in Art. Repeatable to a maximum of 20 cr hrs. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

591.11 Studio Practice I: Sculpture UGRD 2-5
Intermediate studio practice, following and continuing the basic program of courses undertaken in the first two years.
Prereq: Permission of instructor; open only to js and srs majoring in Art. Repeatable to a maximum of 20 cr hrs. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

591.12 Studio Practice I: Art and Technology UGRD 2-5
Intermediate studio practice, following and continuing the basic program of courses undertaken in the first two years.
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

595 Senior Seminar in Studio Art UGRD 3
Presentations of studio work by seminar students, faculty, and visiting artists, with selected readings; accompanied by critical discussion emphasizing contemporary issues. BA majors exhibit work as final exhibition.
Su, Au, Wi, Sp Qtrs. 1 5-hr cl. Prereq: Sr standing in Art or permission of instructor. GEC third writing course.

630 Intermediate Molten Glassmaking UGRD 5
Molten glass as an artist's material; emphasis on the evolution of a personal aesthetic through series studies.
Au, Wi, Sp Qtrs. 2-3 hr cl, 1 lec. Prereq: 230 or 330. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

631 Intermediate Cold Glassworking UGRD 5
Innovational approach in fabricated glass imagery; emphasis on the growth of artistic development through series studies.
Au, Wi, Sp Qtrs. 2-3 hr cl, 1 lec. Prereq: 231 or 331. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

635 Photography Criticism UGRD 5
Reading, lectures, and discussions dealing with the study and practice of photograpic criticism to facilitate and enrich the understanding and criticism of photography.
Sp Qtr. 2-5 hr cl. Prereq: Jr standing or above, or permission of instructor. Not open to students with credit for ArtEduc 635 or Photog 635. Cross-listed in Art Education.

640 Klin Building UGRD 5
Design, construction, and use of simple gas and electric ceramic studio kilns; practice in the various types and methods of firing.
Sp Qtr. 2-3 hr labs, 5 hrs arr. Prereq: 240, 242, 340, and 342; or permission of instructor. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

641 Mold Making UGRD 5
Studies in the designing, fabrication, and uses of molds and molds in such multiple ceramic production processes as casting, jiggering, and pressing.
Wi Qtr. 2-3 hr labs, 5 hrs arr. Prereq: 240, 242, 340, and 342; or permission of instructor. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

642 Monumental Building Techniques UGRD 5
Design and construction of large ceramic art forms.
Au Qtr. 2-3 hr labs, 5 hrs arr. Prereq: 240, 242, 340, and 342; or permission of instructor. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

644 Ceramic Glaze and Technology UGRD 5
Ceramic computations for art students; methods of representing ceramic composition; laboratory study and discussion of raw materials and their uses in bodies and glazes.
Sp Qtr. 3-3 hr cl, 5 hrs arr. Prereq: 240, 242, 340, 342; or permission of instructor. Not open to students with credit for 441. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

645 Advanced Special Projects UGRD 5
Advanced work developed in consultation with and under the close supervision of the instructor.
Au, Wi, Sp Qtrs. 2-3 hr labs, 6 hrs arr. Prereq: 240, 242, 340, and 342; or permission of instructor. Repeatable to a maximum of 15 cr hrs. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

647 Ceramic Art History UGRD 5
Slide lectures; designed specifically to give the student an understanding of historical forms and technical processes; presented in chronological sequence.
Sp Qtr. 2-3 hr cl. Prereq: 240, 242, 340, and 342; or permission of instructor; HistArt 201 or 202 and a 367 course (second level writing).

661.01 Aspects of Art and Technology I UGRD 5
Creative and conceptual multimedia explorations into contemporary technical and aesthetic aspects of Art and Technology, such as interactive installation art, bio art and performative art.
Au Qtr. 6 studio hrs, 4 hrs arr. Prereq: Permission of instructor.

661.02 Aspects of Art and Technology II UGRD 5
Creative and conceptual multimedia explorations into contemporary technical and aesthetic aspects of Art and Technology, such as interactive installation art, bio art and performative art.
Wi Qtr. 6 studio hrs, 4 hrs arr. Prereq: Permission of instructor.
661.03 Aspects of Art and Technology III UGRD 5
Creative and conceptual multimedia explorations into contemporary technical and aesthetic aspects of Art and Technology, such as interactive installation art, bio art and performative art. Sp Qtrs. 2 3-hr cls. Prereq: Permission of instructor.

670 Advanced Drawing I UGRD 5
Special problems in drawing, utilizing a wide range of media and methods and exploring a variety of materials in experimental approaches to drawing. Au, Wi, Sp Qtrs. 2 3-hr cls. Prereq: 570 or 570.01 or 570.02. Repeatable to a maximum of 20 cr hrs.

673.01 Advanced Painting: Special Topics UGRD 5
Special topics in painting with a wide emphasis upon current directions, new media, and techniques; lectures, discussions, and field trips. Prereq: 573. Not open to students with 20 or hrs in 673. Repeatable to a maximum of 20 cr hrs.

673.03 Advanced Painting: Special Problems in Abstraction UGRD 5
Research problems in abstract painting with a wide emphasis upon abstract and/or non-representationa painting; lectures, discussions, and field trips. Prereq: 573. Not open to students with 20 or hrs in 673. Repeatable to a maximum of 20 cr hrs.

673.06 Advanced Painting: Special Problems in Painting: Conceptual Approaches UGRD 5
Conceptual and theoretical approaches to painting will be emphasized; lectures, discussions, and field trips. Prereq: 573. Not open to students with 20 or hrs in 673. Repeatable to a maximum of 20 cr hrs.

675 Photomechanical Printmaking UGRD 5
An intensive exploration of the relief processes as a means for individual expression. Au, Wi, Qtrs. 2 3-hr labs, 7 hrs arr. Prereq: 377 or 378 or 379, or written permission of instructor. Repeatable to a maximum of 20 cr hrs.

676 Advanced Relief Printmaking UGRD 5
An intensive exploration of the relief processes as a means for individual expression. Au, Qtrs. 2 3-hr labs, 7 hrs arr. Prereq: 377 or 378 or 379 and Art or ArtEd major. Repeatable to a maximum of 20 cr hrs.

677 Advanced Serigraphy UGRD 5
An intensive exploration of the serigraphic processes as a means for individual expression. Au, Qtrs. 2 3-hr labs, 5 hrs arr. Prereq: 377 or permission of instructor. Repeatable to a maximum of 20 cr hrs.

678 Advanced Intaglio UGRD 5
An intensive exploration of the intaglio process as a means for individual expression. Au, Qtrs. 2 3-hr labs, 5 hrs arr. Prereq: 378 or permission of instructor. Repeatable to a maximum of 20 cr hrs.

687.01 Fourth Year Sculpture Class: Part 1 UGRD 5
Study of sculptural processes, concepts, and self analysis as an artist. 2 3-hr cl. Prereq: 587.03. Open only to students specializing in sculpture. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

687.02 Fourth Year Sculpture Class: Part 2 UGRD 5
Study of sculptural processes, concepts, and self analysis as an artist. 2 3-hr cl. Prereq: 587.03 and 687.01. Open only to students specializing in sculpture. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

687.03 Fourth Year Sculpture Class: Part 3 UGRD 5
Study of sculptural processes, concepts, and self analysis as an artist. 2 3-hr cl. Prereq: 587.03 and 687.02. Open only to students specializing in sculpture. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

690 Imagemakers’ Seminar UGRD 3-5
Advanced group investigation of individual photographic projects with weekly critique sessions. Au, Wi, Qtrs. 1 3-hr cl. Prereq: 25 hrs of photography course work and permission of instructor. Repeatable to a maximum of 20 cr hrs. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

691.03 Studio Practice II: Ceramics UGRD 2-5
Advanced studio practice beyond 591. Prereq: Permission of instructor. Open only to srs or grad students majoring in Art. Repeatable to a maximum of 20 cr hrs. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

691.04 Studio Practice II: Glass UGRD 2-5
Advanced studio practice beyond 591. Prereq: Permission of instructor. The Open only to srs or grad students majoring in Art. Repeatable to a maximum of 20 cr hrs.

691.05 Studio Practice II: Photography UGRD 2-5
Advanced studio practice beyond 591. Prereq: Permission of instructor. Open only to srs or grad students majoring in Art. Repeatable to a maximum of 20 cr hrs. Including or hrs earned in Photog 691. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

691.06 Studio Practice II: Printmaking UGRD 2-5
Advanced studio practice beyond 591. Prereq: Permission of instructor. Open only to srs or grad students majoring in Art. Repeatable to a maximum of 20 cr hrs. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

691.09 Studio Practice II: Drawing UGRD 2-5
Advanced studio practice beyond 591. Prereq: Permission of instructor. Prereq: Grad standing or 10 hrs of 673, and submission of 10-15 drawings/paintings on Advising Day previous to the intended qtr of study; open only to students with successful review by the area faculty and a completed, signed ISA form. Repeatable to a maximum of 20 cr hrs.

691.10 Studio Practice II: Painting UGRD 2-5
Advanced studio practice beyond 591. Prereq: 570 or grad standing, and submission of 10-15 drawings/paintings on Advising Day previous to the intended qtr of study; open only to students with a successful review by the area faculty and a completed, signed ISA form and 673 or grad standing. Repeatable to a maximum of 20 cr hrs.

691.11 Studio Practice II: Sculpture UGRD 2-5
Advanced studio practice beyond 591. Prereq: Permission of instructor. Open only to srs or grad students majoring in Art. Repeatable to a maximum of 20 cr hrs. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

691.12 Studio Practice II: Art and Technology UGRD 2-5
Advanced studio practice beyond 591. Prereq: Permission of instructor. Prereq: Grad standing or 10 hrs of 673, and submission of 10-15 drawings/paintings on Advising Day previous to the intended qtr of study; open only to students with successful review by the area faculty and a completed, signed ISA form and 673 or grad standing. Repeatable to a maximum of 20 cr hrs.

691.13 Studio Practice II: Art Critical Practices UGRD 2-5
Advanced studio practice beyond 591. Advanced studio practice in art critical practices area; work developed through sustained contact with independent study adviser chosen from ACP faculty and adjunct faculty. Prereq: Permission of instructor. Open only to srs or grad students majoring in Art. Repeatable to a maximum of 20 cr hrs.

693.05 Individual Studies: Photography UGRD 2-5
Advanced study for students in specialized programs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded SU. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

693.10 Studio Practice II: Painting UGRD 2-5
Advanced study for students in specialized programs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded SU.

693.11 Studio Practice II: Sculpture UGRD 2-5
Advanced study for students in specialized programs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded SU. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

693.12 Studio Practice II: Art and Technology UGRD 2-5
Advanced study for students in specialized programs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded SU.

694.01 Group Studies: General UGRD 2-5
Group studies for students in specialized programs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.
694.03 Group Studies: Ceramics  UGRD 2-5
Group studies for students in specialized programs.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

694.05 Group Studies: Photography  UGRD 2-5
Group studies for students in specialized programs.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

694.06 Group Studies: Printmaking  UGRD 2-5
Group studies for students in specialized programs.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

694.09 Group Studies: Drawing  UGRD 2-5
Group studies for students in specialized programs.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

694.10 Group Studies: Painting  UGRD 2-5
Group studies for students in specialized programs.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

694.11 Group Studies: Sculpture  UGRD 2-5
Group studies for students in specialized programs.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

694.12 Group Studies: Art and Technology  UGRD 2-5
Group studies for students in specialized programs.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

695.02 Topics in Photographic Production: Zone System  UGRD 5
History, theory, and mechanics; application of sensitometry to black and white film; its impact on the students' personal work.
Wi Qtr. 2-3 hr cl. Prereq: 401 and written permission of instructor.

695.03 Topics in Photographic Production: Studio Work and Studio Lighting  UGRD 5
Introduction to lighting equipment, principles, and techniques as applied to constructed/directed photography done predominantly in the studio environment.
Wi Qtr. 2-3 hr cl/lab. Prereq: 401 and written permission of instructor.

695.04 Topics in Photographic Production: Social Documentary Photography  UGRD 3-5
Advanced production course with emphasis on the conceptual framework underpinning the documentary tradition in historical and contemporary photography.
Sp Qtr. 2-3 hr cl. Prereq: 401 and written permission of instructor.

695.05 Topics in Photographic Production: Bookmaking  UGRD 3-5
Exploration of the history and aesthetics of photographic books with emphasis on structure, image sequence, and the relationship of images and text.
Au Qtr. 2-3 hr cl. Prereq: 401 and written permission of instructor.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

695.06 Topics in Photographic Production: Alternative Processes  UGRD 3-5
Advanced production and study of alternative processes in photography through the production of a cohesive body of work.
Au Qtr. 2-3 hr cl. Prereq: 524, 695.02, and written permission of instructor.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

695.07 Topics in Photographic Production: Digital Imaging: Input/Output  UGRD 2-5
Exploration of the use of computers in creating and printing images with emphasis on control of input to and output from the computer.
Wi Qtr. 2-3 hr cl. Prereq: 350 and 401. Repeatable to a maximum of 10 cr hrs.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

695.08 Topics in Photographic Production: Alternative Photographic Systems  UGRD 3-5
Advanced production course exploring alternative imaging systems such as: pinhole cameras, inexpensive plastic cameras, polaroid cameras, etc.
Sp Qtr. 2-3 hr cl. Prereq: 401 and written permission of instructor. Student will make or supply alternate imaging system or camera.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

695.09 Special Topics in Photographic Production  UGRD 3-5
Open topic that takes into consideration the research interests of current faculty or visiting artists.
2-3 hr cl. Wi Qtr. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

695.10 Topics in Photographic Production: History of Photography  UGRD 5
History of photography.
Wi Qtr. 2-3 hr cl. Prereq: 401 or permission of instructor.

695.11 Topics in Photographic Production: Photographic Theory  UGRD 5
Readings in theory pertaining to photography and effects of photography on contemporary culture; emphasis on readings of late modernist and post modernist points of view.
Sp Qtr. 2-3 hr cl. Prereq: 401 or permission of instructor.

699 Senior Exhibition  UGRD 2
Required exhibition of studio work by seniors in BFA programs, accompanied by development of a portfolio of work and an artist's statement; independent study tutorial.
Su, Au, Wi, Sp Qtrs. 1-3 hr cl. Prereq: 595, sr standing, and BFA in Art; or permission of instructor. Normally to be taken within the final two qtrs of study. GEC third writing course.

699.01 Study Tour: Domestic  UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only. Repeatable.

699.02 Study Tour: Foreign  UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only. Repeatable.

699 Undergraduate Scholarship: Research and Creative Activity in Art  UGRD 1-15
Undergraduate research or creative activities in varying topics. 699H (honors) may be available.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 or hrs. This course is graded S/U.

699H Honors Undergraduate Scholarship: Research and Creative Activity in Art  UGRD 1-15
Honors undergraduate research or creative activities in varying topics.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Honors program or permission of department or instructor. Repeatable to a maximum of 15 or hrs.

783H Honors Research  UGRD 3-5
A research investigation resulting in a senior honors project.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: 4th yr standing with a 3.30 CPHR in an Art specialization, permission of instructor under whose supervision the work is to be completed, and the College of the Arts Honors Committee. Repeatable to a maximum of 15 or hrs. This course is graded S/U.

853 Video Art I  GRAD 5
Introduction to the creation and analysis of video artwork; including techniques of video capture post production, manipulation and critique within the context of art.
Au, Wi, Sp Qtrs. 1-4 cr/lab (2 hrs arranged). Prereq: Permission of instructor and grad standing.

854 Video Art II  GRAD 5
Au, Wi Qtrs. 1-4 hr cl/lab (2 hrs arranged). Prereq: 853, or permission of instructor and grad standing.

891.03 Studio Practice III: Ceramics  GRAD 2-5
Graduate-level studio practice.
Prereq: Grad standing in Art or permission of instructor. Repeatable to a maximum of 45 cr hrs.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

891.04 Studio Practice III: Glass Art  GRAD 2-5
Graduate-level studio practice.
Prereq: Grad standing in Art or permission of instructor. Repeatable to a maximum of 45 cr hrs.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

891.05 Studio Practice III: Photography  GRAD 2-5
Graduate-level studio practice.
Prereq: Grad standing in Art or permission of instructor. Repeatable to a maximum of 45 cr hrs.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.
891.06 Studio Practice Ill: Printmaking  
Graduate-level studio practice. 
Prereq: Grad standing in Art or permission of instructor. Repeatable to a maximum of 45 cr hrs. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

891.09 Studio Practice Ill: Drawing  
Graduate-level studio practice. 
Prereq: Grad standing in Art or permission of instructor. Repeatable to a maximum of 45 cr hrs.

891.10 Studio Practice Ill: Painting  
Graduate-level studio practice. 
Prereq: Grad standing in Art or permission of instructor. Repeatable to a maximum of 45 cr hrs.

891.11 Studio Practice Ill: Sculpture  
Graduate-level studio practice. 
Prereq: Grad standing in Art or permission of instructor. Repeatable to a maximum of 45 cr hrs. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

891.12 Studio Practice Ill: Art and Technology  
Graduate-level studio practice. 
Prereq: Grad standing in Art or permission of instructor. Repeatable to a maximum of 45 cr hrs.

891.13 Studio Practice Ill: Art Critical Practices  
Advanced studio practice in art critical practices area; work developed through sustained contact with independent study advisor chosen from ACP faculty and adjunct faculty. 
Prereq: Grad standing in Art or permission of instructor. Repeatable to a maximum of 45 cr hrs.

893.10 Individual Studies: Painting  
Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

894.03 Group Studies: Ceramics  
Group studies for students in specialized programs. 
Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

894.05 Group Studies: Photography  
Group studies for students in specialized programs. 
Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

894.06 Group Studies: Printmaking  
Group studies for students in specialized programs. 
Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

894.10 Group Studies: Painting  
Group studies for students in specialized programs. 
Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

894.11 Group Studies: Sculpture  
Group studies for students in specialized programs. 
Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

894.12 Group Studies: Art and Technology  
Group studies for students in specialized programs. 
Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

895 Seminar in Studio Art  
Presentations by students, faculty, and visiting artists, with critical discussion emphasizing contemporary issues. 
Au, Wi Qtr. 1 2-hr cl. Prereq: Grad standing. Repeatable to a maximum of 8 cr hrs.

896 Graduate Teaching Seminar  
Exercises and discussions exploring techniques used in organizing, presenting, and evaluating materials taught in studio art classes with special reference to the Foundation Program. 
Au Qtr. 1 2-hr d. Prereq: Permission of instructor and grad standing in Studio Art.

899.03 MFA Studio Critique: Ceramics  
To develop an interdisciplinary forum where students discuss research skills, learn how to best articulate their artistic productions, and critique the work of their peers. 
Au, Wi, Sp Qtrs. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

899.04 MFA Studio Critique: Glass  
To develop an interdisciplinary forum where students discuss research skills, learn how to best articulate their artistic productions, and critique the work of their peers. 
Au, Wi, Sp Qtrs. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

899.05 MFA Studio Critique: Photography  
To develop an interdisciplinary forum where students discuss research skills, learn how to best articulate their artistic productions, and critique the work of their peers. 
Au, Wi, Sp Qtrs. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

899.06 MFA Studio Critique: Printmaking  
To develop an interdisciplinary forum where students discuss research skills, learn how to best articulate their artistic productions, and critique the work of their peers. 
Au, Wi, Sp Qtrs. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

899.10 MFA Studio Critique: Drawing and Painting  
To develop an interdisciplinary forum where students discuss research skills, learn how to best articulate their artistic productions, and critique the work of their peers. 
Au, Wi, Sp Qtrs. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

899.11 MFA Studio Crit: Ceramics  
To develop an interdisciplinary forum where students discuss research skills, learn how to best articulate their artistic productions, and critique the work of their peers. 
Au, Wi, Sp Qtrs. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

899.12 MFA Studio Critique: Art & Technology  
To develop an interdisciplinary forum where students discuss research skills, learn how to best articulate their artistic productions, and critique the work of their peers. 
Au, Wi, Sp Qtrs. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

901.03 Studio Practice IV: Ceramics  
Advanced graduate studio practice. 
Prereq: Grad standing in Art or permission of instructor. Repeatable to a maximum of 45 cr hrs.

901.04 Glass Art  
Advanced graduate studio practice. 
Prereq: Grad standing in Art or permission of instructor. Repeatable to a maximum of 45 cr hrs.

901.05 Photography  
Advanced graduate studio practice. 
Prereq: Grad standing in Art or permission of instructor. Repeatable to a maximum of 45 cr hrs. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

901.06 Studio Practice IV: Printmaking  
Advanced graduate studio practice. 
Prereq: Grad standing in Art or permission of instructor. Repeatable to a maximum of 45 cr hrs. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

901.10 Studio Practice IV: Painting  
Advanced graduate studio practice. 
Prereq: Grad standing in Art or permission of instructor. Repeatable to a maximum of 45 cr hrs.

901.11 Studio Practice IV: Sculpture  
Advanced graduate studio practice. 
Prereq: Grad standing in Art or permission of instructor. Repeatable to a maximum of 45 cr hrs.

901.12 Studio Practice IV: Art and Technology  
Advanced graduate studio practice. 
Prereq: Grad standing in Art or permission of instructor. Repeatable to a maximum of 45 cr hrs.

901.13 Studio Practice IV: Art Critical Practices  
Advanced studio practice in art critical practices area; work developed through sustained contact with independent study advisor chosen from ACP faculty and adjunct faculty. 
Prereq: Grad standing in Art or permission of instructor. Repeatable to a maximum of 45 cr hrs.

991 Research in Art  
Research for thesis and dissertation purposes only. 
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

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**Art Education**

160 Art and Music since 1945  
A survey of the visual arts and music in the western world since 1945, based on live and recorded performances and exhibitions. 
Au, Wi, Sp Qtrs. 2 2-hr cl, 1 1-hr rec. Not open to students with credit for ArtsCol 160. GEC arts and hums VPA course. VPA Admis Cond course. Also offered as a Web-delivered course.

225 Introduction to Art Education  
Ideas, issues, and career possibilities in art education explored through readings, dialogue, and site visitations. 
Au, Wi Qtrs. 3 2-hr cl.

252 Introduction to the Computer in the Visual Arts  
Introductory study of computer graphics in relation to the traditional visual arts and as a distinct art form; computer will be used to produce imagery. 
Su, Au, Wi, Sp Qtrs. 2 2-hr cl, 4 lab hrs arr. GEC arts and hums VPA course. VPA Arts Cond course. Offered as a Web-delivered course.

255 Engaging Visuality: The Power of Seeing and Being Seen  
An introduction to issues of representation, spectacle, surveillance and voyeurism explored through a range of visual images and sites. 
Au, Su Qtrs. 2 2.5-hr cl. GEC arts and hums and social diversity course.

352 Fundamental Three-Dimensional Computer Art  
An introductory study of three-dimensional computer art techniques; three-dimensional still and animated imagery will be produced. 
Su Qtr. 2 2-hr cl, 4 lab hrs arr. Prereq: 252.
<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>367.01</td>
<td>Ethnic Arts: A Means of Intercultural Communication</td>
<td>UGRD 5</td>
<td>A study of the arts, the artworks, and art worlds from diverse ethnic cultures in North America. 367.01H (honors) may be available. Prereq: English 110 or 111 or equiv, and soph standing. Not open to students with credit for 367. GEC second writing and arts and hums VPA and social diversity in the US course.</td>
</tr>
<tr>
<td>367.01H</td>
<td>Ethnic Arts: A Means of Intercultural Communication</td>
<td>UGRD 5</td>
<td>A study of the arts, the artworks, and art worlds from diverse ethnic cultures in North America. Prereq: Honors program or permission of department or instructor; English 110 or 111 or equiv, and soph standing. Not open to students with credit for 367. GEC second writing and arts and hums VPA and social diversity in the US course.</td>
</tr>
<tr>
<td>367.02</td>
<td>Second Writing Course: Writing Art Criticism</td>
<td>UGRD 5</td>
<td>Writing critically about contemporary American art by a variety of artists with diverse points of view. Prereq: English 110 or 111 or equiv, and soph standing. GEC second writing course.</td>
</tr>
<tr>
<td>367.03</td>
<td>Second Writing Course: Criticizing Television</td>
<td>UGRD 5</td>
<td>A critical analysis of a wide variety of television programs through viewing, discussing, reading, and writing. Au, Wi, Sp Qtrs. Prereq: English 110 or 111 or equiv, and soph standing. Prereq: English 110. Not open to students with credit for Theatre 367.03. This course will also be taught by Art Education and Theatre. Cross-listed in Theatre. GEC second writing and social diversity in the US course.</td>
</tr>
<tr>
<td>467</td>
<td>Powwows: Cultural and Arts Exploration</td>
<td>UGRD 5</td>
<td>An interdisciplinary examination of contemporary powwow culture using concepts from history, the humanities, social sciences, and American Indian perspectives. Wi Qtr. 2 2-hr cl. Prereq: Second writing course. Not open to students with credit for ArtsSci 467. Cross-listed with ArtsSci 467. GEC third writing and social diversity in the US course.</td>
</tr>
<tr>
<td>480</td>
<td>Exploring the Creative Sector: Art in the 21st Century</td>
<td>UGRD 5</td>
<td>Explores the relationships within the creative sector; artistic workforce, contemporary art trends, organizational structures and variety within the industries. Au, Sp Qtrs. Prereq: English 110 and Junior status or above or with permission of instructor.</td>
</tr>
<tr>
<td>481</td>
<td>Managing Arts Organizations</td>
<td>UGRD 5</td>
<td>Prepares students as entrepreneurs to enter nonprofit, commercial, and public sector careers through independent research, dossier development, proposal, and grant writing. Su, Wi Qtrs. 1 3-hr cl, outside assignment. Prereq: Jr or sr standing or permission of instructor.</td>
</tr>
<tr>
<td>493</td>
<td>Individual Studies</td>
<td>UGRD 1-5</td>
<td>Individual studies and project work in specified problems of the field of art education. Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs.</td>
</tr>
</tbody>
</table>
Art Education 39

689 Pre-Practicum Clinical Experience GRAD 5
Contact with practicum sites and collaborative work with cooperating teachers to plan and deliver instruction.
Au Qtr. 1 2-hr cl, 1 6-hr lab. Prereq: Grad standing in ArtEduc. Open only to ArtEduc majors. Repeatable to a maximum of 10 cr hrs.

691 Applied Research in Art Education UGRD 2-10
Studies in empirical, philosophical, curriculum, or studio problems in art education.
Su, Au, Wi, Sp Qtr. Repeatable to a maximum of 10 cr hrs.

693 Individual Studies UGRD 1-15
Advanced study for students in specialized programs.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

694 Group Studies UGRD 2-5
Group studies for students in specialized programs.
Su, Au, Wi, Sp Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

698.01 Study Tour: Domestic UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different study tours only.

698.02 Study Tour: Foreign UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different study tours only.

699 Undergraduate Scholarship: Research and Creative Activity in Art Education UGRD 1-15
Undergraduate research or creative activities in varying topics. 699H (honors) may be available upon application.
Su, Au, Wi, Sp Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

699H Honors Undergraduate Scholarship: Research and Creative Activity in Art Education UGRD 1-15
Undergraduate research or creative activities in varying topics.
Su, Au, Wi, Sp Qtrs. Prereq: Honors program and permission of instructor. Repeatable to a maximum of 15 cr hrs.

700 Issues in Graduate Study in Art Education GRAD 5
Review of analytical reading and writing; overview of topics in thesis and dissertation research; graduate faculty research; national and international issues; university resources and policies.
Au, Wi Qtr. 1 5-hr cl. Prereq: Grad standing. Must be taken during the first year of graduate study in the major.

701 History of Art Education GRAD 5
Historical examination of theoretical frameworks utilized in art education research as well as the influence of multiple perspectives (political, social and cultural on art education.
Sp Qtr. 1 3-hr cl. Prereq: 601 and any 500- or 600-level course in HistArt; or permission of instructor.

703 Contemporary Theory and Art Education GRAD 5
An introduction to theoretical ideas which have emerged in contemporary writing in recent years and which have implications for the field of art education.
Wi Qtr. 2 2.5-hr cl. Prereq: Grad standing.

704 Policy Perspectives on Arts Education GRAD 5
Examines recent reform initiatives in the public, nonprofit and private sectors with the goal of understanding policy practices and dynamics in arts education.
Wi Qtr. 1 3-hr cl, 2 hrs arr. Prereq: Grad standing.

705 Overview of Research Methods in Art Education GRAD 5
Introduction to a wide range of methods applicable to art education research problems, including historical, philosophical, ethnographic, survey, experimental, and case study methods.
Au Qtr. 2 2-hr cl. Must be taken during the first year of graduate study in the major.

707 Introduction to Teaching Arts Education at the Graduate Level GRAD 3
An introduction to theories, methods and issues related to teaching arts education at the college level.
Au Qtr. 1 3-hr cl. Open only to new or recently reassigned Art Education GTA's or students with instructor's permission. This course is for all new GTAs in the Art Education department and for other students with the instructor's permission.

715 Art Education as a Community Act: Developing Pedagogy for School-Community Collaboration through Art GRAD 5
Course will explore the process of connecting art education and community contexts. Students will investigate and envision collaborative practices and create pedagogy for community-based art education.
2 2.5-hr cl. Prereq: Grad standing.

720 Philosophy of Art Education Literature Survey GRAD 3
Discussion of writings by art educators, aestheticians, artists, critics, and others for historical perspective on and to distinguish the nature of philosophy of art education.
^ Wi Qtr. 3 d.

730 Cognitive Approaches to Art Education GRAD 5
Explores current psychological and philosophical approaches to cognition and art education and their implications for education issues.
Au Qtr.

731 Evaluation in Art Education GRAD 3-5
Evaluation of student performance in art; informal instruments for collecting data for use in assessing programs.
^ Wi Qtr. 2 2-hr cl. Prereq: 807 or equiv with written permission of instructor.

735 Museum History GRAD 5
Critical examination of the historic and theoretical foundations of art and other museums as an institution, drawing on multiple disciplinary perspectives.
1 2.5-hr cl, online interaction. Will count toward Museum Education specialization.

736 Museum Education Theory GRAD 5
Theory, structure and functions of museum education.
1 2.5-hr cl, online interaction. Will count toward Museum Education specialization.

745 Museums and Teaching GRAD 5
A theoretical and practical study of teaching and learning in and through museums.
1 2.5-hr cl, online interaction. Will count toward Museum Education specialization.

748 Museum Education Practicum GRAD 5
An examination of the role of education in art museums through an in-depth experience in a museum setting.
2 2.5-hr cl. Will count toward Museum Education specialization.

753 Aesthetics of Interactive Technology GRAD 5
Aesthetic and critical investigations of the impact of interactive technologies on artmaking and art education.
^ Au Qtr. 1 3-hr cl, 1 2-hr lab. Prereq: Grad standing. Repeatable to a maximum of 10 cr hrs.

755 History, Politics and Practices of Visual Culture in Art Education.
An examination of the antecedents, history, politics and practices of visual culture, with a specific focus on the literature in art education.
Au, Wi, Sp Qtr. 1 3-hr cl and hr arr. Prereq: Grad standing or permission of instructor.

764 Investigating Material Culture GRAD 5
Investigates the relationship between people and objects including scientific analysis of materials, skill of maker, use, cultural importance and meaning.
Sp Qtr. 2 2.5-hr cl. Core course for graduate interdisciplinary specialization in the Analysis of Material Culture.

765 Contemporary Art and Art Education GRAD 3
A study of recent developments in contemporary art and the implication of those developments on art education practice and curriculum design.
Au Qtr, 4 cl.

767 Critical Analysis of Multicultural Art Education: Theory and Practice GRAD 5
Investigation and analysis of multicultural theories and issues for art education.
Au Qtr. 2 2.5-hr cl. Prereq: Permission of instructor.

768 Indigenous People and Visual Culture GRAD 5
In this course, we critically investigate images of indigenous peoples as portrayed through visual culture (i.e., television, film, advertising, art, and historic references).
Au Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor.

775 Social and Cultural Theories in Art and Art Education GRAD 3
Critical investigation of the relationships between and among artists and art worlds of various societies and cultures.
Wi Qtr. 1 3-hr cl. Prereq: Permission of instructor.

778 Arts Participation, Cultural Literacy, and Audience Development GRAD 5
Building on empirical and theoretical research, this course constructs a framework to understand audience participation, understanding and reception of specific art forms.
Prereq: Grad standing or permission of instructor.

782 Nonprofit Arts Institution Governance and Board Leadership GRAD 5
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.
Au Qtr. 2.5-hr cl and independent research. Prereq: Grad standing.

783H Honors Research UGRD 3-5
A program of reading and research arranged for each student, with individual conferences, reports, and honors thesis.
Su, Au, Wi, Sp Qtr. Arr. Prereq: 4th yr standing with a p/hr ratio of 3.50 in the major area and permission of instructor under whose supervision the work is to be completed and the Honors Committee of either the College of the Arts or the College of Education. Repeatable to a maximum of 15 cr hrs. Satisfactory completion of at least 8 hrs is required of candidates for an undergraduate degree with distinction in art educ. This course is graded S/U.
Art Education

786 Teaching Practicum: Prekindergarten through Elementary Levels
Field-based teaching practicum at the prekindergarten through elementary levels. Au, Wi, Sp Qtr. 40 hrs/week on site, 1-3 hr cl. Prereq: 689. This course is graded S/U.

787 Teaching Practicum: Intermediate through Secondary Levels
Field-based teaching practicum at the intermediate through secondary levels. Au, Wi, Sp Qtrs. 40 hrs/week on site, 1-3 hr cl. Prereq: 689. This course is graded S/U.

795 Seminar on Topical Issues in Art Education II
Seminar on Topical Issues in Art Education II. Su, Au, Wi, Sp Qtrs. Arr. Prereq: 15 cr hrs in ArtEduc or permission of dept. Repeatable to a maximum of 30 cr hrs.

803 Critical Theory and Cultural Studies of Policy Research and Practice
Traces the development of critical theories from 19th-20th centuries, tracing historic developments and value/importance to arts education practice and policy research. Sp Qtr. 3-hr cl. Prereq: Grad standing.

805 Empirical Problems in Art Education
An introduction to the language, methodology, and application of empirical research in art education; the identification and isolation of appropriate empirical problems in the field. Wi Qtr.

807 Curriculum Problems in Art Education
An examination of the functions of curricular plans as tools for transforming selected conceptions of art education into teacher and student activities in the classroom. Wi Qtr.

809 Thesis and Dissertation Proposal Writing
The purpose of this course is for students to understand the components of a thesis or dissertation research proposal. Students will write a draft proposal. Wi Qtr. Prereq: 700 and 705.

830 Seminar on Art History in Art Education
An examination of art history structures, concepts and research methods for translation into alternative education methods for teaching art history in K-12 settings. Au Qtr. 1-3 hr cl, 2 hrs arr.

835 Visual Representations of LGBT Subjects
Survey of social standpoints on visual culture and cinematic representations of (homo)sexualities through readings, film viewings, class discussions and presentations of independent research. *Au Qtr.

840 Criticism, Aesthetics, and Education
Teaching about art and the aesthetic and social issues it raises in school and community contexts. Wi Qtr. 2.5-5 hr cl.

875 Social and Cultural Research Methods for Art Education
Social and culturally based research methods for studying the art of diverse groups of people. Sp Qtr. 2.5-5 hr cl. Prereq: 705 or permission of instructor.

889.01 Internship in Arts Management
Supervised professional experience within a performing arts, visual arts, literary arts, or museum/historical organization. Assignments may include fundraising, marketing, grantwriting, budgeting, communication and website maintenance, preparing materials for board meetings, etc. Prereq: Permission of instructor. Repeatable to a maximum of 16 cr hrs. This course is graded S/U.

889.02 Art and Cultural Policy Internship
Supervised experience within a government arts or cultural agency at any level - local, state, regional, national or international - or within a trade or professional association engaged in arts advocacy. Assignments may include grants administration, background research on issues or program practices, constituency contact, activities in support of the preparation of public documents and reports, etc. Prereq: Permission of instructor. Repeatable to a maximum of 16 cr hrs. This course is graded S/U.

889.03 Internship in Museum Education
Supervised experience within a museum or public gallery that provides educational services. Assignments may include the preparation of interpretive and/or curriculum materials, acting as a docent in museum educational programs, communication and cooperation with school and/or community partners, etc. 10 hrs/wk at placement site. Prereq: Permission of instructor. Repeatable to a maximum of 16 cr hrs. This course is graded S/U.

889.04 Community Arts Internship
Supervised experience within community settings that provide programs addressing arts education. Assignments may include curriculum development, assets mapping, participation in community collaborations and program evaluation. Prereq: Permission of instructor. Repeatable to a maximum of 16 cr hrs. This course is graded S/U.

893 Individual Studies
Individual Studies. Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

894 Group Studies
Group studies for students in specialized programs. Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs.

911 Research Problems in Art Education
Research Problems in Art Education. Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 45 cr hrs.

998 Research in Art Education: Thesis
Research for thesis purposes only. Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

999 Research in Art Education: Dissertation
Research for dissertation purposes only. Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

Arts and Sciences

100.01 Arts and Sciences Survey: General
Academic requirements; University procedures, grading system, resources; student rights and responsibilities; overview of Arts and Sciences academic areas of study and services. 100.01H (honors) may be available.

100.01H Arts and Sciences Survey: General (Honors)
Academic requirements; University procedures, grading system, resources; student rights and responsibilities; overview of Arts and Sciences academic areas of study and services. Prereq: Honors program or permission of department or instructor. Not open to students with credit for 100 or 100.02, Agrint 100, ArtsCol 100.01 or 100.02, BioSci 100, Engineer 100, HumCol 100, MPSCol 100, SBSCol 100, or any decimal subdivision of UnivCol 100. This course is graded S/U.

100.02 Arts and Sciences Survey: Special
Academic requirements; University procedures, grading system, resources; student rights and responsibilities; overview of Arts and Sciences academic areas of study and services. Not open to students with credit for any College Survey 100.xx course. This course is graded S/U.

100.02H Arts and Sciences Survey: Health Professions (Honors)
Academic requirements; University procedures, grading system, resources; student rights and responsibilities; overview of Arts and Sciences academic areas of study and services. Prereq: Honors program or permission of department or instructor. Not open to students with credit for 100 or 100.02, Agrint 100, ArtsCol 100.01 or 100.02, BioSci 100, Engineer 100, HumCol 100, MPSCol 100, SBSCol 100, or any decimal subdivision of UnivCol 100. This course is graded S/U.

100.03 Arts and Sciences Survey: PASS
Academic requirements; University procedures, grading system, resources; student rights and responsibilities; overview of Arts and Sciences academic areas of study and services. Not open to students with credit for any College Survey 100.xx course. This course is graded S/U.

100.04 Arts and Sciences Survey: Transfer
Academic requirements; University procedures, grading system, resources; student rights and responsibilities; overview of Arts and Sciences academic areas of study and services. Not open to students with credit for any College Survey 100.xx course. This course is graded S/U.

100.05 Arts and Sciences Survey: Art
Academic requirements; University procedures, grading system, resources; student rights and responsibilities; overview of Arts and Sciences academic areas of study and services. Not open to students with credit for any College Survey 100.xx course. This course is graded S/U.

100.05H Arts and Sciences Survey: Art (Honors)
Academic requirements; University procedures, grading system, resources; student rights and responsibilities; overview of Arts and Sciences academic areas of study and services. Not open to students with credit for any College Survey 100.xx course. This course is graded S/U.

100.06 Arts and Sciences Survey: Arts and Humanities
Academic requirements; University procedures, grading system, resources; student rights and responsibilities; overview of Arts and Sciences academic areas of study and services. Not open to students with credit for any College Survey 100.xx course. This course is graded S/U.

100.06H Arts and Sciences Survey: Arts and Humanities (Honors)
Academic requirements; University procedures, grading system, resources; student rights and responsibilities; overview of Arts and Sciences academic areas of study and services. Not open to students with credit for any College Survey 100.xx course. This course is graded S/U.
100.07 Arts and Sciences Survey: Biological Sciences  
Academic requirements; University procedures, grading system, resources; student rights and responsibilities; overview of Arts and Sciences academic areas of study and services. Not open to students with credit for any College Survey 100.xx course. This course is graded S/U.

100.07H Arts and Sciences Survey: Biological Sciences (Honors)  
Academic requirements; University procedures, grading system, resources; student rights and responsibilities; overview of Arts and Sciences academic areas of study and services. Not open to students with credit for any College Survey 100.xx course. This course is graded S/U.

100.08 Arts and Sciences Survey: Dance  
Academic requirements; University procedures, grading system, resources; student rights and responsibilities; overview of Arts and Sciences academic areas of study and services. Not open to students with credit for any College Survey 100.xx course. This course is graded S/U.

100.09 Arts and Sciences Survey: Design  
Academic requirements; University procedures, grading system, resources; student rights and responsibilities; overview of Arts and Sciences academic areas of study and services. Not open to students with credit for any College Survey 100.xx course. This course is graded S/U.

100.10 Arts and Sciences Survey: Mathematical and Physical Sciences  
Academic requirements; University procedures, grading system, resources; student rights and responsibilities; overview of Arts and Sciences academic areas of study and services. Not open to students with credit for any College Survey 100.xx course. This course is graded S/U.

100.10H Arts and Sciences Survey: Mathematical and Physical Sciences (Honors)  
Academic requirements; University procedures, grading system, resources; student rights and responsibilities; overview of Arts and Sciences academic areas of study and services. Not open to students with credit for any College Survey 100.xx course. This course is graded S/U.

100.11 Arts and Sciences Survey: Music  
Academic requirements; University procedures, grading system, resources; student rights and responsibilities; overview of Arts and Sciences academic areas of study and services. Not open to students with credit for any College Survey 100.xx course. This course is graded S/U.

100.12 Arts and Sciences Survey: Music Education  
Academic requirements; University procedures, grading system, resources; student rights and responsibilities; overview of Arts and Sciences academic areas of study and services. Not open to students with credit for any College Survey 100.xx course. This course is graded S/U.

100.13 Arts and Sciences Survey: Middle Childhood Education  
Academic requirements; University procedures, grading system, resources; student rights and responsibilities; overview of Arts and Sciences academic areas of study and services. Not open to students with credit for any College Survey 100.xx course. This course is graded S/U.

100.14 Arts and Sciences Survey: Social and Behavioral Sciences BA  
Academic requirements; University procedures, grading system, resources; student rights and responsibilities; overview of Arts and Sciences academic areas of study and services. Not open to students with credit for any College Survey 100.xx course. This course is graded S/U.

100.15 Arts and Sciences Survey: Social and Behavioral Sciences BA/BS  
Academic requirements; University procedures, grading system, resources; student rights and responsibilities; overview of Arts and Sciences academic areas of study and services. Not open to students with credit for any College Survey 100.xx course. This course is graded S/U.

100.15H Arts and Sciences Survey: Social and Behavioral Sciences BA/BS (Honors)  
Academic requirements; University procedures, grading system, resources; student rights and responsibilities; overview of Arts and Sciences academic areas of study and services. Not open to students with credit for any College Survey 100.xx course. This course is graded S/U.

101 First- or Second-Year Seminar  
Seminars on varying topics taught by University faculty. Prereq: Fr or soph standing or permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

101H First- or Second-Year Seminar  
Seminars on varying topics taught by University faculty. Prereq: Honors program or permission of department or instructor; Fr or soph standing or permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

120 Internet Tools and Research Techniques  
This 4-week online course teaches about internet browsing and communication tools, effective search and Web evaluation strategies. See: http://liblearn.osu.edu.

121 Advanced Online Research  
This 4-week online course teaches specialized Web tools, article databases, and issues related to finding information in a student's chosen field. See: http://liblearn.osu.edu.

137.01 Freshman Seminar  
Afrords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Au, Wi, Sp Qtrs. Prereq: Rank 1 standing or permission of instructor. Open only to first-year students. Only one freshman seminar per quarter allowed. Topics will vary each quarter. This course is letter graded. Repeatable to a maximum of 6 cr hrs.

137.02 Freshman Seminar  
Afrords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Su, Au, Wi, Sp Qtrs. Prereq: Rank 1 standing or permission of instructor. Open only to first-year students. Only one freshman seminar per quarter allowed. Topics will vary each quarter. This course is letter graded. Repeatable to a maximum of 6 cr hrs.

137.03 Freshman Seminar  
Afrords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Su, Au, Wi, Sp Qtrs. Prereq: Rank 1 standing or permission of instructor. Open only to first-year students. Only one freshman seminar per quarter allowed. Topics will vary each quarter. This course is letter graded. Repeatable to a maximum of 6 cr hrs.

137.04 Freshman Seminar  
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137.05 Freshman Seminar  
Afrords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Su, Au, Wi, Sp Qtrs. Prereq: Rank 1 standing or permission of instructor. Open only to first-year students. Only one freshman seminar per quarter allowed. Topics will vary each quarter. This course is letter graded. Repeatable to a maximum of 6 cr hrs.

137.06 Freshman Seminar  
Afrords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Su, Au, Wi, Sp Qtrs. Prereq: Rank 1 standing or permission of instructor. Open only to first-year students. Only one freshman seminar per quarter allowed. Topics will vary each quarter. This course is letter graded. Repeatable to a maximum of 6 cr hrs.

137.07 Freshman Seminar  
Afrords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Su, Au, Wi, Sp Qtrs. Prereq: Rank 1 standing or permission of instructor. Open only to first-year students. Only one freshman seminar per quarter allowed. Topics will vary each quarter. This course is letter graded. Repeatable to a maximum of 6 cr hrs.

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Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Only one freshman seminar per quarter allowed. Topics will vary each quarter. This course is letter graded. Repeatable to a maximum of 6 cr hrs.

137.24 Freshman Seminar UGRD 1-2
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Only one freshman seminar per quarter allowed. Topics will vary each quarter. Repeatable to a maximum of 6 cr hrs. This course is letter graded.

137.25 Freshman Seminar UGRD 1-2
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Only one freshman seminar per quarter allowed. Topics will vary each quarter. Repeatable to a maximum of 6 cr hrs. This course is letter graded.

137.26 Freshman Seminar UGRD 1-2
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Only one freshman seminar per quarter allowed. Topics will vary each quarter. Repeatable to a maximum of 6 cr hrs. This course is letter graded.

137.27 Freshman Seminar UGRD 1-2
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Only one freshman seminar per quarter allowed. Topics will vary each quarter. Repeatable to a maximum of 6 cr hrs. This course is letter graded.

137.28 Freshman Seminar UGRD 1-2
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Only one freshman seminar per quarter allowed. Topics will vary each quarter. Repeatable to a maximum of 6 cr hrs. This course is letter graded.

137.29 Freshman Seminar UGRD 1-2
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Only one freshman seminar per quarter allowed. Topics will vary each quarter. Repeatable to a maximum of 6 cr hrs. This course is letter graded.

137.30 Freshman Seminar UGRD 1-2
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Only one freshman seminar per quarter allowed. Topics will vary each quarter. Repeatable to a maximum of 6 cr hrs. This course is letter graded.

137.31 Freshman Seminar UGRD 1-2
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Only one freshman seminar per quarter allowed. Topics will vary each quarter. Repeatable to a maximum of 6 cr hrs. This course is letter graded.

137.32 Freshman Seminar UGRD 1-2
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Only one freshman seminar per quarter allowed. Topics will vary each quarter. Repeatable to a maximum of 6 cr hrs. This course is letter graded.
138.06 Freshman Seminar  UGRD 1-2
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Open only to first-year students. Only one freshman seminar per quarter allowed. Topics will vary each quarter. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

138.07 Freshman Seminar  UGRD 1-2
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Open only to first-year students. Only one freshman seminar per quarter allowed. Topics will vary each quarter. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

138.08 Freshman Seminar  UGRD 1-2
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Open only to first-year students. Only one freshman seminar per quarter allowed. Topics will vary each quarter. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

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138.10 Freshman Seminar  UGRD 1-2
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Open only to first-year students. Only one freshman seminar per quarter allowed. Topics will vary each quarter. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

138.11 Freshman Seminar  UGRD 1-2
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Open only to first-year students. Only one freshman seminar per quarter allowed. Topics will vary each quarter. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

138.12 Freshman Seminar  UGRD 1-2
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Open only to first-year students. Only one freshman seminar per quarter allowed. Topics will vary each quarter. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

138.13 Freshman Seminar  UGRD 1-2
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Open only to first-year students. Only one freshman seminar per quarter allowed. Topics will vary each quarter. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

138.14 Freshman Seminar  UGRD 1-2
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Open only to first-year students. Only one freshman seminar per quarter allowed. Topics will vary each quarter. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

138.15 Freshman Seminar  UGRD 1-2
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Open only to first-year students. Only one freshman seminar per quarter allowed. Topics will vary each quarter. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

138.16 Freshman Seminar  UGRD 1-2
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Open only to first-year students. Only one freshman seminar per quarter allowed. Topics will vary each quarter. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

138.17 Freshman Seminar  UGRD 1-2
Affords first-year students opportunities for contact with faculty in small group settings; introduction to academic areas, research, and frontier areas of scholarly pursuit. Open only to first-year students. Only one freshman seminar per quarter allowed. Topics will vary each quarter. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.
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<td>Disability Studies Workshop</td>
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<td>Introduction to Graduate Study in Disability Studies</td>
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<tr>
<td>705</td>
<td>Introduction to Latina/a Studies</td>
<td>GRAD</td>
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A broad, interdisciplinary graduate survey of the field of Sexuality Studies. Prerequisite: Grad standing or permission of instructor.

Astronomy

141 Life in the Universe UGRD 5
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.

142 Black Holes UGRD 5
The nature, formation, and discovery of black holes in the universe. Prerequisite: Math 075 or 076. GEC phys sci course.

143 History of the Universe UGRD 5
Description of the history of the universe from Big Bang to present; how observations led to discovery of this history. Au, Wi Qtr. 5 cr. Not open to students with credit for 162 or 172. GEC phys sci course.

161 Introduction to Solar System Astronomy UGRD 5
Physical nature of the sun and its family of planets, satellites, comets and minor bodies; gravitation, light, and telescopes. 161H (honors) may be available. Su, Au, Wi Qtr. 5 cr or 3.5-1 hr cr. Not open to students with credit for 162 or 171. Not intended for ASC BS students. Not recommended for students who plan to continue in astronomy or physics. This course is available for EM credit. GEC phys sci course. NS Admis Cond course.

161H Introduction to Solar System Astronomy UGRD 5
Physical nature of the sun and its family of planets, satellites, comets and minor bodies; gravitation, light, and telescopes. Su, Au, Wi, Qtr. 5 cr or 3.5-1 hr cr. Prerequisite: Math 075 or 076 or 102, or Math Placement Level R. Not open to students with credit for 171. Not intended for ASC BS students. Not recommended for students who plan to continue in astronomy or physics. This course is available for EM credit. GEC phys sci course. NS Admis Cond course.

162 Introduction to Stellar, Galactic, and Extragalactic Astronomy UGRD 5
Structure, motions, and evolution of stars, interstellar material, galaxies, and the universe as a whole. Su, Au, Wi, Qtr. 5 cr or 3.5-1 hr cr. Prerequisite: 161. Not open to students with credit for 172. Not intended for ASC BS students. Not recommended for students who plan to continue in astronomy or physics. This course is available for EM credit. GEC phys sci course. NS Admis Cond course.

162H Introduction to Stellar, Galactic, and Extragalactic Astronomy UGRD 5
Structure, motions, and evolution of stars, interstellar material, galaxies, and the universe as a whole. Su, Au, Wi, Qtr. 5 cr or 3.5-1 hr cr. Prerequisite: Honors program or permission of department or instructor; Math 116 and 118 or 148. Not open to students with credit for 171. Not intended for ASC BS students. Not recommended for students who plan to continue in astronomy or physics. This course is available for EM credit. GEC phys sci course. NS Admis Cond course.

163H Relativity and Cosmology UGRD 5
Origin and evolution of the Universe, based on the Theory of Relativity, including the Big Bang, cosmic microwave background, formation of cosmic structure, dark matter. ** Au Qtr. 5 cr. Prerequisite: 162 and enrollment in an honors program; or permission of dept. GEC phys sci course.

171 Solar System Astronomy UGRD 5
Development of astronomy and astrophysics; nature of the solar system, including planets, satellites, comets, asteroids, and the solar atmosphere.

172 Stellar, Galactic, and Extragalactic Astronomy UGRD 5
Structure and evolution of stars, interstellar medium, galaxies, and the universe. ** Sp Qtr. 5 cr. Prerequisite: 171. Not open to students with credit for 162. GEC phys sci course.

291 Basic Astrophysics and Planetary Astronomy UGRD 5
Motions and physical nature of objects in the solar system; electromagnetic radiation, telescopes, and astronomical detectors. Au Qtr. 5 cr. Prerequisite: Physics 133, or permission of instructor. Intended only for BS students. This course is available for EM credit.

292 Stellar, Galactic, and Extragalactic Astronomy and Astrophysics UGRD 5
Observational and physical properties of the sun and stars; stellar structure and evolution; interstellar medium; galaxies and cosmology. Wi, Qtr. 5 cr. Prerequisite: 291 or permission of instructor. This course is available for EM credit.

294 Group Studies UGRD 1-5
Study of special or interdisciplinary topics at the graduate level.

296 Individual Studies UGRD 1-5
Special studies not otherwise offered. Su, Au, Wi, Qtr. 5 cr. Prerequisite: Permission of instructor.

299 Topics in Astrophysics UGRD 1
Prospective astronomy majors will meet weekly with different astronomy faculty to learn about current research topics, facilities, and opportunities available in the graduate astronomy program. Au, Wi Qtr. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

335 Methods of Astronomical Observation and Data Analysis UGRD 5
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.

350 History of the Universe UGRD 5
Structure and evolution of the Universe. ** Sp Qtr. 5 cr. Prerequisite: Math 255 or 415; Physics 263, Physics 621 (or concurrent) recommended; or permission of instructor. Not open to students with credit for 614 or Physics 681. Cross-listed in Physics. Offered either spring or winter quarter.

351 Principles of Stellar Evolution and Nucleosynthesis UGRD 5
Physics of stellar structure, evolution, and nucleosynthesis. Wi, Su, Sp Qtr. 5 cr. Prerequisite: Math 255 or 415; Physics 263, Physics 621 (or concurrent) recommended; or permission of instructor. Not open to students with credit for 642 or Physics 682. Cross-listed in Physics. Offered either spring or winter quarter.

352 Undergraduate Research in Astronomy UGRD 1-5
Prospective astronomy majors will meet weekly with different astronomy faculty to learn about current research topics, facilities, and opportunities available in the graduate astronomy program. Au, Wi Qtr. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

383H Honors Research UGRD 3-5
A program of study arranged for each student, with individual conferences, reports, and honors thesis. Su, Au, Wi, Qtr. 5 cr. Prerequisite: 4th yr standing with a grade of A in at least half of the Astron courses taken, 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 2 qtrs are required of candidates for the degree BS with distinction in Astronomy. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

801 Astronomy Seminar I GRAD 2
Seminars conducted on astronomical topics of current interest; students will participate actively in the presentation and discussion of materials. Au Qtr. Prerequisite: 10 cr hrs each at 600-level or higher in Astron, Physics, and Math; or permission of instructor. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

802 Astronomy Seminar II GRAD 2
Continuation of 801. Wi, Qtr. Prerequisite: 801. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

803 Astronomy Seminar III GRAD 2
Continuation of 802. Sp Qtr. Prerequisite: 802. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.
Astronomy

810 Order-of-Magnitude Astrophysics
Methods for approximate solution of a wide range of astrophysical problems, building on physical principles.
Prereq: Grad standing in Astron or permission of instructor. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

820 Radiation Measurements
Techniques for obtaining and interpreting measurements of radiation from astronomical sources
** Au Qtr. 3 cl. Prereq: Permission of instructor.

822 Electromagnetic Radiation
Continuous radiative processes of astrophysical interest.
* Au Qtr. 2 1.5-hr cl. Prereq: Physics 656 or permission of instructor.

823 Astrophysical Spectroscopy
Spectral formation in astrophysical sources, theory of atomic and molecular spectra, radiative and collisional processes in astrophysical and laboratory plasmas.
** Au Qtr. 3 cl or 2 1.5-hr cl. Prereq: Physics 532 or 632 or permission of instructor.

825 Radiative Gas Dynamics
Dynamics of gas flows in astrophysical situations, including stellar winds, accretion, shock waves, and jets.
** Wi Qtr. 3 cl or 2 1.5-hr cl. Prereq: Physics 621 or permission of instructor.

830 Observed Properties of Stars and Galaxies
Observed properties of individual stars and normal (non-active) galaxies.
Au Qtr. 3 1.5-hr cl. Prereq: 640 and Physics 533 or 633 or 706, or permission of instructor.

831 Stellar Interiors
Theoretical aspects of the interiors and evolution of single stars.
* Sp Qtr. 3 cl. Prereq: 641, Math 255 and 551, and Physics 533 or 633 or 706, or permission of instructor.

832 Stellar Atmospheres
Theory of the atmospheric structure of stars, emphasizing spectral line formation.
** Wi Qtr. 3 cl or 2 1.5-hr cl. Prereq: 641, Math 255 and 551, and Physics 533 or 633 or 706, or permission of instructor.

861 Galactic Astronomy
Structure and kinematics of the Galaxy.
** Wi Qtr. 3 cl. Prereq: 640 and Physics 533 or 633 or 706, or permission of instructor.

869 Observational Cosmology and Active Galaxies
Methods of observational cosmology; properties and evolution of active galactic nuclei and quasars.
** Wi Qtr. 3 cl or 2 1.5-hr cl. Prereq: Grad standing in Astron or permission of instructor.

870 Stellar Systems
Dynamics and evolution of stellar systems.
* Au Qtr. 3 cl. Prereq: 868 or permission of instructor.

871 Interstellar Medium
Physical processes occurring in interstellar gas and dust.
* Sp Qtr. 3 cl or 2 1.5-hr cl. Prereq: 825 or permission of instructor.

873 Cosmology and Structure Formation
Structure and evolution of the Universe; physical processes in the early universe; formation of cosmic structure.
* Wi Qtr. 3 cl or 2 1.5-hr cl. Prereq: Grad standing in Astron or permission of instructor.

880 Directed Research
Participation by the student in the research being conducted by a professor.
Su, Au, Wi, Sp Qtr. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs. Repeatable only under supervision of different faculty members. This course is graded S/U.

890 Topical Seminars in Astronomy
Focused seminars on topics and methods of contemporary astronomical research.
Sp Qtr. Times by arrangement flexible: 4.1.5-hr lectures/quarter. Prereq: Grad standing in Astron or permission of instructor. Repeatable to a maximum of 4 cr hrs. This course is graded S/U.

894 Group Studies
Special studies not otherwise offered.
Su, Au, Wi, Sp Qtr. Arr. Repeatable to a maximum of 15 cr hrs.

999 Research in Astronomy and Astrophysics
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtr. Repeatable. This course is graded S/U.

Athletic Training

303 Basic Athletic Training
Introduction to profession of Athletic Training, its governing organizations and basic knowledge and skills in prevention, recognition, management and rehabilitation of injuries and illnesses.
Su, Au, Wi Qtr. 2 2-hr cl, 2-hr lab. Prereq or concor: Chem 121. Only open to Pre AT majors or by permission of instructor. Students seeking a sports medicine course for non-majors should take 691.
540 Care of Medical Emergencies, Trauma, and Disease UGRD 5
Pathology, evaluation, on-field care, and management of disease and trauma by athletic trainers. Special emphasis on management of catastrophic injury and on inflammation and repair.
Sp Qtr. 2 2-hr cl, 1 2-hr lab. Prereq: 420, 421, concur:422.

550 Athletic Training Biomechanics UGRD 4
Theory and clinical application of biomechanics, kinetics, and kinematics by Athletic Trainers in the prevention, evaluation, management, and rehabilitation of injuries.
Wi Qtr. 2 1.5-hr cl, 1.2-hr lab. Prereq: Physics 101 or higher, or permission of instructor. Open only to Athletic Training majors or by permission of instructor.

600 Athletic Training Ethics UGRD 4
Application of ethics and legal principles to the practice of Athletic Training. Focus is on making ethical decisions and on understanding and minimizing legal liability in Athletic Training practice.
Sp Qtr. 2 2-hr cl.

610 Athletic Training Therapeutic Modalities UGRD 5
Theory and clinical application of physical agents including heat, cold, light, sound, electromagnetic and mechanical energy in treatment and rehabilitation performed by Athletic Trainers.
Au Qtr. 2 2-hr cl, 1 2-hr lab. Prereq: 540. Open only to Athletic Training majors or by permission of instructor.

620 Pharmacology in Athletic Training UGRD 3
Overview of pharmacokinetics, pharmacodynamics, drug law and selected medications common to sports medicine. Emphasis on drug administration, physiology, adverse reaction, and athletic eligibility ramifications.
Wi Qtr. 2 1-hr cl, 1-hr lab. Prereq: 540, 600. Open only to Athletic Training majors or by permission of instructor.

625 Administration in Athletic Training UGRD 4
Administration of Athletic Training programs. Includes management of personnel, budget, facilities, medical records, insurance, legal liability, emergency plans, public relations, and other topics.
Wi Qtr. 2 2-hr cl. Prereq: 630. Open only to Athletic Training majors or permission of instructor.

630 Experience in Athletic Training VII UGRD 2
Supervised clinical experience in the application of Athletic Training techniques. Focus is on advanced techniques in therapeutic exercise.
Au Qtr. 2 1-hr cl. Prereq: 532. Open only to Athletic Training majors or by permission of instructor. Seventh of 9 clinical experience courses for Athletic Training majors.

631 Experience in Athletic Training VIII UGRD 2
Supervised clinical experience in the application of Athletic Training techniques. Focus is on the evaluation of visceral injuries and illnesses, assessment of general medical conditions and disabilities, and NATABOC preparation.
Wi Qtr. 2 1-hr cl. Prereq: 630. Open only to Athletic Training majors or by permission of instructor. Eighth of 9 clinical experience courses for Athletic Training majors.

632 Experience in Athletic Training IX UGRD 2
Supervised clinical experience in the application of Athletic Training techniques. Focus is on administration in Athletic Training, professional development, psychological aspect of injury and rehabilitation, and nutritional counseling.
Sp Qtr. 2 1-hr cl. Prereq: 631. Open only to Athletic Training majors or by permission of instructor. Last of 9 clinical experience courses for Athletic Training majors.

635 Psychosocial Issues, Identification and Mediation in Physically Active Patients UGRD 4
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.
Au Qtr. 2 1.5-hr cl, 1.5-hr lab.

640 Special Topics in Athletic Training UGRD 4
Comprehensive discussion of timely issues and recently published or presented research in sports medicine. Also includes a program cumulative mock certification examination.
Sp Qtr. 2 2-hr cl. Prereq: 625. Open only to Athletic Training majors or permission of instructor.

661 Survey of Sports Medicine UGRD 4
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.
Su, Au, Wi, Sp Qtrs. 2 2-hr cl, 1 1-hr lab. Not open to athletic training majors.

629 Climate System Modeling: Basics and Applications UGRD 5
An examination of climate system modeling, including their component atmospheric, oceanic, sea ice and land surface models, and their coupling, and their applications.
Prereq: 230 or Geog 520 or permission of instructor.

631 Atmospheric Thermodynamics UGRD 5
An analysis of the fundamentals of atmospheric thermodynamics and their application to meteorological problems.
5 cl. Prereq: Math 153.

637 Dynamic Meteorology I UGRD 5
Fundamental problems in dynamic meteorology: components of the equations of atmospheric motion are derived, and vorticity and divergence in the development of meteorological systems.
5 cl. Prereq: 631 and Math 255 or 415.

638 Dynamic Meteorology II UGRD 5
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.
5 cl. Prereq: 637 or AeroEng 765.

689 Internship in Atmospheric Sciences UGRD 3-10
An opportunity for practical experience and on-the-job learning in an atmospheric sciences related work place.
Prereq: 10 hours of major program courses and permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

693 Individual Studies in Atmospheric Sciences UGRD 1-5
Independent studies on selected atmospheric sciences related topics.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

694 Group Studies in Atmospheric Sciences UGRD 1-5
Special studies on topics directly related to the atmospheric sciences.
3 cl. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

699 Undergraduate Research in Atmospheric Sciences UGRD 1-15
Undergraduate research on topics in the atmospheric sciences.
Undergraduate permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

783H Honors Research UGRD 3-5
A program of research which includes individual conferences and which culminates in an honors thesis and an oral defense.
Prereq: Approved candidacy for graduation with distinction, which includes faculty advisor and ASC Honors Committee approval of a project, a minimum of 3.5 GPA in the field of distinction, senior standing, and a cumulative GPA commensurate with honors program membership. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

811 Atmospheric Sciences Seminar GRAD 2-4
A multidisciplinary seminar reviewing selected topics in atmospheric sciences and related fields.
Earned credit will depend on the course content. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

893 Individual Studies in Atmospheric Sciences GRAD 1-5
Reviews the state-of-the-art of selected topics in the atmospheric sciences-related fields of meteorology and climatology, air environment studies, or aeronomy and solar-terrestrial relations.
Prereq: Written permission of instructor. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

894 Group Studies in Atmospheric Sciences GRAD 1-5
Advanced studies on topics directly related to the atmospheric sciences.
Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

999 Research in Atmospheric Sciences GRAD 1-18
Research for thesis or dissertation purpose only.
Prereq: Grad standing in AtmosSc. Repeatable. This course is graded S/U.

### Atmospheric Sciences

230 Basic Meteorology UGRD 5
Introduction to the underlying physics of the atmosphere; basic equations of thermodynamics, radiation, and dynamics are presented and used to explain selected atmospheric phenomena.
5 cl. Prereq: Math 152 and Physics 132. Not open to students with credit for Geog 520.

620 Synoptic Meteorology Laboratory UGRD 3
Introduction to reading and interpretation of synoptic weather maps and diagram- and data-communication systems.
2 cl, 1 lab hr. Prereq or concur: 230 or Geog 520. Not open to students with credit for Geog 620. Cross-listed in Geography.

294 Group Studies in Aviation UGRD 2-5
Group Studies in Aviation.
^ Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

300 The National Aviation System UGRD 3
A comprehensive survey of the national aviation system.
Au, Wi, Sp Qtrs. 2 cl or 1 3-hr cl.

310.01 Private Pilot Fundamentals UGRD 5
Study of flight fundamentals, aircraft operation, weather, and regulations essential for the private pilot.
Su, Au, Wi, Sp Qtrs. 5 cl, or 1 2-hr cl and 1 3-hr cl. Prereq: Eligible to enroll in Math 148. Not open to students with credit for 310.
Aviation

322 Aviation History UGRD 3
A survey of the evolution of aviation; emphasis on the development of the national aviation system and its social, economic, and political impact.
Wi Qtr. 2 cl. or 1 3-hr cl.

341 Private Pilot Flight Lab I UGRD 2
Laboratory course providing students an opportunity to learn the fundamentals of flight and airplane operation leading to solo flight.
Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

342 Private Pilot Flight Lab II UGRD 2
Laboratory course providing students an opportunity to learn the fundamentals of flight and airplane operation leading to Private Pilot certification.
Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 310 and 341. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

410 Aviation Weather UGRD 3
Overview of weather theory; identification of aviation weather hazards and methods for obtaining current weather data.
Au, Wi Qtrs. 3 or 1 3-hr cl. Prereq: 300, 310. Requires one unit of high school physics.

413 Commercial Pilot Fundamentals UGRD 3
A study of high-performance airplane operational considerations, systems, and components and the Federal Aviation Regulations which govern the operations, privileges, and limitations of commercial pilots.
Au, Sp Qtrs. 1 3-hr cl. Prereq: 410.

415 Instrument Flight Fundamentals UGRD 3
Study of flight by reference to instruments, IFR regulations, and procedures in the national airspace system.
Au, Sp Qtrs. 3 or 1 3-hr cl. Prereq: 410.

417 Advanced Multiengine Operations UGRD 2
The study of the principles of operation of the contemporary corporate airplane.
Wi Qtr. 1 2-hr cl. Prereq: 411.

421 Flight Instruction Methodology UGRD 3
Principles of teaching aeronautical subjects.
Au, Sp Qtrs. 3 1-hr cl. Prereq: 411, 413, and 415.

422 Instrument Instruction Methodology UGRD 2
Principles of teaching instrument flight theory and requirements.
* Sp Qtr. 1 2-hr cl. Prereq: 421.

441 Commercial Flight Lab 1 UGRD 3
Development of commercial pilot skills and experiences, fundamentals of instrument flight.
Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 342. Obtain equipment usage charge and permission slip at Ohio State Airport prior to scheduling.

442 Commercial Flight Lab 2 UGRD 3
Further development of commercial pilot skills and experience, completion of instrument flight instruction.
Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 415 and 441. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

443 Commercial Pilot Flight Lab 3 UGRD 3
Complex airplane (SEL) flight instruction.
Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 442. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

444 Commercial Pilot SEL Flight Lab 4 UGRD 3
SEL commercial and instrument flight skills.
Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 413 and 443. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

445 Commercial Pilot SEL Flight Lab 5 UGRD 3
Leads to SEL commercial certificate.
Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 444. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

446 Commercial Pilot MEL Flight Lab 4 UGRD 3
Development of MEL commercial pilot flight skills; leads to multi-engine rating.
Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 413 and 443. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

447 Commercial Pilot MEL Flight Lab 5 UGRD 3
Development of MEL instrument flight skills; leads to MEL instrument rating.
* Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 446. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

461 Flight Instructor ASEL Flight Lab UGRD 3
Development of skills and experience necessary for certification as flight instructor airplane SEL.
Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 422 and 445 or 447. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

462 Flight Instructor Instrument Airplane Flight Lab UGRD 3
Development of skills and experience necessary for flight instructor instrument rating.
Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 422 and 445 or 447. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

463 Flight Instructor AMEL Flight Lab UGRD 3
Development of skills and experience necessary for airplane MEL rating.
Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 421 and 447. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

489 Professional Practice in Industry UGRD 2
Actual employment in a co-op program in the aviation industry and the preparation of a report based on the work experience.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Admission to co-op program in aviation and written permission of dept. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

493 Individual Studies in Aviation UGRD 2-5
Individual Studies in Aviation.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

530 Aviation Regulation UGRD 3
Introduction to federal regulations with particular emphasis on Title 14 of the Code of Federal Regulations governing Aviation.
Au, Sp Qtrs. 3 or 1 3-hr d. Prereq: 310.01 or 310.02.

540 Aviation Human Factors UGRD 3
An examination of human factors problems in aviation safety including aircraft design, aviation systems design, and human behavior.
Au, Sp Qtrs. 3 cl or 1 3-hr d. Prereq: 300, 310, Stat 135.

550 Aviation Management UGRD 3
A blend of accepted business procedures and practical techniques applied to aviation management; includes general aviation, airlines, airports, aircraft, and air traffic control.
* Au, Sp Qtrs. 3 or 1 3-hr cl. Prereq: 300, 310 and Econ 200.

552 Airport Management UGRD 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.
Au, Sp Qtrs. 1 3-hr cl. Prereq: 550.

560 Aviation Safety UGRD 3
Review of safety concepts with emphasis on ground and flight safety.
Au, Wi Qtrs. 3 1-hr cl. Prereq: 540 or permission of instructor.

591 Flight Network Analysis and Optimization UGRD 3
Introduction to planning and operating an airline, including route analysis, scheduling, fleet planning, and maintenance.
Wi, Sp Qtrs. 2 1.5-hr cl. Prereq: 300 and 550.

593 Individual Studies in Aviation UGRD 2-5
Individual Studies in Aviation.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

650 Air Transportation Analysis I UGRD 3
Analysis and planning of air transportation systems; focus on air transportation supply and demand components, and examples from U.S. domestic and international airlines, passenger and cargo.
Au, Sp Qtrs. 3 or 1 3-hr d. Prereq: 550 and Econ 400 or Econ 201.

652 The International Aviation System UGRD 3
Overview of the international system: aeropolitical framework, air transport, air navigation, and contemporary issues.
Wi Qtr. 3 cl or 1 3-hr cl. Prereq: 550.

654 Airline Marketing UGRD 3
Contemporary marketing concepts and procedures and their applications in the airline industry with emphasis on domestic and international passenger analysis and service planning.
Wi Qtr. 3 cl or 1 3-hr cl. Prereq: 550.

674 Airport Systems Planning, Design, and Development UGRD 3
Comprehensive study of airport planning, design, and development to support commercial and general aviation.
Au Qtr. 3 cl or 1 3-hr cl. Prereq: 552 (recommended).

693 Individual Studies UGRD 2-5
Individual conferences, assigned readings and reports on advanced topics in aviation.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

694 Group Studies in Aviation UGRD 2-5
Group Studies in Aviation.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

699 Undergraduate Research in Aviation UGRD 1-5
Opportunity for undergraduate student to conduct research in Aviation.
Su, Au, Wi, Sp Qtrs. Prereq: Engineer 183. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.
Biochemistry

750 Air Transportation Analysis II UGRD 3
Application and use of specific analytical techniques for analyzing aviation data for decision analysis.
Wi Qtr. 3 cl or 1.5-hr cl. Prereq: 650 or permission of instructor.

783H Honors Research UGRD 2-5
A research investigation resulting in an honors project for a senior thesis.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

200H Early Experience in Research in Biochemistry: Seminar UGRD 2
Two quarter introduction to biochemical research through seminars and laboratory tours by faculty in the Department of Biochemistry. The second quarter will link with Biochem 201H and will involve a seminar and student presentations.
Wi Qtr. 1.5-hr cl. This course is graded S/U.

201H Early Experience in Research in Biochemistry: Laboratory UGRD 3
A laboratory supplement to Biochem 200H to introduce undergraduate to biochemical research.
Sp Qtr. Arr. Prereq: Biology 113 or Chem 121 and Biochem 200H. This course is graded S/U.

211 Elements of Biochemistry I UGRD 3
A survey of biochemistry in a two-quarter sequence stressing the qualitative rather than the quantitative approach.
Au Qtr. 3 cl. Prereq: Chem 102 or 122. Credit does not count toward a major in Biochem. This course is available for EM credit.

212 Elements of Biochemistry II UGRD 3
A continuation of 211.
Wi Qtr. 3 cl. Prereq: 211. Credit does not count toward a major in Biochem.

294 Group Studies UGRD 1-5
Group Studies.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. For different subject matter only.

511 Introduction to Biological Chemistry UGRD 5
An introductory course in biochemistry dealing with the molecular basis of structure and metabolism of plants, animals, and microorganisms.
Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: Chem 123 or 125 and 252, and 2 qtrs of biological sciences. The organic chemistry requirement (Chem 252) may also be satisfied by Chem 231 with a grade of at least C. This course is available for EM credit.

521 Introduction to Biological Chemistry: Laboratory UGRD 5
Assay techniques for chemical constituents and metabolic reactions of living cells. 511H (honors) may be available.
Wi, Sp Qtrs. 2 cl. 2 3-hr labs. Prereq: 511 or 613 or equiv. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

521H Introduction to Biological Chemistry: Laboratory UGRD 5
Assay techniques for chemical constituents and metabolic reactions of living cells.
Wi, Sp Qtrs. 2 cl. 2 3-hr labs. Prereq: Honors program or permission of department or instructor; 511 or 613 or equiv, and Chem 221. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

591 DNA Finger Printing Workshops in Columbus UGRD 2
Public Schools
A service learning course whereby undergraduates mentor high school students in molecular biology workshops.
Sp Qtr. Repeatable to a maximum of 6 cr hrs. Undergraduates present workshops in Columbus Public Schools. Cross-listed in Microbiology and Molecular Genetics. Service learning course. This course is graded S/U.

613 Biochemistry and Molecular Biology UGRD 4
An introductory course in biochemistry and molecular biology developing in three quarters the molecular basis of structure and function of living cells.
Au Qtr. 4 cl. Prereq: Chem 253 and 2 qtrs of biological sciences. Not open to students with credit for 511 without written permission of instructor. Not open to students with credit for 513. This course is available for EM credit.

614 Biochemistry and Molecular Biology UGRD 4
Continuation of 613.
Wi Qtr. 4 cl. Prereq: 613. This course is available for EM credit.

615 Biochemistry and Molecular Biology UGRD 4
Continuation of 614.
Sp Qtr. 4 cl. Prereq: 614. This course is available for EM credit.

693 Individual Studies UGRD 2-10
Individual Studies.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 40 cr hrs. for grad credit and a maximum of 20 cr hrs for undergrad credit. This course is graded S/U.

694 Group Studies UGRD 1-5
Group Studies.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

698.01 Study Tour: Domestic UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable for different titled study tours only. Repeatable.

698.02 Study Tour: Foreign UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable for different titled study tours only. Repeatable.

702 Molecular Genetics: Regulation of Gene Expression UGRD 3
Transcription, translation, and regulation of gene expression in prokaryotes and eukaryotes; emphasis on concepts and experimental analysis of gene regulatory mechanisms.
Au Qtr. 3 cl. Prereq: MolGen 701 or permission of instructor.

706 Advanced Biological Chemistry Lab UGRD 5
Advanced laboratory integrating recombinant DNA technology including cloning and mutagenesis with protein expression, purification, and characterization.
Au Qtr. 4-hr labs. Prereq: 511 and 521 or equiv or permission of instructor. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

708 Protein and Enzyme Laboratory UGRD 5
Purification, characterization, and study of the physical and catalytic properties of enzymes and proteins.
^ Au Qtr. 2 4-hr labs. Prereq: 521 and 761; or equiv; or permission of instructor.

710 Molecular Biology Laboratory UGRD 5
Isolation of recombinant plagne and plagne DNA, subdioning of DNA fragments, restriction enzyme analysis, nucleic acid hybridization, RNA metabolism.
Wi, Au Qtr. 2 4-hr labs. Prereq: 521 and 511 or 702; or equivs; or permission of instructor.

721.01 Physical Biochemistry I UGRD 3
Introduction to physical chemistry with emphasis on biological applications; designed for students in the life sciences.
Au Qtr. 3 cl. Prereq or concur: 511 or 613, Math 153 (254 recommended), and Physics 113 or 133; or permission of instructor.

721.02 Physical Biochemistry II UGRD 3
A continuation of 721.01.
Wi Qtr. 3 cl. Prereq: 511 or concur: 614 and 721.01; or permission of instructor.

721.03 Physical Biochemistry III UGRD 3
A continuation of 721.02.
Sp Qtr. 3 cl. Prereq: 721.02.

735 Plant Biochemistry I UGRD 3
The biochemistry of plant chloroplasts and mitochondria: photosynthesis, carbohydrate metabolism, sulfate and nitrate reduction, chlorophyll and heme synthesis, chloroplast development, respiration, and mitochondrial development.
^ Au Qtr. 3 cl. Prereq: 511 or 614. Not open to students with credit for PCMB 735. Cross-listed in PCMB.

736 Plant Biochemistry II UGRD 3
The biochemistry of plants with emphasis on the synthesis and structure of cell walls, lipids, secondary compounds, phytotormones, and nitrogen fixation.
^ Wi Qtr. 3 cl. Prereq: 735. Not open to students with credit for PCMB 735. Cross-listed in PCMB.

761 Advanced Biochemistry: Proteins UGRD 3
An advanced treatment of protein biochemistry.
Au Qtr. 3 cl. Prereq: 515 and Chem 253, 255, and 521; or equivs. Not open to students with credit for Chem 761 or MolBioCh 761. Cross-listed in Chemistry, and Molecular and Cellular Biochemistry.

762 Advanced Biochemistry: Enzymes UGRD 3
An advanced treatment of enzymeology.
Au Qtr. 2.5-hr cl. Prereq: 615 and Chem 253, 255, and 521; or equivs. Not open to students with credit for Chem 762 or MolBioCh 762. Cross-listed in Chemistry, and Molecular and Cellular Biochemistry.

763 Advanced Biochemistry: Membranes and Bioenergetics UGRD 2
An advanced treatment of membranes and bioenergetics.
Wi Qtr. 2 cl. Prereq: 615 and Chem 253, 255, and 521; or equivs. Not open to students with credit for Chem 763 or MolBioCh 763. Cross-listed in Chemistry, and Molecular and Cellular Biochemistry.
50 Biochemistry

765 Advanced Biochemistry: Physical Biochemistry UGRD 3
Nuclear magnetic resonance, optical spectroscopy, and mass spectroscopy. Sp Qtr. 1 2.5-hr cl. Prereq: 615 and Chem 253, 255, and 521; or equivs. Not open to students with credit for Chem 765 or MolBioCh 765. Cross-listed in Chemistry, and Molecular and Cellular Biochemistry.

766 Advanced Biochemistry: Nucleic Acids UGRD 3
Physico-chemical properties of nucleic acids and their polymers; chemistry, biochemistry, and structural biology of DNA and RNA. Wi Qtr. 3 cl. Prereq: 615 and Chem 253, 255, and 521; or equiv. Not open to students with credit for MolBioCh 766. Cross-listed in Molecular and Cellular Biochemistry.

770 Protein Engineering UGRD 3
Current research on genetic engineering of proteins for biotechnological and theoretical studies. Au Qtr. 2 1.5-hr cl. Prereq: 702, 761, and Micrbiol 690 or MolGen 701.

775 Biophysical Chemistry UGRD 3
Techniques and principles of physical biochemistry, emphasizing chromatography, electrophoresis, centrifugation, ultrafiltration, and circular dichroism. a Sp Qtr. 3 cl. Prereq: Introductory courses in biochemistry and physical chemistry or permission of instructor.

783H Honors Research UGRD 3-5
A program of reading and research for each student with individual conferences, reports, and honors thesis. Su, Au, Wi, Sp Qtrs. Arr. Prereq: 4th yr standing with a grade of A in at least half of the courses in Biochem 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. Repeatable to a maximum of 15 cr hrs. At least 2 qtrs are required of candidates for the degrees BA or BS with distinction in Biochem. Failure to receive a mark of S in this course is a disqualification for special honors. This course is graded S/U.

785 Research Principles and Techniques UGRD 2-10
Research Principles and Techniques. Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 40 cr hrs. for grad credit and a maximum of 20 cr hrs for undergrad credit.

795 Special Topics in Biochemistry UGRD 1-3
Lecture/discussion in a seminar format of publications, current research, or research techniques in biochemistry. Su, Au, Wi, Sp Qtrs. Arr. Prereq: 521 and 615; or permission of instructor. Repeatable to a maximum of 40 cr hrs. This course is graded S/U.

850 Seminar in Biological Chemistry GRAD 2
Seminar in Biological Chemistry. Au, Wi, Sp Qtrs. 1 or 2 cl. Repeatable to a maximum of 40 cr hrs. This course is graded S/U.

890 Interdepartmental Seminar in Molecular, Cellular, and Developmental Biology GRAD 2
Students will present oral reports and lead discussion on research progress in specific areas of developmental biology. a 1 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. Given cooperatively by Biochemistry, Molecular Genetics, Microbiology, and Plant Biology. This course is graded S/U.

900 Advanced Topics in Biochemistry GRAD 1-3
Advanced treatment of areas of current interest in biochemistry: topics will be announced each quarter. Su, Au, Wi, Sp Qtrs. Arr. Prereq: 615 or permission of instructor. Repeatable to a maximum of 20 cr hrs.

905 Bio-Macromolecular NMR Spectroscopy GRAD 3
Application of NMR spectroscopy to the study of biological macromolecules. Heteronuclear NMR, product operators, multidimensional spectra, proteins, nucleic acids, structure determination, dynamics, ligand complexes. Sp Qtr. Prereq: Grad status in Biochem, Biophys or Chem, or instructor permission.

999 Research in Biochemistry GRAD 1-18
Research for thesis or dissertation purposes only. Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

Biological Sciences: Interdisciplinary

100 Biological Sciences Survey UGRD 1
Academic requirements, University procedures, grading system, resources; student rights and responsibilities; overview of Biological Sciences areas of study, Arts and Sciences services. 100H (honors) may be available. Au Qtr. Not open to students with credit for AgrInt 100, ArtsCol 100.01 or 100.02. ArtsSci 100 100.01 or 100.02, Engineer 100, HumCol 100, MPSCol 100, SBSCol 100, or any decimal subdivision of UnivCol 100. This course is graded S/U.

100H Biological Sciences Survey UGRD 1
Academic requirements, University procedures, grading system, resources; student rights and responsibilities; overview of Biological Sciences areas of study, Arts and Sciences services. Au Qtr. Prereq: Honors program or permission of department or instructor. Not open to students with credit for AgrInt 100, ArtsCol 100.01 or 100.02, ArtsSci 100 or 100.01 or 100.02, Engineer 100, HumCol 100, MPSCol 100, SBSCol 100, or any decimal subdivision of UnivCol 100. This course is graded S/U.

293 Individual Studies UGRD 1-10
Individual Study projects in selected interdisciplinary topics in the Biological Sciences. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

294 Group Studies UGRD 2-5
Group studies of special interdisciplinary topics not otherwise offered in the Biological Sciences. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

489 Internship in the Biological Sciences UGRD 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 10 cr hrs. This course is graded S/U.

500 Biological Roots in England UGRD 3
A short-term study abroad course examining the history of biology in England. Wi Qtr. 3 cl. Prereq: 10 cr hrs of biological sciences.

693 Individual Studies UGRD 1-10
Designed to give a properly qualified student opportunity for independent reading, study or laboratory work in a specialized field of interest in the Biological Sciences. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

694 Group Studies UGRD 2-5
Designed to give groups of students an opportunity to pursue special studies not otherwise offered in the Biological Sciences. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

797 Interdepartmental Seminar GRAD 1-5
Two or more departments or colleges may collaborate in presenting seminars in subjects of mutual interest; topics to be announced. Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable by permission. This course is graded S/U.

101 Introductory Biology UGRD 5
Basic principles of biology: topics include the nature of science, organismal diversity, evolution, ecology, genetics, reproduction, cell structure and function. Su, Au, Wi, Sp Qtrs. 3 cl, 1-3 hr rec/lab; or 2 1.5-hr cl, 1-3 hr rec/lab. Prereq: Math 075 or 076 or 104 or Mathematics Placement Level R. Not open to students with credit for 113 or 115h, or Entomol 101, or PCBMB 101. Not intended for the student pursuing an undergraduate major in one of the biological sciences. This course is available for EM credit. GEC bio sci course. E101 may be available for honors embedded experience at the Newark Campus. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

102 Human Biology UGRD 5
Exploration of human biology; topics include structure and physiological function, reproduction and development, genetics and disease, ecology and evolution. Su, Au, Wi, Sp Qtrs. 3 cl or 2 1.5-hr cl, 1.2 hr film/video presentation. Prereq: 101. Not open to students with credit for 114 or 116h. Not intended for the student pursuing an undergraduate major in one of the biological sciences. This course is available for EM credit. GEC bio sci course.

103 Living Chemistry UGRD 5
Explores the nexus between biology and chemistry to advance understanding of biology studies in Biology 101, and to consider the relationship of biology to current issues. Wi Qtr. 3 cl, 2 1-hr rec. Prereq: 101 and concurrent enrollment in Chem 100. GEC bio sci course. Biology 103 is a sequence to Biology 101 and is part of a two-course cluster with Chem 100.

113 Biological Sciences: Energy Transfer and Development GRAD 5
Exploration of biology and biological principles; evolution and the origin of life, cell structure and function, bioenergetics, and genetics. A broad introduction to biology comprises both Biology 113 and 114. Su, Au, Wi, Sp Qtrs. 3 cl or 2 1.5-hr cl, 1.3 hr rec/lab, 1 hr rec. Prereq: Chem 101 or 121 or 201H. Not open to students with credit for 115h. This course and 114 provide a comprehensive bio- genet seq sequence in general biology. This course is available for EM credit. GEC bio sci course. NS Admis Cond course.

114 Biological Sciences: Form, Function, Diversity, and Ecology UGRD 5
Exploration of biology and biological principles; evolution and speciation, diversity in structure, function, behavior, and ecology among prokaryotes and eukaryotes. A broad introduction to biology comprises both Biology 113 and 114. Su, Au, Wi, Sp Qtrs. 4 cl, 1.3 hr lab, Prereq: 113. Not open to students with credit for 116h. This course is available for EM credit. GEC bio sci course. NS Admis Cond course.

115H Honors Biology I UGRD 5
Exploration of biology and biological principles; evolution and the origin of life, cell structure and function, bioenergetics, and genetics, with emphasis on current research. A broad introduction to biology comprises both Biology 115H and 116H.
Au, Wi Qtrs. 3 cl, 1 3-hr lab, 1 1-hr rec. Prereq: Chem 121 or 201H, and enrollment in an honors program. Not open to students with credit for 113. Intended for the undergraduate student pursuing a major in the life sciences. GEC bio sci course. NS Admin Cond course.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://register.osu.edu.

116H Honors Biology II UGRD 5
Exploration of biology and biological principles; evolution and specialization, diversity in structure, function, behavior and ecology among prokaryotes and eukaryotes, with emphasis on current research. A broad introduction to biology comprises both Biology 115H and 116H.
Wi, Sp Qtrs. 3 cl, 1 3-hr lab, 1 1-hr rec. Prereq: 115H. Not open to students with credit for 114. GEC bio sci course. NS Admin Cond course.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://register.osu.edu.

294 Group Studies UGRD 2-5
Group studies of special topics not otherwise offered in Biology. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

299 Introduction to Research UGRD 1-15
Introduction to undergraduate research or creative activities on various topics. Prereq: Permission of Instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

350 The Biology of Hope and Belief UGRD 5
Examines evolutionary significance of hope and near universal desire to believe in a supernatural deity from multiple perspectives and details the neurochemistry of both phenomena.
Wi Qtr. GEC bio sci course.

401 Integrated Biology I UGRD 5
A case studies approach is used to gain a better understanding of biological concepts and principles. This course is designed for biology majors.
Au, Wi Qtrs. Prereq: Biology 113 or 119H and 114 or 116H and Chem 123 and Math 150; or permission of instructor.

402 Integrated Biology II UGRD 5
A case studies approach is used to gain a better understanding of biological concepts and principles. This course is designed for biology majors. Prereq: 401; and Chem 123; and Math 150; or permission of instructor.

597 Biology of Human Diversity: Race, Gender, and Ethnicity UGRD 5
Historical perspectives on contemporary issues in human biology and biocultural problems. Prereq: 10 or hrs of biological sciences course work and sr standing. GEC social diversity in the US and contemporary world course.

693 Individual Studies UGRD 1-5
A program of individual research in the biological sciences appropriate for the student's needs. Prereq: 113 or 119H, and 114 or 116H, and permission of advisor and supervising instructor. Biology majors carrying out research in the Biological Sciences should register for 693 in supervising instructor's dept. Repeatable to a maximum of 20 cr hrs. Not more than 5 or hrs of 693, 699, or 783H may be counted toward an undergraduate major in biology. This course is graded S/U.

694 Group Studies UGRD 1-5
Group studies of special topics not otherwise offered in Biology. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

697 Study at a Foreign Institution UGRD 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Prereq: 113 or 119H, and 114 or 116H, and permission of advisor and supervising instructor. Biology majors carrying out research in the Biological Sciences should register for 699 in supervising instructor's dept. Not more than 5 or hrs of 693, 699 or 783H may be counted toward an undergraduate major in biology. This course is graded S/U.

699 Undergraduate Research in Biology UGRD 1-15
Undergraduate research in biology.
Au, Wi, Sp Qtrs. Prereq: Permission of adviser and supervising instructor. Repeatable to a maximum of 15 or hrs. Biology majors carrying out research in the Biological Sciences should register for 699 in supervising instructor's dept. Not more than 5 or hrs of 693, 699 or 783H may be counted toward an undergraduate major in biology. This course is graded S/U.

701 Biology College Teaching GRAD 3
Students take a scholarly approach to studying theory-based methods to help undergraduates learn biology. Students consider the methods as an instructor, peer reviewer, and student. Offered only to graduate students in the Biological Sciences.

702 Topics in Biology Teaching UGRD 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. Prereq: Completion of course work for Regents requirements, product documentation, ethics. Application of design principles via student team projects to aid the disabled. Prereq: Sr standing in BiomedEd and completion of at least 2 BiomedEd domain classes; concour: BiomedEd 503. First BiomedEd capstone course.

783H Honors Research UGRD 1-5
A program of individual research in the biological sciences appropriate for the student's needs and culminating in an honors thesis. Prereq: 113 or 115H, and 114 or 116H, and permission of adviser and supervising instructor. Biology majors carrying out research in the Biological Sciences should register for 783H in supervising instructor's dept. Repeatable to a maximum of 20 cr hrs. Not more than 5 or hrs of 693, 699, or 783H may be counted toward an undergraduate major in biology. This course is graded S/U.

Biomedical Engineering
202 Introduction to Biomedical Engineering UGRD 3
Introduction to the engineering aspects of life science, utilizing lectures from engineering, medicine, and life science.
Wi Qtr. Prereq: MechEng 410 or equiv; Biology 113 or equiv; Physics 132; prereq or concour Math 415; or permission of instructor. Open only to BiomedEd undergrad students.

205 Numerical Simulations in Biomedical Engineering UGRD 2
Computer based simulations for problems in biomedical engineering. Wi Qtr. Prereq: Engineer 183, Biology 113, MechEng 410. Concour: 202 and Math 415; or permission of instructor.

402 Biomedical Engineering Laboratory UGRD 2
Measurement and interpretation of data from living systems; measurement and analysis of signals generated by bioelectrical potentials, and their relationship to human physiology and function.
Wi Qtr. 1 hr lecture, 3 hr lab. Prereq: 202, ECE 300, Stat 427, EEOB 232; concour EEOB 415; or permission of instructor.

403 Quantitative Physiology UGRD 4
Introducing and building on fundamentals of control system theory. Quantitative models of physiological systems will be developed and studied.
Sp Qtr. 4 1-hr cl. Prereq: 205; EEOB 232 and 415; Math 415.

411 Bioimaging UGRD 4
Introduction to medical imaging techniques, including data collection and image processing for projection x-ray, computed tomography, ultrasonic, and magnetic resonance.
Wi, Sp Qtrs. 2 2-hr cl. Prereq: 202; or 205; Physics 133; Math 415, EEOB 232; or permission of instructor. Biomed E Bioimaging "domain class".

421 Biotransport UGRD 4
Integrating fundamental engineering and life science principles to cover key mass plus momentum transport concepts, and contemporary applications in biomedical engineering.
Wi, Sp Qtrs. 2 2-hr cl. Prereq: 202; or 410; Math 415; MechEng 500; EEOB 232; concour: EEOB 415; or permission of instructor. Biomed E Biotransport "domain course".

431 Biomaterials UGRD 4
Review of basic concepts of materials science; biocompatibility and biological reactions to implanted materials; natural biomaterials and synthetic materials used in biological applications.
Wi, Sp Qtrs. 2 2-hr cl. Prereq: 202; or 500; MatSciEn 205. Math 415, MechEng 420, EEOB 232, and concour EEOB 415; or permission of instructor. Biomed E Biomaterials "domain class".

441 Biomechanics UGRD 4
Mechanical characterization of biomedical tissues at the organ and system level; exploration of biomechanical factors on physiological and pathological conditions.
Wi, Sp Qtrs. 2 2-hr cl. Prereq: 202; or 410; MechEng 420, EEOB 232, and concour EEOB 415; or permission of instructor. Biomed E Biomechanics "domain course".

451 Molecular, Cell, and Tissue Engineering UGRD 4
Introduction to the incorporation of living components and compatible biomaterials to repair or replace biological functions.
Wi, Sp Qtrs. 2 2-hr cl. Prereq: 202; or 410; Math 415, EEOB 232, Biochem 511, and EEOB 415; or permission of instructor. Biomed E Molecular, Cell, Tissue Engineering "domain course".

461 Biomedical Micro/Nanotechnology UGRD 4
Micro/nanotechnology focusing on integrating basic physics, chemistry, biochemistry and physiology of micro- and nanoscale devices in biomedical applications.
Wi, Sp Qtrs. 2 2-hr cl. Prereq: 202; or 500; MatSciEn 205. Biochem 511, and EEOB 232; or permission of instructor. Biomed E Micro/Nano tech "domain course".

471 BME Domain Course Lab UGRD 0
Hands-on lab that teaches students technical skills associated with a specific BME domain. Taken as part of BME Domain course. Concour: 411, 421, 431, 441, 451, or 481; or consent of instructor.

500 Introduction to Biomedical Engineering UGRD 3
Introduction to the engineering aspects of life science, utilizing lectures from medicine, engineering, and life science.
Wi Qtr. 2 1.5-hr cl. Prereq: MechEng 410, Biology 113, Physics 132, Math 254, and concour Math 415; or permission or instructor. Biomed E Micro/Nano tech "domain course".

501 Biomedical Engineering Design I UGRD 3
Biomedical device design, prototyping, testing, material considerations, regulatory requirements, product documentation, ethics. Application of design principles via student team projects to aid the disabled.
Au Qtr. 2 2-hr cl, 1 3-hr lab. Prereq: Sr standing in BiomedEd and completion of at least 2 BiomedEd domain classes; concour: BiomedEd 503. First BiomedEd capstone course.
52 Biomedical Engineering

502 Biomedical Engineering Design II UGRD 5
Biomedical device design, prototyping, testing, material considerations, regulatory requirements, product documentation, ethics. Application of design principles via student team projects to aid the disabled. Wi Qtr: 2-2-hr cl, 2-3-hr labs. Preqc: 501. Continuation of BiomedE design capstone.

503 Professional Development in Biomedical Engineering UGRD 1
Development of professional skills; engineering economy; project planning; ethics, best business practices in biomedical engineering. Preqc or concrn: 501.

565.01 Biomedical Engineering Design I UGRD 3
Introduction to design principles, biomedical device design, technical writing and communication skills, group management, regulatory and patenting considerations, and product documentation via aid to disabled.
Au Qtr. Preqc: 565.00. This course is Progress (P) graded, with a grade rendered upon completion of 565.03.

565.02 Biomedical Engineering Design II UGRD 3
Second course in a three-course BME capstone sequence. Continuation of group design problem in the area of projects focused on assisting clients with disabilities.
Wi Qtr. Preqc: 565.01. This course is Progress (P) graded, with a grade rendered upon completion of 565.03.

565.03 Biomedical Engineering Design III UGRD 3
Third course in a three-course BME capstone sequence. Continuation of group design problem in the area of assisting clients with disabilities.
Sp Qtr. Preqc: 565.02.

571 Introduction to Bioinstrumentation UGRD 3
Measurement and analysis of signals generated by biomedical transducers and bioelectric potentials, and their relationship to human physiology and bodily function.
Wi Qtr. 2.1-5-hr cl. Preqc: 400, ElecEng 300 or equiv.

581.01 Biomedical Engineering Seminar I UGRD 0
Weekly biomedical engineering seminars by students and faculty.
Au, Wi, Sp Qtrs. 1-hr cl. Preqc: BiomedE or standing. 1 credit awarded upon completion of 3 quarters of 581. (581.01-581.03). This course is graded S/U.

581.02 Biomedical Engineering Seminar II UGRD 0
Weekly biomedical engineering seminars by students and faculty.
Au, Wi, Sp Qtrs. 1-hr cl. Preqc: 581.01. 1 credit awarded upon completion of 3 quarters of 581 (581.01-581.03). This course is graded S/U.

581.03 Biomedical Engineering Seminar III UGRD 1
Weekly biomedical engineering seminars by students and faculty.
Au, Wi, Sp Qtrs. 1-hr cl. Preqc: 581.02. 1 credit awarded upon completion of 3 quarters of 581 (581.01-581.03). This course is graded S/U.

600 Fundamentals of BME Graduate Education UGRD 3
Multi-lecture survey course designed to introduce fundamental technologies and design methodologies relevant to biomedical engineering product development and clinical applications.
Au Qtr. 2.1-5-hr cl. Preqc: Grad standing or permission of instructor.

611 Biomedical Microscopic Imaging UGRD 3
Principles and description of microscopy techniques (light, electron and atomic force microscopy) for application to biomedical research.
Sp Qtr. Preqc: 411 or equiv, and senior standing; or graduate standing or permission of instructor.

612 Biomedical Optics UGRD 3
Introduction to clinical and technical aspects of biomedical optics.
Au Qtr. Preqc: 411 or equiv, and senior standing; or graduate standing or permission of instructor.

621 Advanced Biotransport GRAD 3
Theoretical and phenomenological derivation and applications of transport (momentum, mass, energy) concepts important for biological systems and motivated by biomedical problems.
Au Qtr. Preqc: 421 or equiv and senior standing; or graduate standing or permission of instructor.

631 Advanced Biomaterials UGRD 3
Review of basic concepts of material science; biocompatibility and biological reactions to implanted materials; natural biomaterials and synthetic materials used in biomedical applications.
Sp Qtr. 2.1-5-hr cl. Preqc: 431 or equiv and senior standing; or graduate standing or permission of instructor.

632 Biopolymer Structure and Function GRAD 3
Discussion of biopolymers, critical for normal body function, including those involved in bone structure, coagulation, elasticity, extracellular matrix, genetics.
Sp Qtr. 2.1-5-hr cl. Preqc: 431 or equiv, Chem 231 or equiv, and senior standing; or graduate standing or permission of instructor.

641 Tissue Mechanics GRAD 3
Mechanical characterization of biological tissues at the organ and system level; exploration of interactions with physiological and pathological conditions.
Wi Qtr. 2.1-5-hr cl. Preqc: 441 or equiv and senior standing; or graduate standing or permission of instructor.

642 Mechanobiology UGRD 3
Explores biological effects of mechanical forces at molecular, cellular, and tissue level in five specific tissues (blood vessels, cartilage, bone, skeletal and cardiac muscle).
Au Qtr. Preqc: Grad standing or permission of instructor.

643 Finite Element Applications in Biomedical Engineering UGRD 3
The finite element method for solution of differential equations for modeling biomedical engineering applications (implemented using COMSOL Multiphysics software).
Au Qtr. Preqc: Differential Equations (Math 415 or equivalent); Physiology (EEOB 415 or equivalent); or permission of instructor.

651 Advanced Tissue Engineering UGRD 3
Introduction to the incorporation of living components and compatible biomaterials to study, repair, or replace biological functions.
Sp Qtr. Preqc: 451 or equiv and senior standing; or graduate standing or permission of instructor.

652 Cell Engineering UGRD 3
Cell-related phenomena important to tissue engineering and medicine: Cell-surface and cell-cell interactions, chemical/mechanical effects on cell function; cell engineering applications.
Au Qtr. Preqc: Chem 122 or equivalent; or permission of the instructor.

661 Biomedical Microdevices GRAD 3
Basics of the application of microdevices to biomedical uses, including review of microfabrication and biophysical chemistry. Discussion and analysis of current research.
Sp Qtr. 2.1-5-hr cl. Preqc: 461 and senior standing; or graduate standing or permission of instructor. This course will enable students to understand requirements, classes, and properties of biomaterials used in effective device design.

662 Introduction to Nanofabrication and Nanomanufacturing UGRD 3
Novel nanomanufacturing techniques will be introduced with a focus on top down approaches and a brief introduction of bottom up approaches.
Au Qtr. 3 cl. Preqc: ECE 331 or MatSci 205 or permission of instructor. Not open to students with credit for ChBE 632 or ECE 632 or IndEng 652 or. Cross-listed with ChBE 632, ECE 632, and IndEng 652.

679 Medical Devices and Design UGRD 3
Introduction to essential processes involved in medical device development cycle including basic skills and tools necessary for design, fabrication, testing and commercialization.
Wi Qtr. Preqc: 202 or 500 or equivalent, and senior standing; or graduate standing or permission of instructor.

693 Individual Studies in Biomedical Engineering UGRD 1-5
Provides the opportunity to pursue special studies or research in biomedical engineering not otherwise covered.
Su, Au, Wi, Sp Qtrs. Preqc: Permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

694 Group Studies in Biomedical Engineering UGRD 1-5
Provides groups of students opportunities to pursue special studies not otherwise offered.
Su, Au, Wi, Sp Qtrs. Preqc: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

701 Survey of Cardiovascular Bioengineering UGRD 3
Overview of biomedical engineering approaches in imaging and intervention in cardiovascular medicine.
Wi Qtr. 2.1-5-hr cl. Preqc or concrn: 400; or grad standing in engineering, medicine or science; or permission of instructor.

706 Medical Imaging UGRD 3
Introduction to medical imaging techniques, including data collection and image processing for projection x-ray, computed tomography, ultrasonic, and magnetic resonance.
Au, Sp Qtrs. 3 cl. Preqc: ECE 352, Preqc or concrn: ECE 562, or grad standing in ElecEng/ECE or BiomedE. Not open to students with credit for ECE 706. Cross-listed in Electrical and Computer Engineering.

716 Biomedical Ultrasound GRAD 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.
Sp Qtr. 2.1-5-hr cl. Preqc: 411 or equiv and senior standing; or grad standing or permission of instructor.

730 Soft-Tissue Biomaterials UGRD 3
Study of soft-tissue biomaterials and their uses, including tissue engineering, drug delivery, cosmetic surgery and prosthetics.
Wi Qtr. 2.1-5-hr cl. Preqc: 631 or permission of instructor. This course will enable students to understand requirements, classes, and properties of biomaterials used in effective device design.

733 Hard-Tissue Biomaterials UGRD 3
Structure and material properties of musculoskeletal materials and the synthetic materials used in musculoskeletal reconstruction.
Sp Qtr. 2.1-5-hr cl. Preqc: 631 or permission of instructor.

734 Biocompatibility GRAD 1
Interactions between surgically implanted materials and human tissues are presented.
Wi Qtr. Preqc: Grade standing or permission of instructor.
740  Cellular Mechanics  UGRD  3
How the mechanical properties of cells influence biological functions, emphasizing biomembranes, cell-cell and cell-substrate adhesion sites and cytoskeletal mechanics.
Au Qtr. Prereq: 441 or MechEng 420 or equiv, and senior standing; or graduate standing or permission of instructor.

761  Biomedical Nanotechnology  UGRD  3
Survey of biomedical technology with particular emphasis on nanoscale mass transport, nanomechanics, nanofluidics and medical therapeutics.
Sp Qtr. 2 1.5-hr cl. Prereq: 461 or equiv and senior standing; or grad standing or permission of instructor. Cross-listed with ChemEng 769.

763  Introduction to Micro and Nano Fluidics  UGRD  3
Introduction to basic principles of incompressible fluid mechanics appropriate to micro and nano fluids.
Au Qtr. Prereq: 2 1.5-hr cl. Prereq: MechEng 504 or permission of instructor. Not open to students with credit for MechEng 715. Cross-listed with MechEng 715.

764  Advanced Biomedical Nanotechnology  UGRD  3
Follows BME 761, emphasizing the contribution of biotechnology, pharmacology, toxicology and immunology to biomedical nanotechnology, and providing intensively interactive current literature and presentation experience.
Sp Qtr. Prereq: 761 or permission of instructor.

765  Cellular Nanotechnology  UGRD  3
An introduction and overview of the role of nanotechnology in soft materials and biotechnology. Applications in polymer devices for biomedical and diagnostics are emphasized.
Prereq: Sr or grad standing in engineering or permission of instructor. Not open to students with credit for CHBE 735. Cross-listed with CHBE 735.

768  Biomedical Microtransducers  UGRD  3
Operational principles of microsensors and microactuators, fabrication processes, and the interface of microtransducers with biological subjects.
Au Qtr. Prereq: Junior, Senior, or Grad standing in Engineering or Science; or permission of instructor.

771  Biomedical Instrumentation  UGRD  3
Study of instruments and measurement techniques used in obtaining data from living systems.
Au Qtr. 1 2-hr cl and 2 1.5-hr lab. Prereq: 402 or equiv, and senior standing; grad standing or permission of instructor.

783H  Undergraduate Honors Program Research  UGRD  1-3
Honors program students are offered the opportunity to pursue an independent distinction project/research. Student presentations and thesis writing included.
Su, Au, Wi, Sp Qtrs. Prereq: Sr standing in BiomedE and GPA of at least 3.4 and permission of instructor. Repeatable to a maximum of 9 or hrs.

793  Individual Studies in Biomedical Engineering  UGRD  1-15
Individual Studies in Biomedical Engineering.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

813  Magnetic Resonance Spectroscopy and Imaging I  GRAD  3
Presentation of the basic principles of MRI/MRS, including basic MR physics, pulse sequences, adiabatic excitation coil design, MR hardware image formation, localized spectroscopy.
Wi Qtr. 2 1.5-hr lectures. Prereq: Grad standing and permission of instructor. Cross-listed in Radiology.

814  Magnetic Resonance Spectroscopy and Imaging II  GRAD  3
Presentation of the basic principles of MRS/MRI, including basic adiabatic MR physics, pulse sequences, adiabatic excitation coil design, MR hardware image formation, localized spectroscopy.
Sp Qtr. 2 1.5-hr lectures. Prereq: 813, grad standing and permission of the instructor. Cross-listed in Radiology.

881  Seminar in Biomedical Engineering I  GRAD  0
Weekly seminars by students and faculty.
Au, Wi, Sp Qtrs. Required of all BiomedE students. Final grade awarded upon completion of 3 quarters. All BiomedE students must complete the series of 881 classes for 2 hrs credit. This course is graded S/U.

882  Seminar in Biomedical Engineering II  GRAD  0
Weekly seminars by students and faculty.
1 hr cl. Prereq: 881.01. Required of all BiomedE students. Final grade awarded upon completion of 3 quarters. All BiomedE students must complete the following series of 881 classes for 2 hrs credit. This course is graded S/U.

883  Biomedical Engineering Research Ethics  GRAD  3
Introduction to professional and ethical issues confronting biomedical research and researchers, and approaches to address such issues.
Au Qtr. 1 3-hr cl. Prereq: Grad or professional standing; or permission of instructor. Not open to students with credit for BiomedE 751 or Pharmcol 751.

891  Interdisciplinary Seminar on Biomedical Images  GRAD  1-2
Graduate seminar for Graduate Interdisciplinary Specialization in Comprehensive Engineering and Science of Medical Images.
Au, Wi, Sp Qtrs. 1 cl. Prereq: Grad standing. Cross-listed in Biomedical Informatics, Biophysics, Computer Science and Engineering, Electrical and Computer Engineering, Integrated Biomedical Science, Pathology, Radiology, Statistics, and Vision Science. Repeatable to a maximum of 3 or hrs. This course is graded S/U.

894  Group Studies in Biomedical Engineering  GRAD  1-18
Provides graduate students with an opportunity to pursue special studies not otherwise offered. Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 18 or hrs.

900  Advanced Topics in Biomedical Engineering: Cardiovascular Fluid Mechanics, Transport and Imaging  GRAD  1-3
Advanced study of topics of special interest in Biomedical Engineering: Cardiovascular Fluid Mechanics, Transport and Imaging.
Prereq: BiomedE grad standing or permission of instructor. Repeatable to a maximum of 24 or hrs. This course is graded S/U.

900.03 Advanced Topics in Biomedical Engineering:Sensory Integration, Neural Networks and Life-Cycle Design  GRAD  1-3
Advanced study of topics of special interest in Biomedical Engineering: Sensory Integration, Neural Networks and Life-Cycle Design.
Prereq: BiomedE grad standing or permission of instructor. Repeatable to a maximum of 24 or hrs. This course is graded S/U.

900.04 Advanced Topics in Biomedical Engineering: Hard-Tissue Biomaterials  GRAD  1-3
Advanced study of topics of special interest in Biomedical Engineering: Hard-Tissue Biomaterials.
Prereq: BiomedE grad standing or permission of instructor. Repeatable to a maximum of 24 or hrs. This course is graded S/U.

900.05 Advanced Topics in Biomedical Engineering: Optical Techniques, Lasers, and Tissue Response  GRAD  1-3
Advanced study of topics of special interest in Biomedical Engineering: Optical Techniques, Lasers, and Tissue Response.
Prereq: BiomedE grad standing or permission of instructor. Repeatable to a maximum of 24 or hrs. This course is graded S/U.

999  Research in Biomedical Engineering  GRAD  1-18
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

Biomedical Informatics

710  Introduction to Clinical Informatics  GRAD  3
A survey of biomedical informatics theories and methods employed in the design, implementation and management of clinical information systems.
Wi Qtr. 2 1.5-hr cl. Prereq: Permission of instructor.

720  Introduction to Imaging Informatics  GRAD  3
The purpose of this course is to teach students from different backgrounds the role of imaging in biomedical research, decision support and personalized medicine.
Wi Qtr. 2 1.5-hr cl. Prereq: Permission of instructor.

730  Biomedical Informatics I  GRAD  3
Introduces students to basic topics of bioinformatics including sequence analyses, proteomics, microarrays, regulatory networks, sequence and protein databases, etc.
Au Qtr. Prereq: CSE 230. Not open to students with credit for IBGP 730. Cross-listed in Biomedical Informatics.

731  Biomedical Informatics II  GRAD  3
Continuation of Biomedical Informatics I.
Wi Qtr. Prereq: 730 and/or CptrInf 230. Not open to students with credit for IBGP 731. Cross-listed in Integrated Biomedical Science.
54 Biomedical Informatics

740 Introduction to Translational Informatics MED 3
A survey of biomedical informatics theories and methods employed in the design, implementation, and management of translational research information systems.
Su, Au Qtr. 2 1.5-hr cl. Prereq: Permission of instructor.

793 Individual Studies in Biomedical Informatics GRAD 1-15
A research project will be assigned by a faculty member to meet the individual student's educational goals.
Su, Au, Wi, Sp Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 60 cr hrs.
This course is graded S/U.

810 Advanced Topics Clinical Informatics GRAD 3
An in-depth review of practical theories and methods employed in the design, implementation, and management of complex clinical information systems.
Wi Qtr. 2 1.5-hr cl. Prereq: 710 or permission of instructor.

820 Biological and Medical Image Analysis GRAD 3
Provides a comprehensive review of key techniques for analyzing biomedical images, especially histological and microscopic images using an imaging informatics approach.
Wi Qtr. 2 1.5-hr cl. Prereq: 720 or permission of instructor.

830 Systems Biology Analyses MED 3
Critical analysis of experiments in systems biology.
Sp Qtr. 2 1.5-hr cl. Prereq: 730 or IBGP 705, or permission of instructor.

840 Advanced Topics in Biomedical Data Management GRAD 3
An in-depth review of latest developments in the areas of biomedical data management technologies, tools, middlewares that support translational studies.
Wi Qtr. 2 1.5-hr cl. Prereq: 740 or permission of instructor.

881 Seminar in Biomedical Informatics GRAD 2
Faculty and outside speakers will give presentations on current BMI research and theory. Alternate classes will consist of journal-club style discussions moderated by faculty.
Su, Au, Wi, Sp Qtr. 2 cl. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.
This course is graded S/U.

891.01 Interdisciplinary Seminar on Biomedical Images GRAD 1-2
Graduate seminar for Graduate Interdisciplinary Specialization in Comprehensive Engineering and Science of Medical Images.
Repeatable to a maximum of 3 cr hrs.
This course is graded S/U.

999 Research in Biomedical Informatics GRAD 1-15
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtr. Prereq: Permission of instructor. Repeatable. This course is graded S/U.

Biomedical Science

100 Biomedical Science Survey UGRD 1
Academic requirements and resources, careers in healthcare, university policies, student rights and responsibilities. 100H (honors) may be available.
Au Qtr. 1 1.5-hr cl. Prereq: Admission to the Biomedical Science major or permission of instructor.

180.01 Reading and Analyzing the Biomedical Literature I UGRD 2
First of a two part seminar series: Introduce students to the process of searching the literature in the Biomedical Sciences and determining its relevance and validity.
Wi Qtr. 1 2-hr cl. Prereq: Admission to the Biomedical Science major or permission of instructor. This course is graded S/U.

180.02 Reading and Analyzing the Biomedical Literature II UGRD 1
Second of a two part seminar series: Continues the process of searching the literature in the Biomedical Sciences for relevance and validity and begins critiquing selected research articles.
Sp Qtr. 1 2-hr cl. Prereq: Admission to the Biomedical Science major or permission of instructor. This course is graded S/U.

220.01H Honors Reading and Analyzing the Biomedical Literature I UGRD 2
A two part seminar series designed to introduce students to the process of searching the literature in the biomedical sciences, determining its validity, and critiquing. Introduce students to the process of searching the literature in the Biomedical Sciences and determining its relevance and validity.
Wi Qtr. 1 2-hr cl. Prereq: Admission to the Biomedical Science major or permission of instructor. May be available to students enrolled in an honors program or by permission of dept or instructor. This course is graded S/U.

220.02H Honors Reading and Analyzing the Biomedical Literature II UGRD 2
A two part seminar series designed to introduce students to the process of searching the literature in the biomedical sciences, determining its validity, and critiquing. Introduce students to the process of searching the literature in the Biomedical Sciences and determining its relevance and validity.
Sp Qtr. 1 2-hr cl. Prereq: Admission to the Biomedical Science major or permission of instructor. This course is graded S/U.

320.01H Honors Introduction to Biomedical Research I UGRD 1
Two part seminar series introducing students to the process of searching the literature in the Biomedical Sciences for relevance and validity and begins critiquing selected research articles.
Su Qtr. 1 1-hr cl. Prereq: 220.01H and admission to the Biomedical Science major or permission of instructor; honors program or permission of department or instructor. This course is graded S/U.

320.02H Honors Introduction to Biomedical Research II UGRD 1
Two part seminar series introducing students to the departments in the School of Biomedical Science and the the six signature programs of the Medical Center. First course in a two part seminar series; introduces students to three of the six OSUMC signature programs and various departments in the School.
Au Qtr. 1 1-hr cl. Prereq: Admission to the Biomedical Science major or permission of instructor; honors program or permission of department or instructor. This course is graded S/U.

370 Introduction to Biomedical Ethics UGRD 4
Course highlights the importance of ethics in research and why bioethics is relevant to personal decision making, policy formation, public regulation, and the law.
Au Qtr. Prereq: Chemistry 123, Biology 114, admission to the Biomedical Science Major, Medical Admission Pathway; or permission of instructor.

480H Biomedical Science Laboratory Techniques UGRD 3
Provide biomedical science students with the necessary background and experience in basic cellular and molecular techniques, which are in general use in most research laboratories.
Sp Qtr. 2 3-hr labs. Prereq: Admission to the Biomedical Science major or permission of instructor; honors program or permission of department or instructor.

521 Concepts in Healthcare I: Humanistic and Social Issues in Medicine and Biomedical Students will examine the humanistic, behavioral, and social aspects of health care with an emphasis on effective communication with patients, families and health professionals.
Au Qtr. 2 1.5-hr cl. Prereq: 4th year standing in Biomedical Science major or permission of instructor.

522 Concepts in Healthcare II: Introduction to Policy Issues Related to Health Care Students will gain a comprehensive understanding of the political, social and economic forces that have shaped health care policy in the United States.
Wi Qtr. 2 1.5-hr cl. Prereq: 4th year standing in the Biomedical Science major or permission of instructor.

581 Special Topics in Biomedical Science: Immunology and Infectious Disease Introduction to the study of the body’s defenses against infection and disease.
Su, Au Qtr. 1 1.5-hr cl. Prereq: 4th year standing in Biomedical Science major or permission of instructor.

582 Special Topics in Biomedical Science: Genetics and Neurological Diseases Introduction to genetics and neuroscience disorders, including: normal functions prior to disease onset, epidemiology pathology and treatment and current and future research efforts.
Wi Qtr. 2 1.5-hr metings. Prereq: 4th year standing in Biomedical Sciences or permission of instructor.

583 Special Topics in Biomedical Science: Cancer Research: Genetic Factors and Environmental Introduction to genetics and environmental factors associated with cancer development.
Wi Qtr. 2 1.5-hr cl. Prereq: 4th year standing in Biomedical Science major or permission of instructor.

593 Individual Studies UGRD 1-5
A program of individual research or study in the biomedical sciences.
Su, Au, Wi, Sp Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.
This course is graded S/U.

694 Group Studies UGRD 1-5
Group Studies of special topics related to Biomedical Science; topics vary.
Prereq: Admission to the Biomedical Science plan or permission of the instructor. Repeatable to a maximum of 20 cr hrs.
Undergraduate Research

Undergraduate Research in a Biomedical Science Laboratory. This course is graded S/U. Repeatable to a maximum of 20 cr hrs.

Honors Research Experience I

A three part research sequence designed to give students an in depth experience in the research process.

First course in a three part research sequence designed to give students an in depth experience in the research process.

Su, Au, Wi, Sp Qtrs. Prereq: Admission to the Biomedical Science major or permission of instructor. Repeatable to a maximum of 10 cr hrs.

Honors Research Experience II

A three part research sequence designed to give students an in depth experience in the research process.

Second course in a three part research sequence designed to give students an in depth experience in the research process. Repeatable to a maximum of 10 cr hrs.

Su, Au, Wi, Sp Qtrs. Prereq: Admission to the Biomedical Science major or permission of instructor.

Honors Research Experience III

A three part research sequence designed to give students an in depth experience in the research process.

Third course in a three part research sequence designed to give students an in depth experience in the research process. Repeatable to a maximum of 10 cr hrs.

Su, Au, Wi, Sp Qtrs. Prereq: Admission to the Biomedical Science major or permission of instructor.

Graduate seminar for Graduate Interdisciplinary Specialization in Comprehensive Engineering 891.01 Interdisciplinary Seminar on Biomedical Images GRAD 1-2 Continuation of 813.

Su, Au Qtr. 2 1.5-hr cl or 3 cl. Prereq: Chem 521 or equiv, Biochem 511 or equiv, or permission of instructor. Repeatable to a maximum of 5 cr hrs.

Biomedical Imaging II

813 Magnetic Resonance Spectroscopy and Imaging I

Basic principles of MRI/MRS including basic MR physics, pulse sequences, adiabatic excitation coil design, MR hardware, image formation, localized spectroscopy.

Au Qtr. 2 1.5-hr cl or 3 cl. Prereq: Chem 521 or equiv, Biochem 511 or equiv, grad standing, and permission of instructor. Not open to students with credit for BiomedE 813 or Radiolgy 613. Cross-listed in Biomedical Engineering and Radiology.

814 Magnetic Resonance Spectroscopy and Imaging II

Continuation of 813.

Wi Qtr. 2 1.5-hr cl or 3 cl. Prereq: 813 or BiomedE 813 or Radiolgy 613, grad standing, and permission of instructor. Not open to students with credit for BiomedE 814 or Radiolgy 814. Cross-listed in Biomedical Engineering and Radiology.

Interdisciplinary Seminar on Biomedical Images 891.01 Interdisciplinary Seminar on Biomedical Images GRAD 1-2 Graduate seminar for Graduate Interdisciplinary Specialization in Comprehensive Engineering and Science of Medical Images.

Au, Wi, Sp Qtrs. 1 cl. Prereq: Grad standing. Cross-listed in Biomedical Engineering, Biomedical Informatics, Computer Science and Engineering, Electrical and Computer Engineering, Integrated Biomedical Science, Pathology, Radiology, Statistics, and Vision Science. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

Biostatistics

Introduction to Biostatistics

318H Introduction to Biostatistics UGRD 5

Descriptive statistics, probability, models for population distributions, estimation, hypotheses testing, correlation, regression, categorical data analysis; emphasizes analysis of biomedical data using statistical software.

* Su Qtr. 3 1.5-hr cl. Prereq: Math 153 or 162 or 162H, or permission of instructor. Not open to students with credit for MolGen 650, or Stat 145 or 245. For honors students majoring in biological/medical sciences.

Applied Survival Analysis

605 Applied Survival Analysis GRAD 4

Techniques for analyzing censored data including: life table and product limit estimator, k-sample tests, and proportional hazards regression.

* Au Qtr. 2 2-hr cl. Prereq: Stat 521 and 645, or permission of instructor. Not open to students with credit for PubHlth 605. Cross-listed in Public Health: Biostatistics.

Design and Analysis of Clinical Trials

615 Design and Analysis of Clinical Trials GRAD 3

Design, monitoring, and analysis of clinical trials; includes protocol development, randomization schemes, sample size methods, and ethical issues.

Wi Qtr. 3 cl. Prereq: Stat 526 and 529, or equivs.

Biostatistical Collaborative Research

709 Biostatistical Collaborative Research GRAD 2-3

Basic biomedical research methodologies; team with biomedical PhD students to design experiments and plan analysis; writing statistical sections of biomedical research grants and reports.

Wi Qtr. Prereq: Grad standing and permission of instructor; sufficient coursework in statistics or biostatistics to serve as a biostatistical consultant. Not open to students with credit for IBGP 705.

Survival Analysis I

805 Survival Analysis I GRAD 3

Counting process approach to life history data: Nelson-Aalen estimators; product limit estimators; k-sample estimators.

* Wi Qtr. Prereq: Stat 722 or permission of instructor.

Survival Analysis II

806 Survival Analysis II GRAD 3

Parametric models, semiparametric proportional hazards regression, additive hazards regression, multivariate survival models.

* Sp Qtr. 3 cl. Prereq: 805.

Analysis of Discrete Data

865 Analysis of Discrete Data GRAD 3

Theory of techniques for the analysis of discrete data including: two-way and multidimensional tables; logistic regression; loglinear models; chi-squared tests, numerical methods.

* Au Qtr. 3 cl. Prereq: Stat 622, 742, or permission of instructor.

Advanced Topics in Biostatistics

882 Advanced Topics in Biostatistics GRAD 3

Selected topics in biostatistics.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

Research in Biostatistics

999 Research in Biostatistics GRAD 1-18

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

Bulgarian

Elementary Bulgarian I

101.01 Elementary Bulgarian I UGRD 5

Development of oral and written language skills.

* Au Qtr. Not open 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. GEC for lang course. FL Admin Cond courses.

Elementary Bulgarian II: Individualized Track

101.51 Elementary Bulgarian I: Individualized Track UGRD 1-5

Development of oral and written language skills.

* Not open 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. GEC for lang course. FL Admin Cond courses. Repeatable to a maximum of 5 cr hrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 102.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement.

Elementary Bulgarian II

102.01 Elementary Bulgarian II UGRD 5

Development of oral and written language skills.

* Wi Qtr. Prereq: 101 or 101.01 or 5 cr hrs of 101.51. GEC for lang course. FL Admin Cond courses.

Elementary Bulgarian II: Individualized Track

102.51 Elementary Bulgarian II: Individualized Track UGRD 1-5

Development of oral and written language skills.

* Wi Qtr. Prereq: 101 or 101.01 or 5 cr hrs of 101.51. GEC for lang course. FL Admin Cond courses. Repeatable to a maximum of 5 cr hrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 103.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 101.51 and 102.51 concurrently with permission of instructor.
103.51 Intermediate Bulgarian: Individualized Track UGRD 1-5
Intermediate Bulgarian.
* Prereq: B- or above in 102.01 or 5 cr hrs of 102.51 or permission of instructor. GEC for lang course. Repeatable to a maximum of 5 cr hrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 102.51 and 103.51 concurrently with permission of instructor.

104.51 Intermediate Bulgarian II: Individualized Track UGRD 1-5
Continuation of 103. development of the four skills.
* Prereq: 5 cr hrs of 103.51 or permission of instructor. GEC for lang course. Repeatable to a maximum of 5 cr hrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 103.51 and 104.51 concurrently with permission of instructor.

111 Intensive Intermediate Bulgarian UGRD 10
Readings, oral and written practice, grammar review.
* Sp Qtr. Prereq: 102 or equiv. Equiv to the 3rd and 4th courses of the foreign language sequence. GEC for lang course.

### Business Admin

100 College of Business Survey UGRD 1
Academic requirements and resources; University policies college procedures and resources; student rights and responsibilities; academic areas of specialization; careers in accounting and business administration. 100H (honors) may be available.
Au Qtr: 2 d. Prereq: 1st qtr freshman standing in direct enrollment program in BUS. Not open to students with credit for UVCSurv 100.

100H College of Business Survey UGRD 1
Academic requirements and resources; University policies college procedures and resources; student rights and responsibilities; academic areas of specialization; careers in accounting and business administration.
Au Qtr: 2 d. Prereq: Honors program or permission of department or instructor; 1st qtr freshman standing in direct enrollment program in BUS. Not open to students with credit for UVCSurv 100.

201 Business Career Planning UGRD 2
Exploration of business careers through self-assessment, informational interviews, and employer presentations; information on co-ops/internships and job search strategies. 2-1 hr cr. Prereq: Soph standing and enrollment in the College of Business, others by permission of instructor.

489 Professional Experience Field Study UGRD 1
For students completing an internship requiring credit; internship is supervised by the employer, three assignments related to the internship are evaluated by the Director, Undergraduate Internship Services.
Su, Au, Wi, Sp Qtrs. Prereq: Admission to College of Business major and permission of the instructor. Repeatable to a maximum of 5 cr hrs. This course is graded S/U.

493 Individual Studies UGRD 1-10
Individual study projects in selected interdisciplinary topics in business administration.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

494 Group Studies UGRD 1-10
Group study projects in selected interdisciplinary topics in business administration.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

498.02 Study Tour: Foreign UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Enrollment in undergraduate BUS program. Repeatable for different titled study tours only.

499.01 Applied Business Skills and Environment I UGRD 4
Introduction to the environment of business and development of skills preparatory to the multi-disciplinary upper division curriculum in business.
Su, Au, Wi, Sp Qtrs. 1 hrlec, 2-2 hr rec. Prereq: Soph standing in the Business Administration major. This course is a prerequisite for specialization courses in Business.

499.02 Applied Business Skills and Environment II UGRD 2
Experimental skills-building course designed to improve team building skills and communication/presentational skills; business ethics and corporate social responsibility; students will also study sustainability initiatives.
Au, Wi, Sp Qtrs. 1 hrlec, 2-2 hr rec. Prereq: Soph standing in the Business Administration major. This course is a prerequisite for specialization courses in Business.

499H Applied Business Skills and Environment I UGRD 4
Introduction to the environment of business and development of skills preparatory to the multi-disciplinary upper division curriculum in business.
Su, Au, Wi, Sp Qtrs. 1 hrlec, 2-2 hr rec. Prereq: Honors program or permission of department or instructor; Soph standing in the Business Administration major. This course is a prerequisite for specialization courses in Business.
506.02 Business Industry Cluster Project Experience UGRD 4
Hands-on experience in the execution of industry business practices to fill a need articulated by an operating public or private organization. Prereq: 505.02.
506.03 Business Industry Cluster Project Experience UGRD 4
Hands-on experience in the execution of industry business practices to fill a need articulated by an operating public or private organization. Prereq: 505.03.
506.04 Business Industry Cluster Project Experience UGRD 4
Hands-on experience in the execution of industry business practices to fill a need articulated by an operating public or private organization. Prereq: 505.04.
506.05 Business Industry Cluster Project Experience UGRD 4
Hands-on experience in the execution of industry business practices to fill a need articulated by an operating public or private organization. Prereq: 505.05.
555 Introduction to International Business UGRD 4
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. 555H (honors) may be available. Su, Au, Wi, Sp Qtrs. 2-2 hr cl. Prereq: Econ 201 or 400.
589 Advanced Field Placement UGRD 1
This course is designed to prepare students who will be participating in an international internship through the Fisher College of Business Office of Career Management. Sp Qtr. Prereq: Permission only. Repeatable to a maximum of 5 cr hrs.
657H Establishing Import-Export Firms UGRD 4
Designed to teach students how to get an export business started, how to compete in a global market and how to expand the business globally. 2-2 hr cl. Available to students enrolled in an honors program or by permission of dept or instructor. Prereq: 4th yr standing; must be enrolled in BUS in any of the honors programs. Not open to students with credit for BusMHR 694H.
689 Professional Experience in Business UGRD 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 Professional Experience Program. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of the Director of Professional Experience Program. Repeatable. This course is graded S/U.
693 Individual Studies UGRD 1-6
Individual study projects in selected interdisciplinary topics in business administration. Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.
694.11 Group Studies UGRD 1-6
Group study projects in selected interdisciplinary topics in business administration. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.
694.12 Group Studies UGRD 1-6
Group study projects in selected interdisciplinary topics in business administration. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.
694.13 Group Studies UGRD 1-6
Group study projects in selected interdisciplinary topics in business administration. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.
694.14 Group Studies UGRD 1-6
Group study projects in selected interdisciplinary topics in business administration. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.
694.15 Group Studies UGRD 1-6
Group study projects in selected interdisciplinary topics in business administration. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.
697 Study at a Foreign Institution UGRD 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This course is Progress (P) graded. Students will pay Ohio State tuition and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs. Au Qtr. Prereq: Permission of instructor. Repeatable for different titled study tours only.
698.02 Study Tour: Foreign UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details. Prereq: Permission of instructor. Repeatable for different titled study tours only.
700 Teaching Business Students UGRD 3
Preparation for business instruction at the undergraduate level; focuses on development of college business teachers through practice-centered inquiry. Su Qtr. 1 cl. Prereq: Ph.D. student enrolled in College of Business. Limited to 20 students.
703 Business Policy UGRD 4
Analysis and simulation of major policy decisions in the context of international business; emphasis on consideration of international business. Sp Qtr. 2-2 hr cl. Prereq: Approved application for BSBA in international business, BusAdm 555, BusFin 725, and BusML 757; or written permission of instructor.
750 Resolving Social Conflict GRAD 4
A multidisciplinary examination of social conflict, its dynamics, and its negotiated and consensual resolution; offers a broad-based framework for diagnosing and managing conflict; applied to legal, environmental, organizational, and geopolitical conflict. Au Qtr. 1-4 hr cl. Prereq: Grad standing or permission of instructor. Cross-listed in City and Regional Planning and Natural Resources.
783H Honors Research UGRD 1-5
Special topics research in business administration; research evaluated through papers, thesis, and/or special examinations. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Jr or sr standing in business, 3.400 CPHR, and permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is Progress (P) graded.
793 Individual Studies GRAD 1-6
Individual study projects in selected interdisciplinary topics in business administration. Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.
794.90 Group Studies GRAD 1-6
Group study projects in selected interdisciplinary topics in business administration. Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.
820 Personal Finance UGRD 4
Budgeting, credit, borrowing money, bank relationships, savings, insurance, real estate, stocks and bonds, income taxes, social security, annuities, wills, trusts, estates, and taxes. Su, Wi, Sp Qtrs. 2-2 hr cl. Prereq: 2nd yr standing. Not open to students in the College of Business majoring in either accounting or finance.
857 International Business Policy and Strategy GRAD 4
Comprehensive study of policy and strategy formulation of firms in an international context with simulated cross-cultural negotiations, and the development of an international strategy for a local firm. Sp Qtr. 2-2 hr cl. Prereq: written permission of instructor. Open only to students in the Honors Business Administration cohort program. First class attendance required.
893 Individual Studies GRAD 1-6
Individual study projects in selected interdisciplinary topics in business administration. Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.
894.90 Group Studies GRAD 1-6
Group study projects in selected interdisciplinary topics in business administration. Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.
220 Personal Finance UGRD 4
Budgeting, credit, borrowing money, bank relationships, savings, insurance, real estate, stocks and bonds, income taxes, social security, annuities, wills, trusts, estates, and taxes. Su, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.
493 Individual Studies UGRD 1-10
494 Group Studies UGRD 1-10

Business Admin: Finance
510 Legal Environment of Business UGRD 4
An introduction to American legal institutions and sources of law and an analysis of basic concepts of public and private law related to business decisions. 510H (honors) may be available.
Su, Au, Wi, Sp Qtrs. 2-2 hr cl. Prereq: Jr standing.

522 Investment Management UGRD 4
Wi Qtr. 2-2 hr cl. Prereq: AcctMIS 310 or 212; BusFin 420; Econ 200 and 201; Stat 133 or equiv. Not open to students with credit for BusFin 722 or to students enrolled in the BSBA Program. Credit does not count toward the BSBA Degree.

590 Entrepreneurial Finance UGRD 4
Examines the financial needs of entrepreneurial ventures. Considers financial challenges facing entrepreneurs, framing the issues, evaluating the needs, developing financial strategies and structuring deals.
Sp Qtr. 2-2 hr cl. Prereq: Econ 200, or AEDEcon 200, or equiv; Math 130 or equiv.

620 Business Finance UGRD 4
Introduction to financial management of business firms; financial analysis, planning and control; working capital management; capital investment decisions and required rates of return; capital structure decisions and sources of financing. 620H (honors) may be available.
Su, Au, Wi, Sp Qtrs. 2-2 hr cl. Prereq: Econ 200 and 201, or equiv; and AcctMIS 201 or 212 or equiv. This course is available for EM credit.

640 Insurance and Risk UGRD 4
Principles and practices of insurance and risk management, including personal, business, and social viewpoints in regard to insurance for life, health, property, and liability risks.
Au, Wi, Sp Qtrs. 2-2 hr cl. Prereq: Econ 200 and 201, or equivs.

670 Real Estate and Urban Land Economics UGRD 4
Introduction to urban land economics and real estate markets; topics include land use, property taxation, income taxation, and property rights.
Su, Wi Qtrs. 2-2 hr cl. Prereq: Econ 200 and 201, or equivs.

693 Individual Studies UGRD 1-6
Individual study projects in related areas in finance.
Au, Wi, Sp Qtrs. Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

694.21 Group Studies UGRD 1-6
Group study projects in selected areas in finance.
Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

694.22 Group Studies UGRD 1-6
Group study projects in selected areas in finance.
Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

694.23 Group Studies UGRD 1-6
Group study projects in selected areas in finance.
Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

694.24 Group Studies UGRD 1-6
Group study projects in selected areas in finance.
Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

694.25 Group Studies UGRD 1-6
Group study projects in selected areas in finance.
Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

721 Corporate Finance UGRD 4
Effects of projects and financial policy on stockholder wealth; capital budgeting, project cost of capital, dividend policy, debt policy, leasing policy, and option pricing.
Su, Au, Wi, Sp Qtrs. 2-2 hr cl. Prereq: 620 or equiv and BusMgt 330 and 331 and BusAdm 499; or permission of instructor.

722 Investment Management UGRD 4
Investment objectives; types of investments and their relative merits; security prices and yields; investment programs; and taxes.
Su, Au, Wi, Sp Qtrs. 2-2 hr cl. Prereq: 620 or equiv and BusMgt 330 and 331 and BusAdm 499; or permission of instructor.

723 Special Topics Investment Management UGRD 4
Traditionally focuses on the valuation and use of derivatives. At the discretion of the professor, other special topics might be covered.
Au, Wi, Sp Qtrs. 2-2 hr cl. Prereq: 722 or equiv.

724 Stock Market UGRD 5
Practices, procedures, and evaluations relating to buying and selling securities in the organized security markets.
Su, Au, Wi, Sp Qtrs. 1 3 hr cl. Prereq: 722 and 3.20 CPHR or permission of instructor.

725 International Finance UGRD 4
The international financial environment; management of financial risks inherent with international business; problems of implementing corporate finance principles overseas; financial aspects of parent-subsidiary relationships.
Su, Au, Wi, Sp Qtrs. 2-2 hr cl. Prereq: 620 or equiv and BusAdm 499 and 555 and BusMgt 330 and 331; or permission of instructor.

726 Management of Financial Institutions UGRD 4
Overview of the role of financial institutions; study of asset and liability management in commercial banks and savings institutions; cases and simulation.
Su, Au, Wi, Sp Qtrs. 2-2 hr cl. Prereq: 620 and Econ 520 or equivs, and BusMgt 330 and 331 and BusAdm 499; or permission of instructor.

727 Treasury Management UGRD 4
Coverage of principles of treasury management including working capital, banking systems and services, e-commerce, short-term investing and borrowing, and international cash management.
Wi Qtr. 2-2 hr cl. Prereq: 620 and BusAdm 499.

728 Portfolio Management UGRD 4
Designed for students who are pursuing careers in the investment field and those who want to learn more about investments.
Sp Qtr. 2-2 hr cl. Prereq: 722. Not open to students with credit for 694P (Sp 04) or 694.21 (Sp 05, Sp 06, Sp 07).

729 Risk Management UGRD 4
This course is designed to train students in evaluating and managing risks using an enterprise-wide approach that can be applied to financial and non financial firms.
Au Qtr. 721 and 722.

730 Trading and Markets UGRD 4
For students interested in a career in investment management, securities trading, or the brokerage industry. An excellent course for students targeting a career as a financial advisor.
Sp Qtr. 2-2 hr cl. Prereq: 620 or equiv and BusAdm 499 and BusMgt 330 and 331.

731 Fixed Income Securities UGRD 4
This course explores key issues in fixed-income valuation, portfolio management, and risk management.
Wi Qtr. Prereq: 620.

741 Life and Health Risk Management UGRD 4
Management of risks involving health or death; employee benefit programs for corporations, non-profit organizations, and government institutions; the life and health insurance industry.
Wi Qtr. 2-2 hr cl. Prereq: 640 or equiv, and BusMgt 330 and 331 or equiv and BusAdm 499; or permission of instructor.

749 Property and Liability Risk Management UGRD 4
Management of risks involving property damage or legal liability for businesses, hospitals, and government institutions; identification of resources for managing these risks.
Sp Qtr. 2-2 hr cl. Prereq: 640 and equiv and BusMgt 330 and 331 and BusAdm 499; or permission of instructor.

771 Real Estate Investment Analysis UGRD 4
Feasibility and market analysis with consideration of property and income taxation and urban land developments.
Au, Wi Qtrs. 2-2 hr cl. Prereq: 620 or equiv and BusMgt 330 and 331 or equivs and BusAdm 499; or permission of instructor.

772 Real Estate Finance UGRD 4
Sources and methods of obtaining funds for real estate investment; financial institutions, legal considerations, the construction industry and cycles, and financing policies, practices, and experiences.
Wi, Sp Qtrs. 2-2 hr cl. Prereq: 620 or equiv and BusMgt 330 and 331 or equivs and BusAdm 499; or permission of instructor.

773 Real Estate Valuation UGRD 4
Professional valuation as a guide to business decisions; valuation theory and procedures; factors influencing real estate values, and the selection and analysis of data.
Au Qtr. 2-2 hr cl. Prereq: Econ 200 or equiv or permission of instructor.

774 Income Property Valuation UGRD 4
The value-creating attributes of investment properties; methodologies of income-property valuation and investment analysis.
Sp Qtr. 2-2 hr cl. Prereq: Econ 200 or equiv or permission of instructor.

775 Real Estate Law UGRD 4
Legal aspects of real estate transactions and documents (deeds, mortgages, and leases) and selected elements of the law of real estate brokerage.
Wi Qtr. 2-2 hr cl. Prereq: 510 or equiv or permission of instructor.

776 Real Estate Property Management UGRD 4
Examines Property Management for all types of real estate assets. Topics will include finance, acquisition, construction, budgets, sales and marketing, leasing, negotiation and environmental issues.
Au, Wi Qtrs.

779 History of Financial Thought UGRD 2
Class will consist of a series of lectures by, and interviews with, leading contributors to the development and practice of finance.
Au Qtr. This course is graded S/U.

783H Honors Research UGRD 1-5
Special topics research in finance, business law, insurance and risk, and/or real estate; research evaluated through papers, thesis, and/or special examinations.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Jr or sr standing in business, 3.40 CPHR, and permission of instructor. Repeatable to a maximum of 15 cr hrs.
This course continues the development of the principles of finance begun in MBA 810, and covers the valuation of derivatives, corporate financing decisions, mergers and acquisitions, and an introduction to international finance.

Wi, Sp Qtrs. Prereq: MBA 810.

821 Advanced Corporate Finance

Advanced topics in corporate finance are covered in this course, such as the interaction between financial policy and corporate strategy, the market for corporate control, bankruptcy and restructuring.

Au Qtr. 2 2-hr cl. Prereq: 811.

822 Securities Markets and Investments

Taking the perspective of an investor, topics in this course include the fundamental principles of risk and return, diversification, asset allocation, style-based investing, index investing and the efficiency of markets.

Au, Wi Qtrs. 2 1.5-hr cl. Prereq: MBA 810.

823 Derivatives

Explores the valuation of forwards, options, option-based and option-based financial instruments.

Wt Qtr. 2 2-hr cl. Prereq: 810 and 811. Not required for MAcc students.

824 The Stock Market

Practices, procedures, and evaluations for managing equity portfolios.

Su, Au, Wi, Sp Qprs. Prereq: MBA 810.

825 International Finance

The international financial environment, management of financial risks inherent with international business; problems of implementation of corporate finance principles overseas; financial aspects of parent-subsidiary relationships.

Wi, Sp Qtrs. 2 2-hr cl. Prereq: 810; permission of instructor for PhD students.

826 Financial Institutions

Financial management of commercial banks and savings institutions; review, analysis and evaluation of pertinent literature and research; readings and cases.

Sp Qtr. 2 2-hr cl. Prereq: MBA 810.

827 Treasury and Fixed Income Management

Forecasting cash flows, short term asset and liability management and long term bond management.

Wi Qtr. 2 2-hr cl. Prereq: 811 and 822 and MBA 810.

828 Cases in Corporate Finance

Intensive analysis of case studies to develop the students’ abilities to make financial decisions. Applying and integrating ideas learned in MBA 810/811.

Au, Sp Qtrs. 2 2-hr cl. Prereq: MBA 810 or 811.

829 Risk Management

Designed to train the participants in evaluating and managing risks using an enterprise-wide approach.

Sp Qtr. 2 2-hr cl. Prereq: 811.

830 Trading and Markets

How today’s financial markets work; how governments and exchanges regulate them; and how traders create liquidity, volatility, informative prices, trading profits, and transaction costs.

Sp Qtr. Prereq: 810.

831 Corporate Insurance and Risk Management

Review of insurance contracts, markets and institutions. Emphasis is placed on risk management methods in the context of the insurance industry.

Wi, Sp Qtrs. Prereq: 810.

832 Behavioral Finance

Recent research suggests that psychological biases of investors can cause misvaluation. Review of the causes of market inefficiency, and its practical implications for portfolio management and corporate financial management.

Sp Qtr. Prereq: MBA 810.

833 Current Legal Issues in Business

Focusing on legal issues that impact management decision making, legal resources available to businesses and changing business law current events.

Sp Qtr.

834 Applied Enterprise Risk Management

An examination of the nature and practice of ERM in different organizational settings. The course features a series of presentations by corporate risk management specialists.

Sp Qtr. Prereq: 810.

835 Financial Engineering

Focuses on financial engineering, which is the use of sophisticated mathematical modeling techniques to design, price and hedge securities and portfolios.

Sp Qtr. Prereq: 822 and 823. Counts toward MBA Degree.

844 Entrepreneurial Finance

This course is designed to introduce students to the challenges and pitfalls of financing new enterprises.

Wi Qtr. Prereq: MBA 810.

845 Private Equity

Discusses the private equity market. Focus will be on how funds are organized and raised, and how they manage and exit investments.

Wi Qtr. Prereq: 810.

846 Venture Capital

Designed to challenge MBA students to critically think about raising capital for new innovative firms.

Sp Qtr. Prereq: 810. Only open to MBA students or by permission of instructor.

847 Business Change of Control Transactions

A review of the key business and legal issues associated with mergers and acquisitions, and the working relationships of investment bankers and attorneys for the deal participants.

Au Qtr. 1 4-hr cl for 5 weeks. Open only to MBA students or permission of instructor.

849 Financial Spreadsheet Modeling in Excel

Challenges students to improve their financial modeling skills through the construction of 50+ spreadsheet models.

Wi Qtr. Prereq: Basic Excel; 810 or 811 for MAcc students.

850 KAIST Seminar Series

Seminars are presented weekly to Korean Advanced Institute of Science and Technology (KAIST) students by faculty on current research topics.

1 2-hr cl. Repeatable to a maximum of 4 cr hrs.

860 Financial Management

Introduction to fundamental tools of corporate financial analysis and provide an overview of financial auditing.

Prereq: SMB Finance students or permission of instructor.

862 Data Analysis

Introduction to statistical and econometric analysis with emphasis on applications in finance.

Prereq: SMB-FIN students only or permission of instructor.

863 Valuation Analysis

Introduction to equity and firm valuation analysis with practical applications.

Prereq: SMB-Finance students only or permission of instructor.

865 Team Project

Action-based course providing an opportunity to practice analytical and soft skills through working in a finance project.

Prereq: SMB-FIN students only or permission of instructor.

870 Real Estate Development


Au Qtr. Prereq: MBA 810. Not open to students with credit for 870.01 or 870.02.

871 Real Estate Development

Capstone real estate course taught from a multidisciplinary perspective. Focusing on real estate development through a real world case study.

Wi Qtr. 2 2-hr cl.

872 Real Estate Finance

Examines real estate as investments. Analysis of the mortgage market, mortgage derivatives, and bond portfolio management when mortgage-backed securities and derivatives are used.

Sp Qtr. 2 2-hr cl. Prereq: 810.

879 History of Financial Thought

Class will consist of a series of lectures by, and interviews with, leading contributors to the development and practice of finance.

Au Qtr. Prereq. This course is graded S/U.

880 Research in Finance

Readings-based survey covering topics spanning the material that comprise the 2nd year MBA Finance curriculum. Topics include investment management, corporate finance and derivatives.

Au, Wi, Sp Qtrs. Prereq: permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

893 Individual Studies

Individual study projects in related areas in finance.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

894.40 Group Studies

Group study projects in selected areas in finance.

Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

894.41 Group Studies

Group study projects in selected areas in finance.

Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

320 Theory of Finance

Examination of the modern theory of asset pricing and its theoretical foundations.

Au Qtr. 3 2-hr cl. Prereq: Successful completion of Finance Qualifying Exam or permission of instructor.
60 Business Admin: Finance

921 Specifying and Testing Models of Asset Pricing UGRD 5
Focuses on applied econometric research on asset pricing; emphasis on understanding the flow of research and methods used in financial research.
Wi Qtr. 3-2-hr cl. Prereq: Successful completion of Finance Qualifying Exam or permission of instructor.

922 Advanced Theory of Corporate Finance UGRD 5
Emphasizes developments in corporate financial policies including capital structure, compensation, and dividends; contracting costs and firms’ interaction with capital markets.
Sp Qtr. 2.15-hr cl. Prereq: 920 and 921.

923 Research in Finance UGRD 3
Review and access of the research methodologies of finance, and the development and completion of a research paper.
Su, Wi, Sp Qtrs. Prereq: 920, 921, and 922 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

924 Advanced Topics in Business Finance UGRD 3-5
Presents a selection of recent research topics in finance.
Sp Qtr.

998 Research in Finance: Thesis UGRD 1-18
Research for thesis purposes only.
Su, Au, Wi, Sp Qtr. This course is graded S/U.

999 Research in Finance: Dissertation UGRD 1-18
Research for dissertation purposes only.
Su, Au, Wi, Sp Qtr. Repeatable. This course is graded S/U.

Business Admin: Management & Human Rsrscs

290 Entrepreneurship UGRD 5
Assesses economical, sociological, and psychological foundations of entrepreneurship and its impact on society. Examines perspectives, characteristics of entrepreneurs, and role of personal creativity in entrepreneurship.
Au, Wi Qtrs. 2.25-hr cl. GEC soc sci human, natural, and economic resources course.

390 Personal Creativity and Innovation UGRD 4
Explores how people, places and practices foster personal creativity. Develops the student's ability to think more creatively, for a life and career of innovation.
Au, Su Qtrs. 2.2-hr cl.

400 Foundations of Management and Human Resources UGRD 4
Survey of topics in management and human resources for non-business students. The material includes a discussion of organizational behavior, human resource management and labor markets.
Au, Wi, Sp Qtrs. 2.2-hr cl. Prereq: Math 130 or equiv, CSE 100, and Econ 200 or equivs. Not open to students with credit for 500, 500X or 701; or to students enrolled in the College of Business. Credit does not count toward the BBSA degree.

490.01 New Venture Creation UGRD 4
Examines the creation of businesses in the face of uncertainty. Analyzes market opportunities, entrepreneurial strategies, innovative business concepts, business plans and financing new ventures.
Au, Wi, Sp Qtrs. 2.2-hr cl. Prereq: 290.

490.02 Creating the Social Venture UGRD 4
Explore opportunities and challenges in landscape of social entrepreneurship, a new business field in which business and nonprofit leaders design, grow, and lead mission-driven enterprises.
Prereq: 290.

491 The Accelerator: Planning the Entrepreneurial Venture UGRD 4
Students experience all aspects of creating and planning a new venture: determining their personal vision, market analysis to testing financial feasibility of their creative ideas.

493 Individual Studies UGRD 1-10
Individual study projects in selected areas in management and human resources.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 20 or hrs. This course is graded S/U.

494 Group Studies UGRD 1-10
Group study projects in selected areas in management and human resources.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 20 or hrs.

542 Dean's Leadership Academy UGRD 4
Course will examine what we know about effective leadership and team practices, hear from guest speakers and allow students to assess their own leadership effectiveness.

566 Diversity in the Workplace UGRD 4
An examination of the historical and social theories of difference (gender, race, class, sexual orientation) in order to understand diversity in the workplace and possible organizational responses.
* Prereq: 400, or 660 or 701 or equiv; jr standing or second writing course.

590 Leading High Performance Ventures UGRD 4
Explores key managerial practices for leading successful growing businesses. Examines issues in human resources management, business law, financial management, competitive strategy and organizational design.
Wi Qtr. 2.2-hr cl. Prereq: Econ 200 or AD/Econ 200 or equiv.

598 Exploring Culture in International Environments UGRD 1-2
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: Enrolled as Fisher International Student Exchange student. Repeatable to a maximum of 2 or hrs. This course is Progress (P) graded.

651 Human Resource Management in a Market Economy UGRD 4
Application of economic theory to organizations and labor markets; emphasis on the role of labor market analysis in human resource decision-making.
Au, Sp Qtrs. 2.2-hr cl. Prereq: Econ 200 and 201 or permission of instructor.

652 Employee Benefits UGRD 4
Analyzes private and public benefits offered to employees including healthcare, pensions, leave, unemployment insurance and Workers Compensation; examines alternatives for administering employer benefit plans.
Prereq: 400 or 201; or permission of instructor.

653 Human Resource Practices and the Law UGRD 4
Review of federal laws and administrative bodies regulating employee management in the workplace; emphasis on gaining practical skills for managing human resource issues legally.
Wi Qtr. 2.2-hr cl. Prereq: 400 or 701; or permission of instructor.

660 Managing Human Resources UGRD 4
Overview of human resource skills for non-HR managers; emphasis on practices and techniques for hiring, developing, compensating, and appraising employees.
Au, Su Qtrs. 2.2-hr cl. Prereq: Econ 200 or equiv.

691 Value Creation in the Social Enterprise UGRD 4
Theory of social enterprise; development of business plan for a non-profit organization; function as a member of team charged with finding best solution organizational issues.

691 Value Creation in the Social Enterprise UGRD 4
Theory of social enterprise; development of business plan for a non-profit organization; function as a member of team charged with finding best solution organizational issues.

693 Individual Studies UGRD 1-6
Individual study projects in related areas in management and human resources.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 or hrs. This course is graded S/U.

694.51 Group Studies UGRD 1-6
Group study projects in related areas in management and human resources.
Prereq: Permission of instructor. Repeatable to a maximum of 10 or hrs.

694.52 Group Studies UGRD 1-6
Group study projects in related areas in management and human resources.
Prereq: Permission of instructor. Repeatable to a maximum of 10 or hrs.

694.53 Group Studies UGRD 1-6
Group study projects in related areas in management and human resources.
Prereq: Permission of instructor. Repeatable to a maximum of 10 or hrs.

694.54 Group Studies UGRD 1-6
Group study projects in related areas in management and human resources.
Prereq: Permission of instructor. Repeatable to a maximum of 10 or hrs.

694.55 Group Studies UGRD 1-6
Group study projects in related areas in management and human resources.
Prereq: Permission of instructor. Repeatable to a maximum of 10 or hrs.

701 Managing Individuals in Organizations: Organizational Behavior and Human Resources UGRD 5
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. 701H (honors) may be available.
Au, Wi, Sp Qtrs. 2.2-hr cl. Prereq: Jr standing. Not open to students with credit for 400.

703 Human Resource Training and Development UGRD 4
Introduction to concepts and organization practices associated with designing, implementing, and evaluating different types of employee training and development programs.
Au, Sp Qtrs. 2.2-hr cl. Prereq: 701H, BusMgt 330, and BusAdm 499; or permission of instructor.

704 Concepts and Competencies for Managing People UGRD 4
Application of concepts for managing oneself and others in real work situations; includes application of behavioral skills such as delegation, persuasion and performance feedback.
Wi, Sp Qtrs. 2.2-hr cl. Prereq: 400 or 701 and BA 499; or permission of instructor.

756 Staffing Organizations UGRD 4
Introduction to the scientific, legal, and administrative issues associated with the recruitment, hiring, and placement of individuals by organizations.
Sp Qtr. 2.2-hr cl. Prereq: 653, 701, BusMgt 330, and BusAdm 499; or permission of instructor.
761 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. 
Au Qtr. 2 2-hr cl. Prereq: Jr standing.

762 Compensation 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. 
Wi Qtr. 2-hr cl. Prereq: 701, BusMgt 330, and BusAdm 499; or permission of instructor.

763 Employment Relationships around the World 
Overview and comparison of employment practices and labor-management relations in other industrialized countries including Europe, East Asia, Central and South America, and Canada. 
Au, Wi Qtrs. 2-hr cl. Prereq: Jr standing, BusMgt 330, and BusAdm 499; or permission of instructor.

764 Negotiation and Conflict Management 
Introduction to the psychology of bargaining and negotiation, the dynamics of interpersonal and intergroup conflict and its resolution; emphasis on analyzing bargaining and conflict relationships. 
2 2-hr cl. Prereq: 400 or 701; or permission of instructor.

765 International Human Resource Management 
Examination of the human resource challenges that emerge in multi-national organizations; emphasis on issues to be considered when preparing oneself and others for international assignments. 
Sp Qtr. 2-hr cl. Prereq: 701, BusMgt 330, and BusAdm 499; or permission of instructor.

769 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 and with organizational objectives. 
Au Qtr. 2-hr cl. Prereq: 701 or 400; or permission of instructor.

783H Honors Research 
Special topics research in management and human resources; research evaluated through papers, thesis, and/or special examinations. 
Au, Wi, Sp Qtrs. Arr. Prereq: Jr or Sr standing in business, 3.40 GPR, and permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is Progress ('P') graded.

801 Self-Management, Professional Development and Career Success 
Uses behavior modeling techniques to teach students a variety of interpersonal skills needed by generalist managers. 
1.5-hr cl.

802 Managerial Negotiations 
Exploration of the major concepts and theories of the psychology of bargaining and negotiation, and the dynamics of interpersonal and intergroup conflicts and their resolution. 
Au, Wi, Sp Qtrs. Prereq: Enrollment in MBA, MLHR, MACC, Accounting Program, MBLE.

803 Organization Theory and Design 
An examination of the theories and practices involved in the design of formal organizations. 
2 1.5-hr cl. Not open to students in structured MBA.

804 Producing Change in Organizations 
Study of requirements to produce and manage change in organizations. 
Sp Qtr. 1-4 hr cl.

805 Career Development 
Study of career development within organizations and organizational perspectives. 
2 2-hr cl. Prereq: 830 or 860 or MBA 620 or permission of instructor.

806 Management and Individual Behavior 
A focus on the manager's role in dealing with individuals and work teams. Other topics include: work design, communications, leadership and motivation. 
Wi Qtr. 1-4 hr cl. Prereq: Grad standing. Not open to MBA and PT MBA.

807 Organization Development and Change for Human Resources 
A practical and pragmatic investigation into the conduct of change in organizations in order to improve organization performance. 
Wi Qtr. 1-4 hr cl. Prereq: Grad standing.

808 Mergers, Acquisitions and Corporate Development 
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. 
Wi, Sp Qtr. Prereq: Graduate standing.

809 Leading and Managing Change in Organizations 
The course focuses on the issues and challenges of successfully leading and managing organizational change. Although this course focuses on both the design and implementation of change, the emphasis is primarily on successful implementation. 
Au Qtr. 2-2 hr cl. Prereq: MBA 860 or permission of instructor.

811 Human Resource Management Research 
Examination of the concepts, methods, and tools needed to conduct and evaluate research for effective Human Resources Management decision making. 
Wi Qtr. 1-4 hr cl. Prereq: Grad standing.

815 Enhancing Written Communication 
Familiarizes students with the tools and techniques of enhancing and improving written skills in business settings; written projects cover leadership and management roles in business. 
Wi Qtr. 1-2 hr cl. Open only to MBA students or permission of instructor.

816 MLHR Summer Field Experience 
An advanced internship for MLHR students only in conjunction with Global Innovation and Entrepreneurial Leadership Program. Prereq: Permission of MLHR Director.

822 Advanced Managerial Negotiation 
The purpose of this course is to extend and enhance knowledge about, and skills in negotiation processes in a managerial context. 
Sp Qtr. 1-4 hr cl. Prereq: 802. Open only to MBA students or permission of instructor.

824 Building Professional Services 
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. 
Au Qtr. 1-4 hr cl. Prereq: Graduate student.

825 Entrepreneurship and Business Plan Development 
Provides student experiences in entrepreneurship and entrepreneurial concepts and provides the opportunity to develop entrepreneurial skills. 
Sp Qtr. 2-2 hr cl. Open only to MBA students or permission of instructor.

826 International Business Simulation 
Utilizes the Super Tycoon Simulation to teach concepts of International Business. 
Wi Qtr. 2-hr cl. Prereq: Completion of MBA core courses.

827 The Globalization of Smaller Firms 
An interdisciplinary course with international business as the core, the class will be grounded in theory with an in depth investigation of a case study. 
Wi, Sp Qtrs. 2-2 hr cl. Only open to MBA students or permission of instructor.

828 Developing High Performance Teams 
High performance organization leaders who adapt, work with others, understand/influence team behavior, align teams, understand organizational change, develop/achieve a vision, interpersonal behavior, influence strategies. 
Wi, Sp Qtrs.

829 Insights into Executive Leadership 
Provides participating students with a better understanding of the realities of leadership in corporate environments. 
Wi, Sp Qtrs. 2-2 hr cl. Open only to MBA students or permission of instructor. Repeatable to a maximum of 2 cr hrs. This course is Progress ('P') graded. This course is graded S/U.

830 International Negotiations and Deal Making 
How to effectively negotiate and make deals in cross-cultural contexts. Issues covered include: culture of negotiators, strategies, government involvement, structure of international business deals, ethics. 
Sp Qtr. Prereq: Major MBA, PT-MBA, MLHR, MACC, or permission of instructor.

831 Creativity: Skills and Practice 
How people, places, practices foster creativity. Readings: academic, spiritual, confessional, self-help literature on creativity, productivity, happiness, experience. Assignments: daily writings and self-assessments of personal creativity. 
Au, Wi Qtrs. 2 hours 1 day/week over 2 quarters. Prereq: MBA or PT-MBA major or permission of instructor. Repeatable to a maximum of 2 cr hrs. This course is Progress ('P') graded. This course is graded S/U.

832 Working Spanish for Business 
Designed for business students who need to learn Spanish for career purposes and want to be able to work comfortably in a Spanish-speaking business environment. 
Wi Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 4 cr hrs. This course is Progress ('P') graded.

833 The Rise of China and Its Global Business Implications 
The course is intended to introduce students to the historical, economic, cultural, social and geopolitical circumstances of China's rise, and its global business repercussions. 
Wi Qtr. Prereq: Grad standing. Repeatable to a maximum of 8 cr hrs.

834 Mastery in Execution 
The ability to successfully execute any project or assignment; attaining mastery in identifying, resolving problems, gaining mastery in causing results in any condition/circumstance. 
Wi Qtr. Prereq: MBA 860. Open only to WPMBA and MLHR student or permission of instructor. Not open to MBA.
835 Enhancing Professional Interchange (EPI) GRAD 4
Enhance current levels of skills in professional business environment presentations. Course covers: feedback, commentary, agreement, disagreement, change and the opportunity for continued communication interchange. Wi Qtr. 1 4-hr cl. Open only to MBA students or permission of instructor.

836 Intopia: Applied Competitive Strategy GRAD 4
Course 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. Wi Qtr. 2 2-hr cl. Open only to MBA students or permission of instructor.

838 Advanced Competitive Analysis GRAD 4
Advanced Competitive Analysis provides tools to identify, parse, and analyze the economic and market data necessary to complete a comprehensive strategic analysis of business competition. Au Qtr. 2 2-hr cl. Open only to MBA students or permission of instructor.

839 Advanced Strategic Analysis GRAD 4
A study of corporate strategies, actions firms take to gain competitive advantages; strategies studied will include vertical integration, strategic alliances, corporate diversification, and mergers/acquisitions. Wi Qtr. 2 2-hr cl. Open only to MBA students or permission of instructor.

840 Leadership Values and Decision Making GRAD 4
Course explores the importance of character, values and integrity to personal and organizational leadership. Cases, lectures, readings and speakers are covered. Wi Qtr. 2 2-hr cl. Prereq: Grad standing.

841 Business and the Environment: Strategies for Sustainability GRAD 4
Integrating the environment into business processes to improve company competitive advantage. Environmental sustainability: includes operating principles and establishing the business case for sustainable business practices. Au Qtr. 1 4-hr cl.

842 Advanced Topics in Leadership: Building Your Leadership Legacy GRAD 4
To develop a personal leadership legacy designed to achieve career goals and improve leadership skills. Classroom speakers include executive-level guest speakers. Sp Qtr. Prereq: Grad standing.

843 Organizational Turnarounds GRAD 4
Course will include case studies of organizational turnarounds and expose students to successful business and organizational leaders who have successfully led organizations through crises. Au Qtr. Prereq: Grad standing. Repeatable to a maximum of 8 hrs.

844 Strategic Corporate Restructuring GRAD 4
Course examines antecedents of a corporate restructuring and identifies restructuring strategies that help to realign firm strategies with external opportunities to create value. Sp Qtr. Prereq: Major MBA, PT-MBA, MLHR, or permission of instructor.

845 Advanced Professional Interchange (API) GRAD 4
This course builds on the baseline skills developed in the Enhancing Professional Interchange (EPI) course; presentations are improved and strategies are formed for next steps. Sp Qtr. 1 4-hr cl. Open only to MBA students or permission of instructor.

846 Talent Management GRAD 4
Overview of concepts, practices, issues and learnings related to strategically managing talent to develop organizational capability and meet strategic business goals and objectives. Wi Qtr. 1 4-hr cl. Open only to MBA students or permission of instructor.

847 Advanced Topics in Leadership Effectiveness: Strategy Implementation and Execution GRAD 4
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. Wi Qtr. Open only to MBA students or permission of instructor.

848 Technology Strategy and Innovation Management GRAD 4
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. Wi Qtr. 2 2-hr cl. Open only to MBA students or permission of instructor.

849 Performance Management GRAD 4
Measure & develop performance of individuals & groups & align performance with organization's strategic objectives; methods, theories, research findings, issues regarding employee performance in organizations. Sp Qtr. Prereq: Grad standing.

850 Leadership and Competitive Analysis for Action GRAD 4
Creation and maintenance and long term value for the organization. Sp Qtr. Prereq: Enrollment in EMBA, Distance Learning course (Web taught).

851 Conceptual and Historical Foundations of Labor and Human Resources I GRAD 4
Appraisal of theories, principles, and concepts related to macro labor and human resources. Au Qtr. 1 4-hr cl. Prereq: Grad standing.

852 Conceptual and Historical Foundations of Labor and Human Resources II GRAD 4
Examination of micro labor human resources issues including the role of the HR professional and the structure of the HR department. Wi Qtr. 1 4-hr cl. Prereq: 851 or permission of instructor.

853 Human Resource Information Systems GRAD 4
Examination of the practical and conceptual issues in the development, acquisition, implementation and application of Human Resource Information Systems and other data management techniques. Sp Qtr. 1 4-hr cl. Prereq: BusMgt 801.01 or equiv, or permission of instructor.

854 Seminar in Human Resource Policy GRAD 4
The employment relationship from an economic perspective; economic analysis applied to important managerial decisions involving the coordination and motivation of organizational members. Sp Qtr. 1 4-hr cl. Prereq: Grad standing. Not open to MBA or PT-MBA majors.

855 Employee Training and Development GRAD 4
Study of training processes including strategic training, needs assessment, transfer of training, learning, training methods, evaluation and employee development; based on theory, research and best practices. Sp Qtr. 1 4-hr cl. Prereq: Grad standing. Not open to students with credit for 703.

856 Staffing the Organization GRAD 4
Examination of the scientific, legal, and administrative issues associated with the recruitment, selection, employment and retention of individuals by organizations. Au Qtr. 1 4-hr cl. Prereq: Grad standing. Not open to students with credit for 756.

858 International Human Resources GRAD 4
Survey of human resource management practices of selected countries. Economics, politics and culture examined to understand the peculiarities of human resource management in each situation. Sp Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor.

859 Business Ethics GRAD 4
Overview of moral issues in business. Focuses on unethical theories and traditions bearing on these activities. Au Qtr. 1 3-hr cl. Prereq: Grad standing.

860 Management of Human Resources GRAD 4
Analysis of human resources practice and policies, value configurations, leadership, job design, motivation, and reward systems as these relate to individual performance and organizational effectiveness. Wi Qtr. 2 1.25-hr cl. Not open to students with credit for 660 or 660H.

861 Human Resources Negotiations GRAD 4
Examination of major concepts and theories of bargaining and negotiations as they relate to labor and human resources. Au Qtr. 1 4-hr cl. Prereq: Grad standing.

862 Seminar in Human Resource Management GRAD 4
Special topics in selecting, developing, retaining, motivating, utilizing, and allocating human resources within complex organizations. Au Qtr. 1 4-hr cl. Prereq: Grad standing.

863 Business Practices and the Human Resource Manager GRAD 4
Introduction to business practices for the human resource practitioner. Au Qtr. 1 4-hr cl. Prereq: Grad standing.

864 Labor Dispute Settlement GRAD 4
Analysis of the functional role of labor conflict in the industrial relations system; evaluation of institutions for dispute resolution in the public and private sectors. 1 2-hr cl. Prereq: 761 or 861.

865 Compensation Theory and Practice GRAD 4
Introduction to pay systems; including job evaluation, pay surveys, performance appraisals, and benefits. Sp Qtr. 1 4-hr cl. Prereq: Grad standing. Not open to students with credit for 762.

866 Statistical Analysis for Labor and Human Resources Management II GRAD 4
Second quarter of a sequence preparing students to analyze and use Human Resource data in decision-making, focusing on hierarchical regression, moderated regression, ANOVA with multiple independent variables, non-parametric analysis. Wi Qtr. 1 4-hr cl. Prereq: BusMgt 801.01 or equiv or permission of instructor.

867 Contemporary Employment Practices and the Law GRAD 4
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 programs are discussed. Wi Qtr. 2 2-hr cl. Prereq: 612 or permission of instructor. Not open to students with credit for BusFin 866. Cross-listed in Business Administration: Finance.

868 Strategic Management of Human Assets GRAD 4
Acquaint students with theory and research regarding teamwork and leadership, and apply concepts to enhance understanding/build skills in team leadership, membership, change and followship. Au Qtr. 2 2-hr cl. Prereq: Grad standing.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>894.70</td>
<td>Group Studies</td>
<td>1-6</td>
<td>Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.</td>
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<tr>
<td>894.71</td>
<td>Group Studies</td>
<td>1-6</td>
<td>Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.</td>
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<td>894.72</td>
<td>Group Studies</td>
<td>1-6</td>
<td>Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.</td>
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<td>894.73</td>
<td>Group Studies</td>
<td>1-6</td>
<td>Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.</td>
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<td>894.74</td>
<td>Group Studies</td>
<td>1-6</td>
<td>Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.</td>
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<td>894.75</td>
<td>Group Studies</td>
<td>1-6</td>
<td>Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.</td>
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<td>894.76</td>
<td>Group Studies</td>
<td>1-6</td>
<td>Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.</td>
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<tr>
<td>894.77</td>
<td>Group Studies</td>
<td>1-6</td>
<td>Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.</td>
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<tr>
<td>894.78</td>
<td>Group Studies</td>
<td>1-6</td>
<td>Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.</td>
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<tr>
<td>894.79</td>
<td>Group Studies</td>
<td>1-6</td>
<td>Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.</td>
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<td>894.80</td>
<td>Group Studies</td>
<td>1-6</td>
<td>Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.</td>
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<td>894.81</td>
<td>Group Studies</td>
<td>1-6</td>
<td>Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.</td>
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<td>894.82</td>
<td>Group Studies</td>
<td>1-6</td>
<td>Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.</td>
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<tr>
<td>894.83</td>
<td>Group Studies</td>
<td>1-6</td>
<td>Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.</td>
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<tr>
<td>894.84</td>
<td>Group Studies</td>
<td>1-6</td>
<td>Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.</td>
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<tr>
<td>895.01</td>
<td>Seminar in Entrepreneurship-BA</td>
<td>4</td>
<td>Lecture, discussion, and case analysis on managing growth in the new or emerging firm.</td>
</tr>
<tr>
<td>895.02</td>
<td>Seminar in Entrepreneurship-NB</td>
<td>4</td>
<td>Lecture, discussion, and case analysis on managing growth in the new or emerging firm.</td>
</tr>
<tr>
<td>911</td>
<td>Introduction to Behavioral Research Methods in Business</td>
<td>5</td>
<td>Introduction to research design and methodology as it relates to the study of business and organizational phenomena.</td>
</tr>
<tr>
<td>912.01</td>
<td>Advanced Micro-Behavioral Research Methods</td>
<td>5</td>
<td>Seminar in advanced evaluation of research design, methods, and analysis relevant to micro-behavioral organizational theory.</td>
</tr>
<tr>
<td>913.01</td>
<td>Seminar: Foundations of Human Resources/Organizational Behavior</td>
<td>5</td>
<td>Discussions of theory and research that serve as a foundation for the fields of human resources and organizational behavior.</td>
</tr>
<tr>
<td>913.02</td>
<td>Seminar: Topics in Human Resources</td>
<td>5</td>
<td>Discussions of theory and research on human resource management.</td>
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<tr>
<td>913.03</td>
<td>Seminar: Topics in Organizational Behavior</td>
<td>5</td>
<td>Discussions of theory and research on organizational behavior.</td>
</tr>
<tr>
<td>914.01</td>
<td>Advanced Seminar: Advanced Topics in Human Resources</td>
<td>5</td>
<td>Advanced discussions of theory and research on organizational behavior.</td>
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<tr>
<td>914.02</td>
<td>Advanced Seminar: Advanced Topics in Organizational Behavior</td>
<td>5</td>
<td>Advanced discussions of theory and research on organizational behavior.</td>
</tr>
<tr>
<td>915</td>
<td>Advanced Organizational Theory</td>
<td>5</td>
<td>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.</td>
</tr>
<tr>
<td>920.01</td>
<td>Management Seminars: Strategic Management</td>
<td>5</td>
<td>An examination of the concepts, models, theories, and research underlying contemporary thinking on strategic management.</td>
</tr>
</tbody>
</table>
64 Business Admin: Management & Human Rsrs

920.02 Management Seminars: Strategic Management Problems
An examination of current theoretical developments and research in the business policy and strategic management field.
* 1 2-hr cr. Prereq: Permission of instructor. Offered Even years.

925.01 International Management Seminars: Seminar in International Business
A critical study of current theories and research methodologies and findings in the field in international business.
* 1 3-hr cl. Prereq: Permission of instructor.

925.02 International Management Seminars: Selected Issues in International Business
Current and key issues in international management analyzed from an interdisciplinary perspective.
1 3-hr cl. Prereq: Permission of instructor.

950.01 Advanced Experience in Labor and Human Resources: Internship
Supervised practical experience relating to labor and human resources.
Prereq: 12 cr hrs in BusMHR.

950.02 International Management Seminars: Tutorial
Preparation of investigative paper relating course work to specific problem in labor and human resource management.
Prereq: 12 cr hrs in BusMHR.

998 Research in Labor and Human Resources: Thesis
Research for thesis purposes only.
Su, Au, Wi, Sp Qtrs. Prereq: 12 cr hrs in BusMHR at 800 level or above. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

999 Research in Labor and Human Resources: Dissertation
Research for dissertation purposes only.
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

Business Admin: Management Sciences

330 Decision Sciences: Statistical Techniques
Examination of the use of statistical techniques in managerial decision-making processes; confidence intervals, hypothesis testing, simple and multiple regression, quality control.
Su, Au, Wi, Sp Qtrs. 2-2 hr cl. Prereq: CSE 200 and Stat 133 or equiv.

331 Decision Sciences: Operations Research, Modeling and Applications
Examination of the use of operations research models in managerial decision making processes; linear programming, decision analysis and simulation applications. Emphasis on formulation and interpretation of models; supported by spreadsheet based software.
Su, Au, Wi, Sp Qtrs. 2-2 hr cl. Prereq: CSE 200 and Stat 133 or equiv.

430 Foundations of Operations Management
A survey of operations management for non-business students including discussion of operations management issues in both manufacturing and service organizations including management and purchasing.
Au, Wi, Sp Qtrs. 2-2 hr cl. Prereq: Math 130, CSE 100, and Econ 200 or equivs. Not open to students with credit for BusMgt 630; or for students enrolled in the College of Business. Credit does not count toward the BSBA degree.

493 Individual Studies
Individual study projects in selected areas in management sciences.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

494 Group Studies
Group study projects in selected areas in management sciences.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

630 Introduction to Operations Management: Improving Competitiveness in Organizations
Key operating issues in service and manufacturing organizations that have strategic and tactical implications. Students participate in discussions relating current business events to operations management and case analysis.
Su, Au, Wi, Sp Qtrs. 2-2 hr cl. Prereq: Jr standing and Stat 133 or equiv.

693 Individual Studies
Individual study projects in selected areas in management sciences.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

694.31 Group Studies
Group study projects in selected areas in management sciences.
Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

694.32 Group Studies
Group study projects in selected areas in management sciences.
Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

694.33 Group Studies
Group study projects in selected areas in management sciences.
Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

694.34 Group Studies
Group study projects in selected areas in management sciences.
Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

694.35 Group Studies
Group study projects in selected areas in management sciences.
Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

710 Six Sigma Principles
Technical and managerial body of knowledge for Six Sigma.
Prereq: 330, 630.

711 Six Sigma Projects
Course allows teams of students to apply Six Sigma principles and concepts.
Prereq: 710.

731 Quality Management
Examines quality management topics such as statistical process control, process design, capability analysis, house of quality, performance measurement, Baldrige Quality Award, cost of quality, etc.
Su, Wi Qtrs. 2-2 hr cl. Prereq: 330, 331, 630 and BusAdm 499; or permission of instructor.

732 Operations Planning and Control
An analysis of the planning and control of materials as they flow within an organization; topics include production planning, material requirements planning (MRP), capacity management, master production scheduling, and just-in-time techniques.
Au, Wi, Sp Qtrs. 2-2 hr cl. Prereq: 330, 331, 630 and BusAdm 499, or permission of instructor.

733 Information Systems in Operation Management
A study of the impact that information systems have on strategic and tactical decisions of operations managers; emphasis on applying decision support systems to problems faced by these managers.
Su Qtr. 2-2 hr cl. Prereq: 630 and a course in computer programming and BusAdm 499, or permission of instructor.

734 Purchasing and Supply Chain Management
Explores the industrial-institutional purchasing cycle for operating supplies, raw materials components and capital equipment within the context of the materials management organization concept.
Au Qtr. 2-2 hr cl. Prereq: 630 and BusMIL 650 and BusAdm 499.

736 Purchasing Strategy
Focus on the importance of developing an integrated purchasing management strategy which is consistent and congruent with the business firm's strategy. Purchasing is viewed as a competitive tool.
Wi Qtr. 2-2 hr cl. Prereq: 330, 331, 630 and BusAdm 499.

737 International Operations Management
This course focuses on managing manufacturing and service operations across national boundaries to provide an organization with a competitive advantage.
Sp Qtr. 2-2 hr cl. Prereq: 630 and BusAdm 499 or permission of instructor.

739 Managing Process Improvement
Examines process reengineering and quality management for manufacturing and service organizations. Topics covered include process flow and waiting line analysis, quality by design, service/quality guarantees, team problem solving tools, Malcolm Baldrige National Quality Award criteria and statistical process control.
Wi, Sp Qtrs. 2-2 hr cl. Prereq: 330, 331, 630 and BusAdm 499, or permission of instructor.

783H Honors Research
Special topics research in management sciences; research evaluated through papers, thesis, and/or special examinations.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Jr or Sr standing in Business, 3.40 GPA, and permission of instructor. Repeatable to a maximum of 15 cr hrs.

801 Business Data Modeling I
Introduction to quantitative management techniques for first year Masters in Labor and Human Resource candidates.
^ Au Qtr. 1-4 hr cl. Prereq: Stat 133 or equiv or permission of instructor. Prereq: Grad standing in MLHR or permission of instructor.

810 Six Sigma Principles
Technical and managerial body of knowledge for Six Sigma management.
Au Qtr. Prereq: MBA 650 and 870.

811 Six Sigma Projects
Course allows teams of students to apply Six Sigma Principles and Concepts.
Au Qtr. Prereq or concur: 810. Repeatable to a maximum of 6 cr hrs. This course is Progress (P) graded.

841 The Business of Health Care
Focuses on the evolving and competitive issues facing the health care industry today.
Sp Qtr. Prereq: Permission of instructor. Enrolled in MBA Program.
820 Project Management  GRAD  4
Examines the management of complex projects and the tools that are available to assist managers with such projects.
Au Qtr: 1-4 hr cl. Prereq: Students who enjoy applying a spreadsheet based on modeling approaches to business decisions.

830 Service/Quality Management  GRAD  4
Study of the strategic and tactical issues concerning services in both service and manufacturing industries. Topics include service process re-engineering, performance measurement, service/quality, standards, and employee empowerment.
Sp Qtr: 2-2 hr cl. Prereq: MBA 850 or permission of instructor.

832 Matching Supply with Demand  GRAD  4
Examination of major issues in planning and scheduling in an information systems context; production database, requirements planning, and scheduling processing.
Au Qtr: 2-2 hr cl. Prereq: MBA, MAcc, MBLE or MHLR Program.

834 Strategic Design of Operations/Logistics Systems  GRAD  4
Managing systems of people and technology to create capabilities in operations. Emphasis is on new approaches to managing operations and logistics that promise strategic advantage.
Sp Qtr: 2-2 hr cl. Prereq: MBA 850 or MBLE.

835 Operations Planning and Control for Supply Chain Management  GRAD  4
This course addresses techniques of managing the flow of materials in a manufacturing facility. We focus on the manufacturing process within the production facility.
Au Qtr: 2-1.5-hr cl. Prereq: MBA 850 or 861, and 871; or enrollment in MBLE; or permission of instructor.

836 Customer Driven Manufacturing in the Market  GRAD  4
Development of effective linkages between the marketing and manufacturing functions in strategic planning for a business; application to case studies involving U.S. and overseas firms.
Au Qtr: 2-2-hr cl. Lecture, case discussion, projects. Prereq: 2nd yr standing in MBA or permission of instructor.

837 Global Sourcing  GRAD  4
This course first investigates the “make-buy” decision. Then it studies the management of products and/or services “bought” with an international focus.
Wi Qtr. Prereq: MBA 850.

840.01 Lean Enterprise Leadership  GRAD  4
An attractive, high visibility course that provides students with academic context and practical skills on lean manufacturing and supply chain practices.
Wi Qtr: 1-4 hr cl. Prereq: Enrollment in the MBA, MAle, or MAha programs; or permission of instructor.

840.02 Lean Enterprise Leadership II  GRAD  2
An attractive, high visibility course that provides students with academic context and practical skills on lean manufacturing and supply chain practices.
Sp Qtr. Prereq: Enrollment in the MBOE program.

841 Lean Enterprise Leadership III  GRAD  2
Capstone Project is a supervised practical project executed by the student with help of a team in the student's workplace. Rigorous quarterly reporting updates required.
Su Term 1, Su Term 2, Wi, Sp Qtr. Prereq: Repeatable to a maximum of 8 hrs. Course withdrawn Sp 2005 reinstated Wi 2009.

842 Value Stream Management  GRAD  4
The objective of this course is to present students with the state-of-the-art strategic and operational approaches to planning and implementing effective change across an enterprise.
Wi Qtr.

843 Stabilizing Operations  GRAD  4
The objective of this course is to present students with the state-of-the-art tools for stabilizing operations and maintaining stability.
Sp Qtr.

844 Leading Operations  GRAD  4
The Toyota Production System creates a community of scientists. Toyota uses a rigorous problem-solving process to test any proposed changes.
Sp Qtr.

845 Creating and Managing Flow  GRAD  4
This course focuses on the concept of flow in both service and manufacturing environments as it exists in operational excellence.
Su Qtr. MBOE students only.

847 Change and Innovation for Operational Excellence  GRAD  4
Examination of the major accounting and design control structures as well as behavioral approaches to leading change in organizations.
Au Qtr. MBOE students only.

848 Managing the Extended Value Stream  GRAD  4
A focus on working across functions, companies and cultures and managing the Extended Value Stream.
Au Qtr. MBOE students only.

855 Simulation, Risk Analysis, and Decision Making  GRAD  4
Focus on analyzing management decisions that involve uncertainty, risk, and complexity by using modeling tools.
Sp Qtr: 2-2 hr cl. Prereq: Enrollment in MBA Program.

870 Data Analysis for Managers  GRAD  2
This course develops the quantitative thinking and skills needed for managerial data analysis.
Sp Qtr. Repeatable to a maximum of 4 cr hrs.

871 Modeling for Decision Making  GRAD  4
Causes of poor decision making, strategies to overcome them, and techniques to improve decision making.
Wi Qtr.

893 Individual Studies  GRAD  1-6
Individual study projects in selected areas in management sciences.
Au, Wi, Sp Qtr. Prereq: Written permission of instructor. Repeatable to a maximum of 15 or hrs. This course is graded S/U.

894.01 Group Studies  GRAD  1-6
Group study projects in selected areas in management sciences.
Au, Wi, Sp Qtr. Prereq: Written permission of instructor. Repeatable to a maximum of 15 or hrs.

894.02 Group Studies  GRAD  1-6
Group study projects in selected areas in management sciences.
Sp Qtr. Prereq: Written permission of instructor. Repeatable to a maximum of 15 or hrs.

894.03 Group Studies  GRAD  1-6
Group study projects in selected areas in management sciences.
Au, Wi, Sp Qtr. Prereq: Written permission of instructor. Repeatable to a maximum of 15 or hrs.

894.04 Group Studies  GRAD  1-6
Group study projects in selected areas in management sciences.
Au, Wi, Sp Qtr. Prereq: Written permission of instructor. Repeatable to a maximum of 15 or hrs.

894.05 Group Studies  GRAD  1-6
Group study projects in selected areas in management sciences.
Au, Wi, Sp Qtr. Prereq: Written permission of instructor. Repeatable to a maximum of 15 or hrs.

901 PhD Seminar in Decision Sciences I  GRAD  5
PhD seminar in Decision Sciences I. 1-5 hr cl. Repeatable to a maximum of 15 or hrs. This class is required for students in Management Sciences PhD programs. Others need permission of instructor.

902 PhD Seminar in Decision Sciences II  GRAD  5
PhD seminar in Decision Sciences II. Au Qtr: 1-5 hr cl. Repeatable to a maximum of 15 or hrs. This class is required for students in Management Sciences PhD programs. Others need permission of instructor.

929 Current Research in Operations Management  GRAD  5
A series of weekly lectures and seminar discussions on current research topics in operations management.
Au Qtr: 1-5 hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 10 or hrs.

930 Special Topics in Operations Management  GRAD  5
A critical study of selected topics in operations management focusing on the status of research efforts to date; topics vary.
Wi Qtr: 1-5 hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 10 or hrs.

931 Seminar in Operations Management  GRAD  5
A critical review of the literature in the field of operations management; in odd-numbered years, the review covers the process design, location, and layout areas while the production planning and control topics are covered in even-numbered years.
Sp, Au, Wi, Sp Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 10 or hrs.

998 Research in Management Sciences: Thesis  GRAD  1-18
Research for thesis purposes only.
Su, Au, Wi, Sp Qtr. Repeatable. This course is graded S/U.

999 Research in Management Sciences: Dissertation  GRAD  1-18
Research for dissertation purposes only.
Su, Au, Wi, Sp Qtr. Repeatable. This course is graded S/U.

Business Admin: Management Sciences  65

450 Foundations of Marketing Management  UGRD  4
A survey of marketing for non-business students including discussion of marketing practice tools and concepts and their applications in profit and non-profit organizations.
Au, Wi, Sp Qtr. 2-2 hr cl. Prereq: Math 130; Econ 200 and CSE 100 or equivs. Not open to students with credit for BusMkt 494 (Summer 2001) or 650; or to students enrolled in the BSBA program. Credit does not count toward the BSBA degree.

490 Entrepreneurship Marketing  UGRD  4
Focuses on marketing concepts of entrepreneurs leading growth-oriented companies. Typically these are small, young companies with ambitions to become major enterprises.
Au Qtr: 2-2 hr cl. Prereq: Econ 200, or AED Econ 200, or equiv; Math 130 or equiv.

493 Individual Studies  UGRD  1-10
Individual study projects in selected areas in marketing.
Su, Au, Wi, Sp Qtr. Prereq: Written permission of instructor. Repeatable to a maximum of 20 or hrs. This course is graded S/U.
66 Business Admin: Marketing & Logistics

494 Group Studies UGRD 1-10
Group study projects in selected areas in marketing.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

553 Retail Management UGRD 4
Principles and methods of management applied to retailing for non-business students.
* 2 2-hr cl. Prereq: 650 or 450. Not open to students with credit for 494 (Wi 2002) or 753; or to students enrolled in the BSBA program. Credit does not count toward the BSBA degree.

555 Promotional Strategy UGRD 4
Principles and methods of promotional strategy for non-business students, including fundamentals of communication, creative and media strategy.
* 2 2-hr cl. Prereq: 650 or 450. Not open to students with credit for 755 or to students in the BSBA program. Credit does not count toward the BSBA degree.

650 Marketing UGRD 4
Critical survey of field of marketing: structure, functions, policies, costs, and problems analyzed from consumer and other viewpoints; emphasis on principles, trends, and quantitative expression. 650H (honors) may be available.
Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: Econ 210 or equiv.

693 Individual Studies UGRD 1-6
Individual study projects in related areas in marketing.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded SU.

694.41 Group Studies UGRD 1-6
Group study projects in selected areas in marketing.
Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

694.42 Group Studies UGRD 1-6
Group study projects in selected areas in marketing.
Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

694.43 Group Studies UGRD 1-6
Group study projects in selected areas in marketing.
Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

694.44 Group Studies UGRD 1-6
Group study projects in selected areas in marketing.
Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

694.45 Group Studies UGRD 1-6
Group study projects in selected areas in marketing.
Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

750 Consumer Behavior UGRD 4
A review and synthesis of behavioral sciences applied to understanding consumer decision process; emphasis on the impact of consumer decisions upon the strategies of business, government, and consumer business cases.
Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 650 or equiv and BusAdm 499 and BusMgt 330 and 331.

751 Managerial Marketing UGRD 4
Marketing policies and strategy; organization, demand analysis, product planning, pricing, physical distribution, and promotion from a managerial viewpoint.
Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 650 or equiv and BusMgt 330 and 331 and BusAdm 499.

752 Cases in Managerial Marketing UGRD 4
Analysis of marketing policies and strategy, with emphasis on actual business cases.
Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 750 and 755 and 756 and 757.

753 Retail Management UGRD 4
Principles and methods of management as applied to retailing, including location, organization, personnel, buying, inventory control, selling and advertising, services, expenses, and profits.
Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 650 and BusAdm 499.

754 Principles of Electronic Marketing UGRD 4
Focus on marketing management and strategy, marketing research, advertising and services as they relate to use of World Wide Web technologies.
Sp Qtr. 2 2-hr cl. Prereq: 650 and BusAdm 499.

755 Promotional Strategy UGRD 4
Consumer behavior, fundamentals of communication, setting goals and objectives, creative strategy, media strategy, and social and economic issues.
Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 750 and 756 and BusAdm 499.

756 Product Design and Development UGRD 4
Introduction to new product design processes and state of the art tools and strategies for development of new products.
Au, Su Qtrs. Prereq: 750 and 756 and BusAdm 499.
Course will provide an overview of current state-of-the-art tools and strategies for enhancing success rates in introducing new products. Special emphasis is placed on identification of customer needs and development of concepts early in testing.

757 International Marketing UGRD 4
Theory and practice 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.
Au, Sp Qtrs. 2 2-hr cl. Prereq: 650 and BusAdm 499 and 555 and BusMgt 330 and 331; or permission of instructor.

758 Marketing Research UGRD 4
The role of research in the solution of marketing problems; emphasis on available data analysis and methods of the field of investigation.
Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 650 and BusMgt 330 and 331 and BusAdm 499.

759 Sales Management UGRD 4
The sales force and its managerial hierarchy.
Wi Qtr. 2 2-hr cl. Prereq: 650 and BusAdm 499.

760 Services Marketing UGRD 4
Focus on the marketing of services. Issues addressed include service promotion, understanding service failure and recovery, management of service employees and service culture.
Wi, Sp Qtrs. 2 2-hr cl. Prereq: 650 and BusAdm 499.

761 Personal Selling UGRD 4
Principles of effective professional personal selling; current practices that integrate personal selling into marketing programs; application of personal selling experience to broader business contexts.
Au Qtr. Prereq: 650 and permission of instructor. Not open to students with credit for 694.44 in Autumn 2006 or 2007.

780 Logistics Management UGRD 4
Management of logistics activities and costs, including customer service, inventory, transportation, lot quantity costs, warehousing and information systems.
Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 650 and BusMgt 330 and 331 and BusAdm 499.

781 Analysis and Design of Logistics Systems UGRD 4
A quantitative course in logistics covering forecasting, vehicle routing, facility location and network design.
Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 780.

782 Logistics Decision Making UGRD 4
Analysis of decision making in the current logistics environment and the methods needed for finding solutions to integrated logistics problems.
Wi, Sp Qtrs. 2 2-hr cl. Prereq: 780.

783H Honors Research UGRD 1-5
Special topics research in marketing and/or transportation and logistics; research evaluated through papers, thesis, and/or special examinations.
Su, Au, Wi, Sp Qtrs. Prereq. Jr or sr standing in business, 3.40 GPA; and permission of instructor. Repeatable to a maximum of 15 cr hrs.

784 Transportation Management UGRD 4
Study of general economic characteristics and government regulation of rail, motor, water, air, and pipeline carriers; consideration of competitive relations between modes of transportation, basic aspects of traffic management.
Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 650 and BusMgt 330 and 331 and BusAdm 499.

785 Supply Chain Management UGRD 4
Distinguishes logistics and supply chain management and discusses supply chain management processes and related topics.
Au Qtr. 2 2-hr cl. Prereq: BusAdm 499.

841 Principles of Electronic Marketing GRAD 4
Focus on marketing management and strategy, marketing research, advertising and services as they relate to use of World Wide Web technologies.
Au Qtr. 2 2-hr cl. Open only to MBA students or permission of instructor.

842 Product Management Strategy GRAD 4
Comprehensive examination of product and communication design decisions facing product managers in consumer and industrial firms; case studies and industry-sponsored project; new product development and positioning.
Wi Qtr. Prereq: MBA 840 or permission of instructor or MACC Student.

843 Services Marketing GRAD 4
Designed to equip students to become more effective executives of service organizations as well as more enlightened customers of service firms.
Wi Qtr. 2 2-hr cl. Prereq: 840 or permission of instructor. Open only to MBA students or permission of instructor.

844 Applied Marketing Planning GRAD 4
Basic, practical elements of integrated strategic planning, current, and future planning techniques.
Au Qtr. 2 2-hr cl. Prereq: MBA 840 or equivalent other coursework with permission of instructor.

845 Global Market Management and Sustainability GRAD 2-4
Review core concepts of global marketing including, pricing, research, positioning, strategy, social responsibility, communicating with world consumers, and management team development.
Sp, Su Qtrs. Prereq. MBA 840 or permission of instructor.

846 Advertising and Promotion Management GRAD 4
Discussion of specific consumer behavior theories that deal with consumer response to advertising and sales promotion tactics application of these theories in practice.
Wi Qtr. 2 2-hr cl. Prereq: MBA 840 or permission of instructor. Limited to MBA students.
847 Analysis for Marketing Decisions  GRAD 4
Exploration of issues related to data analysis for marketing decisions: costs/benefits of analysis in aggregate; difference between descriptive and structural models; complexities of imperfect information.
Au Qtr. 2 2-hr cl. Prereq: MBA 840 or permission of instructor.

848 Business-to-Business Marketing  GRAD 4
Exploring the value process in business to business relationships. Leading such relationships; facilitating alliances; leading customer solutions; understanding interfaces with other functions; quantifying/measuring value.
Au Qtr. 1 4-hr cl. Prereq: MBA 840 or permission of instructor.

849 Marketing Field Studies  GRAD 4
An advanced marketing course in which the students act as a consulting team and work with a client firm on a marketing problem.
Au Qtr. 2 2-hr cl. Prereq: 844 and 847. Open only to MBA students with 40 cr hrs.

851 Pricing Strategy and Tactics  GRAD 4
Focus on principles of pricing decision making and the integration of pricing decisions with product, promotion, and channel decisions.
Au Qtr. 2 2-hr cl. Prereq: MBA 840. Open only to MBA students or permission of instructor.

852 Brand Management  GRAD 2-4
An overview of the brand management process including concepts, methods and applications.
Au/Wi. Qtr. S 2 4-hr cl. Prereq: Enrollment in the MBA Program or permission of instructor.

853 Strategies in Sales Force Management  GRAD 4
Focuses on management of the sales function and its coordination with other components of marketing strategy including pricing, product development, promotion, and distribution.
Wi, Sp Qtrs. 2 2-hr cl. Prereq: MBA 840 or permission of instructor.

854 Consumer Behavior  GRAD 4
Development of the consumer decision process and its application to marketing strategy decisions.
Au Qtr. 2 2-hr cl. Prereq: MBA 840 or permission of instructor.

855 Marketing Innovation Practice: Theory, Process & Application of Innovation  GRAD 4
Provides the opportunity to develop skills, and understanding of, the theory and application of Innovation processes including a framework for commercial application across various businesses.
Wi, Sp Qtrs. This class will explore emerging trends in Innovation methodologies and how it has been successfully applied to the evolution and development of new and existing production, services, brands, business concepts and processes.

856 The Role of Statistical Concepts and Methods in Marketing Research  GRAD 4
Logic and logistics of research process and role of stats in the process. Explores contributions, limitations of stats concepts, theory & methods. Au, Wi, Su Qtrs. Prereq: Stats 504 or permission of instructor. Two substantive marketing research projects will be selected and teams of students will outline, conduct, and present final results.

880 Logistics Management  GRAD 4
Management of movement services and coordination of demand and supply patterns for optimization of physical systems in terms of cost and customer service.
Au, Sp Qtrs. 2 2-hr cl. Prereq: 880.

881 Analysis and Design of Logistics Systems  GRAD 4
Examination of algorithms for managerial decision making in the design and operation of integrated logistics systems.
Wi Qtr. 2 2-hr cl. Prereq: 880 and MBA 871 or 872.

882 Logistics Software and Technology  GRAD 4
To provide strong knowledge and understanding of the tools and software being used in logistics and supply chain management; and interaction with industry professionals.
Sp Qtr. 2 2-hr cl. Prereq or concorr: 880.

884 Field Problems in Logistics  GRAD 4
Provides students with supervised opportunity to test their problem solving skills on an actual business problem through developing, executing and evaluating a research design.
Wi Qtr. 2 2-hr cl. Prereq: 880.

885 Supply Chain Management  GRAD 4
Deals with the cross-functional integration of key business processes within the firm and across the network of firms that comprise the supply chain.
Au Qtr. 2 2-hr cl. Prereq: MBA student or permission of instructor.

886 Advanced Supply Chain Management  GRAD 4
Focuses on the integration of cross-functional key business processes within the firm and across the network of firms that comprise the supply chain.
Wi Qtr. 1 4-hr cl. Prereq: 885.

893 Individual Studies  GRAD 1-6
Individual study projects in related areas of marketing.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

894.80 Group Studies  GRAD 1-6
Group study projects in selected areas in marketing and logistics.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

894.81 Group Studies  GRAD 1-6
Group study projects in selected areas in marketing and logistics.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

894.82 Group Studies  GRAD 1-6
Group study projects in selected areas in marketing and logistics.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

894.83 Group Studies  GRAD 1-6
Group study projects in selected areas in marketing and logistics.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

894.84 Group Studies  GRAD 1-6
Group study projects in selected areas in marketing and logistics.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

894.85 Group Studies  GRAD 1-6
Group study projects in selected areas in marketing and logistics.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

894.86 Group Studies  GRAD 1-6
Group study projects in selected areas in marketing and logistics.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

894.87 Group Studies  GRAD 1-6
Group study projects in selected areas in marketing and logistics.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

894.88 Group Studies  GRAD 1-6
Group study projects in selected areas in marketing and logistics.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

894.89 Group Studies  GRAD 1-6
Group study projects in selected areas in marketing and logistics.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

950 Seminar in Logistics and Supply Chain Management  GRAD 5
Current research issues in logistics and supply chain management.
Au Qtrs. Prereq: 880. Repeatable to a maximum of 10 cr hrs.

951 Marketing Models  GRAD 5
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: Enrollment in PhD in BusAdm or permission of instructor. Repeatable to a maximum of 10 cr hrs.

952 Consumer Behavior  GRAD 5
Study of the academic literature on consumer behavior with emphasis on the theoretical and empirical contributions of consumer research.
Au Qtr. Repeatable to a maximum of 10 cr hrs.

954 Recent Advancements in Marketing Research  GRAD 5
Provide students with exposure to leading marketing scholars and their most current research and give them an opportunity to critically evaluate it.
Au Qtr. 1 2-hr cl. Open only to doctoral students in marketing. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

955 Seminar in Contemporary Marketing Problems  GRAD 5
Review of current periodical literature and individual investigation by each student of a selected marketing problem of contemporary significance for seminar discussion and written report.
* Prereq: Enrollment in PhD in BusAdm or permission of instructor. Repeatable to a maximum of 10 cr hrs.

998 Research in Marketing: Thesis  GRAD 1-18
Research for thesis purposes only.
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

999 Research in Marketing: Dissertation  GRAD 1-18
Research for dissertation purposes only.
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.
### Chemical and Biomolecular Engineering

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Chemical and Biomolecular Engineering Process Calculations I</td>
<td>3</td>
<td>The application of physico-chemical principles to problems of the chemical industry; emphasis on graphical methods, stoichiometry, heat, and material balances. Au, Wi Qtrs. 2 cl, 2 comp lab hrs. Prereq: Chem 123 and a minimum CPHR of 2.00, and prereq or concur: Math 254 and Physics 131.</td>
</tr>
<tr>
<td>201</td>
<td>Chemical and Biomolecular Engineering Process Calculations II</td>
<td>3</td>
<td>Continuation of 200. Wi, Sp Qtrs. 2 cl, 2 comp lab hrs. Prereq: 200 or ChemEng 200 and prereq or concur: Math 415 and Physics 132.</td>
</tr>
<tr>
<td>420</td>
<td>Elements of Chemical and Biomolecular Engineering Transport Phenomena I</td>
<td>4</td>
<td>Introduction to momentum, mass, and heat transfer with emphasis on the analogies between them; practical applications of momentum transfer (fluid flow). Sp Qtr. 3 cl, 2 comp lab hrs. Prereq: 201, Math 415, Physics 132, or equiv with written permission of instructor.</td>
</tr>
<tr>
<td>489</td>
<td>Professional Practice in Industry</td>
<td>2</td>
<td>Preparation of a comprehensive report based on employment experience in a co-op job in industry. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Admission to co-op program in ChBE. Repeatable to a maximum of 10 cr hrs. This course is graded SU.</td>
</tr>
<tr>
<td>508</td>
<td>Chemical and Biomolecular Engineering Thermodynamics I</td>
<td>3</td>
<td>Application of the fundamental concepts and laws of thermodynamics to problems of the chemical industry; stress on computational problem work. Au Qtr. 2 cl, 2 comp lab hrs. Prereq: 201 or ChemEng 201 and 420 or ChemEng 420.</td>
</tr>
<tr>
<td>509</td>
<td>Chemical and Biomolecular Engineering Thermodynamics II</td>
<td>3</td>
<td>Continuation of 508. Wi Qtr. 2 cl, 2 comp lab hrs. Prereq: 508 or ChemEng 508.</td>
</tr>
<tr>
<td>520</td>
<td>Transport Phenomena</td>
<td>3</td>
<td>Momentum, mass, and heat transfer with emphasis on the analogies between them; practical applications of momentum transfer (fluid flow). Sp Qtr. 3 cl, Prereq: Math 415. Not open to students with credit for 420 or ChemEng 420.</td>
</tr>
<tr>
<td>521</td>
<td>Elements of Chemical and Biomolecular Engineering Transport Phenomena II</td>
<td>3</td>
<td>Continuation of transport theory with emphasis on heat transfer and introduction to radiation; basic principles developed and illustrated with problems from chemical and biomolecular engineering practice. Au Qtr. 2 cl, 2 comp lab hrs. Prereq: 420 or 520 or ChemEng 420 or 520, and a second writing course. GEC course.</td>
</tr>
<tr>
<td>522</td>
<td>Elements of Chemical and Biomolecular Engineering Transport Phenomena III</td>
<td>3</td>
<td>Continuation of the study of transport theory: emphasis on mass transfer and stagewise operations with applied computational problems. Wi Qtr. 2 cl, 2 comp lab hrs. Prereq: 521 or ChemEng 521.</td>
</tr>
<tr>
<td>523</td>
<td>Chemical and Biomolecular Engineering Unit Operations</td>
<td>4</td>
<td>The application of transport phenomena such as fluid, heat, and mass transfer to the chemical and biomolecular engineering operations of evaporation, distillation, drying, etc. Sp Qtr. 3 cl, 2 comp lab hrs. Prereq: 522 or ChemEng 522 and Chem 532.</td>
</tr>
<tr>
<td>610</td>
<td>Chemical and Biomolecular Engineering Kinetics</td>
<td>4</td>
<td>Chemical and engineering principles for the design and operation of chemical reactors; kinetics of simple homogeneous processes and introduction to heterogeneous catalysis. Sp Qtr. 3 cl, 2 comp lab hrs. Prereq: 509 or ChemEng 509 or Chem 532, and 522 or ChemEng 522.</td>
</tr>
<tr>
<td>624</td>
<td>Chemical and Biomolecular Process Dynamics and Control I</td>
<td>4</td>
<td>Study of the dynamics and control of chemical and biomolecular processes; mathematical models of simple processes, including feedback control, are derived, analyzed, and simulated. Au Qtr. 3 cl, 2 comp lab hours. Prereq: 523 or ChemEng 523, 610 or ChemEng 610.</td>
</tr>
<tr>
<td>626</td>
<td>Digital Control Techniques in Chemical and Biomolecular Engineering</td>
<td>3</td>
<td>Study of real-time data acquisition and digital control techniques as applied to chemical processes. Sp Qtr. 3 cl, 3 lab hrs. Prereq: 624 or ChemEng 624 and EnGraph 200, or permission of instructor.</td>
</tr>
<tr>
<td>630</td>
<td>Chemical and Biomolecular Engineering Unit Operations Laboratory</td>
<td>3-6</td>
<td>The fundamental laboratory course in the chemical and biomolecular engineering operations; laboratory investigation of processes such as distillation, fermentation, filtration, etc. Su, Wi, Sp Qtrs. 1-3 conf, 6-15 lab hrs. Prereq: 523; prereq or concur: 610; or permission of instructor. Repeatable to a maximum of 6 or hrs. GEC course.</td>
</tr>
<tr>
<td>632</td>
<td>Introduction to Nanofabrication and Nanomanufacturing</td>
<td>3</td>
<td>Novel nanomanufacturing techniques will be introduced with a focus on top down approaches and a brief introduction of bottom up approaches. Au Qtr. 3 cl, Prereq: ECE 331 or MatSci 205 or permission of instructor. Not open to students with credit for BiomedE 662 or ECE 632 or IndEng 652.02. Cross-listed with BiomedE 662, ECE 632, and IndEng 652.02.</td>
</tr>
<tr>
<td>693</td>
<td>Individual Studies in Chemical and Biomolecular Engineering</td>
<td>UGRD 1-8</td>
<td>Individual Studies in Chemical and Biomolecular Engineering. Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded SU.</td>
</tr>
<tr>
<td>694</td>
<td>Group Studies in Chemical and Biomolecular Engineering</td>
<td>UGRD 1-6</td>
<td>Group Studies in Chemical and Biomolecular Engineering. Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>702</td>
<td>Multiphase Flow Dynamics</td>
<td>3</td>
<td>An introduction to science and engineering principles associated with multiphase flows and their applications to chemical engineering processes. Prereq: 521 or MechEng 510 or grad standing or permission of instructor.</td>
</tr>
<tr>
<td>712</td>
<td>Catalysis and Catalytic Processes</td>
<td>3</td>
<td>Kinetics of catalytic processes, mass transfer in catalysis, characterization, deactivation of catalysts, catalytic reactors, and application of catalytic phenomena in industrial processes. Sp Qtr. 3 cl. Prereq: 522 or ChemEng 522 and 610 or ChemEng 610.</td>
</tr>
<tr>
<td>713</td>
<td>Fuel Cells and Catalysis</td>
<td>3</td>
<td>An introduction to the basic principles involved in fuel cells with special emphasis on catalytic phenomena. Prereq: 508 or Chem 531 or MechEng 500 or MechEng 501 or MatSci 401; CHBE 610 or Chem 532 or MatSci 526; or permission of instructor.</td>
</tr>
<tr>
<td>715</td>
<td>Particle Technology</td>
<td>3</td>
<td>An introduction to engineering processes involving particulates and powders. Multiphase transport phenomena and fluidization are emphasized. Sp Qtr. 2 cl, 2 comp lab hrs. Prereq: 523 or ChemEng 523, Math 415, or grad standing or permission of instructor.</td>
</tr>
<tr>
<td>717</td>
<td>Colloids and Surfaces</td>
<td>3</td>
<td>Introduction to various aspects of colloids and surfaces, including sedimentation, diffusion, thermodynamics, light scattering, surface tension, contact angle, and surfactants. Su, Au Qtrs. 3-2 hr cl. Prereq: 509 or ChemEng 509 or Chem 531, Math 255, Chem 253.</td>
</tr>
<tr>
<td>726</td>
<td>Chemical and Biomolecular Process Dynamics and Control II</td>
<td>3</td>
<td>Further development of process dynamics and control topics begun in 624. Sp Qtr. 3 cr cl. Prereq: 624 or ChemEng 624 or permission of instructor.</td>
</tr>
<tr>
<td>733</td>
<td>Novel Separation Processes</td>
<td>3</td>
<td>Provides further depth beyond 523 in the area of separations applied to chemical and biomolecular processing and introduces some novel techniques that are at the leading edge of separations research. Su, Sp Qtrs. 3 cl. Prereq: 509 or ChemEng 509, 523 or ChemEng 523, or grad standing, or permission of instructor.</td>
</tr>
<tr>
<td>734</td>
<td>Molecular Informatics for Engineers</td>
<td>3</td>
<td>Overview of molecular informatics with emphasis on its use in modern drug discovery and exploration of chemical structure-property relationships. Prereq: Senior or graduate standing in engineering or permission of instructor. Only open to students enrolled in chemical engineering.</td>
</tr>
<tr>
<td>735</td>
<td>Cellular Nanotechnology</td>
<td>3</td>
<td>An introduction and overview of the role of nanotechnology in soft materials and biotechnology. Applications in polymer devices for biomedical and diagnostics are emphasized. Prereq: Sr or grad standing in engineering or permission of instructor. Not open to students with credit for BiomedE 765. Cross-listed with BiomedE 765.</td>
</tr>
<tr>
<td>739</td>
<td>Knowledge-Based Systems in Engineering</td>
<td>3</td>
<td>Application of knowledge-based system principles to engineering problems, including practical knowledge engineering, techniques for problem assessment, and implementation. Wi, Sp Qtrs. 2 1.5-hr cl. Prereq: CptrInf 630 or CSE 630 or permission of instructor. Cross-listed in Computer Science and Engineering: Civil Engineering.</td>
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<td>Course Code</td>
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<td>750</td>
<td>Profession of Chemical and Biomolecular Engineering</td>
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<td>755</td>
<td>Chemical Process Safety</td>
<td>UGRD 3</td>
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<td>760</td>
<td>Chemical and Biomolecular Engineering</td>
<td>UGRD 4</td>
<td>Economy and Strategy</td>
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<td>761</td>
<td>Chemical and Biomolecular Engineering Processes</td>
<td>UGRD 3</td>
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<td>762</td>
<td>Chemical and Biomolecular Engineering Process Development</td>
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<td>764</td>
<td>Chemical and Biomolecular Engineering Process Design</td>
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<td>765</td>
<td>Principles of Biochemical Engineering</td>
<td>UGRD 3</td>
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<td>766</td>
<td>Biotechnology and Bioprocess Engineering</td>
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<td>769</td>
<td>Biomedical Nanotechnology</td>
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<td>771</td>
<td>Air Pollution</td>
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<td>772</td>
<td>Principles of Sustainable Engineering</td>
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<td>773</td>
<td>Introduction to High Polymer Engineering</td>
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<td>774</td>
<td>Polymer Membranes</td>
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<td>775</td>
<td>Rheology of Fluids</td>
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<td>776</td>
<td>Principles of Polymer Conversion Operations</td>
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<td>777</td>
<td>Introduction to Polymer Micro/Nanoeengineering</td>
<td>UGRD 3</td>
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<td>779</td>
<td>Chemical and Biomolecular Engineering Experimental Design</td>
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<td>781</td>
<td>Chemical and Biomolecular Engineering Optimization</td>
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<td>783H</td>
<td>Undergraduate Honors Program Research</td>
<td>UGRD 1-3</td>
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<td>801</td>
<td>Advanced Special Problems in Chemical and Biomolecular Engineering</td>
<td>GRAD 1-15</td>
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<td>808</td>
<td>Advanced Chemical and Biomolecular Engineering Thermodynamics</td>
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<td>812</td>
<td>Advanced Chemical and Biomolecular Engineering Kinetics I</td>
<td>GRAD 3</td>
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<td>813</td>
<td>Advanced Chemical and Biomolecular Engineering Kinetics II</td>
<td>GRAD 3</td>
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<tr>
<td>815.01</td>
<td>Advanced Chemical and Biomolecular Engineering Science and Applications: Advanced Mass Transfer-I</td>
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<td>815.05</td>
<td>Advanced Chemical and Biomolecular Engineering Science and Applications: Heat Transfer-I</td>
<td>GRAD 3</td>
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</table>

**Chemical and Biomolecular Engineering 69**

The roles in professional activities performed by chemical engineers, code of ethics, professional registration, professional societies, responsibilities to management and to labor and as an administrator.

**Wi Qtr. 2 cl, 2 4-hr labs.** Prereq: 624 or ChemEng 624, 760 or ChemEng 760. GEC course.

**Wi Qtr. 3 cl.** Prereq: 773 or ChemEng 773 or permission of instructor.

**Introduction to Polymer Micro/Nanoeengineering**

Introduction to nanotechnology and polymer processing at the micro/nanoscale.

**Chemical and Biomolecular Engineering Experimental Design**

Industrial and research experiments designed with special emphasis on reducing the number of experiments, interpreting final results, and ensuring against unknown factors.

**Chemical and Biomolecular Engineering Optimization**

Description, analysis, and comparison of the techniques in use in unimodel optimization; linear programming; geometric programming.

**Group Studies in Chemical and Biomolecular Engineering**

Special topics in Chemical and Biomolecular Engineering.

**Advanced Chemical and Biomolecular Engineering Thermodynamics**

Detailed discussion of the thermodynamic properties of pure compounds and mixtures; computational problem work emphasizes the application of thermodynamics in industrial problems.

**Advanced Chemical and Biomolecular Engineering Thermodynamics**

Advanced concepts of science and engineering as applied to the chemical and biomolecular engineering field under various topics.

**Advanced Chemical and Biomolecular Engineering Science and Applications: Heat Transfer-I**

Advanced concepts of science and engineering as applied to the chemical and biomolecular engineering field under various topics: Conduction, radiation, and convection.

**Advanced Chemical and Biomolecular Engineering Science and Applications: Heat Transfer-I**

Advanced concepts of science and engineering as applied to the chemical and biomolecular engineering field under various topics.
Chemical and Biomolecular Engineering

815.08 Advanced Chemical and Biomolecular Engineering Science and Applications: Momentum Transfer-I
Advanced concepts of science and engineering as applied to the chemical and biomolecular engineering field under various topics. Basic theory, laminar flow, and phenomenological turbulence. Prereq: ChemEng grad standing or permission of instructor. Repeatable to a maximum of 45 cr hrs. Subdivisions are not repeatable.

815.09 Advanced Chemical and Biomolecular Engineering Science and Applications: Momentum Transfer-II
Advanced concepts of science and engineering as applied to the chemical and biomolecular engineering field under various topics. Turbulence, mixing, and chemical reaction. Prereq: ChemEng grad standing or permission of instructor. Repeatable to a maximum of 45 cr hrs. Subdivisions are not repeatable.

815.15 New or Unusual Chemical and Biomolecular Engineering Unit Operations
Advanced concepts of science and engineering as applied to the chemical and biomolecular engineering field under various topics. Examples: adsorption, atomization, dialysis exclusion, sublimation. Prereq: ChemEng grad standing or permission of instructor. Repeatable to a maximum of 45 cr hrs. Subdivisions are not repeatable.

881 Research Communications in Chemical and Biomolecular Engineering
Analysis and critique of chemical and biomolecular engineering research literature. Training and practice in written and oral communication of research ideas. Su, Sp Qtrs. 3 conf hrs. Prereq: Grad standing in ChemEng. Repeatable to a maximum of 12 cr hrs.

894 Group Studies in Chemical and Biomolecular Engineering
Course will provide special topics in Chemical and Biomolecular Engineering. Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

899 Teaching Practicum in Chemical and Biomolecular Engineering
Teaching and instructional development under faculty guidance in the chemical and biomolecular engineering curriculum. Su, Au, Wi, Sp Qtrs. Prereq: Grad standing. International students for whom English is not the first language must first become certified by passing English 105 and the mock-teaching test. Repeatable to a maximum of 20 cr hrs. Provides teacher training and evaluation that is recognized on transcript. This course is graded S/U.

981 Research Proposal in Chemical and Biomolecular Engineering

995 Seminar in Chemical and Biomolecular Engineering
Formal lectures and discussion of state of the art research and development in chemical and biomolecular engineering. Au, Wi, Sp Qtrs. 1.5-hr cl. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

999 Research in Chemical and Biomolecular Engineering
Research for thesis or dissertation purposes only. Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable. This course is graded S/U.

Chemical Physics

880.01 Frontiers in Spectroscopy
An overview of both fundamental and applied topics on the frontier of spectroscopy. Wi Qtr. 2 1.5-hr cl, 1.5-hr recit. Prereq: Chem 862 or Physics 828 or permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

880.02 Frontiers in Spectroscopy
An overview of both fundamental and applied topics on the frontier of spectroscopy. Wi Qtr. 2 1.5-hr cl, 1.5-hr recit. Prereq: Chem 862 or Physics 828 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

894 Group Studies
Group studies on special topics in chemical physics. Su, Au, Wi, Sp Qtrs. Prereq: Varies with the topic. Repeatable to a maximum of 15 cr hrs.

999 Research in Chemical Physics: Dissertation
Research for dissertation purposes only. Su, Au, Wi, Sp Qtrs. Prereq: Varies with the topic. Repeatable. This course is graded S/U.
163  General Chemistry for Majors  UGRD  5
Continuation of 162 for Chemistry and Biochemistry majors, covering solubility and ionic equilibria, qualitative analysis, thermodynamics, electrochemistry, descriptive chemistry, coordination compounds, and nuclear chemistry. Sp Qtr. 3 cl, 6 lab hrs. Prereq: 162 or 122; Chemistry or Biochemistry major or permission of Department. Safety glasses must be worn in lab.
201H  General Chemistry  UGRD  5
Fundamental chemical principles for selected students. Au Qtr. 4 cl, 3 lab hrs. Prereq: ACT mathematics score of 30 or above and ACT science reasoning score of 28 or above; precon or concur: Math 151; or permission of instructor. Safety glasses must be worn in lab. GEC phys sci course. NS Admis Cond course.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.
202H  General Chemistry  UGRD  5
Continuation of 201H: fundamental principles and nonmetal chemistry. Wi Qtr. 4 cl, 3 lab hrs. Prereq: 201H. Safety glasses must be worn in lab. GEC phys sci course. NS Admis Cond course.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.
209H  Analytical Chemistry I  UGRD  5
Analytical chemistry for chemistry majors; quantitative analysis of the elemental and molecular composition of complex systems. 221H (honors) may be available. Au, Sp Qtr. 3 cl, 8 lab hrs. Prereq: 120 or equiv and eligibility to enroll in Math 151. Safety glasses must be worn in lab. GEC data analysis course.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.
203H  General Chemistry  UGRD  5
Continuation of 202H: fundamental principles and chemistry of metals. Sp Qtr. 3 cl, 6 lab hrs. Prereq: 202H. Safety glasses must be worn in lab. GEC phys sci course. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.
211  Quantitative Chemical Analysis for Biological and Medical Sciences  UGRD  5
Quantitative chemical analysis with particular focus on bioanalytical and pharmaceutical applications. Su, Wi Qtrs. 4 cl, 4 lab hrs. Prereq: 123 or equiv. Not open to students with credit for 221. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.
221  Analytical Chemistry I  UGRD  5
Analytical chemistry for chemistry majors; quantitative analysis of the elemental and molecular composition of complex systems. Au, Sp Qtrs. 3 cl, 8 lab hrs. Prereq: 120 or equiv and eligibility to enroll in Math 151. Safety glasses must be worn in lab. GEC data analysis course.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.
221H  Analytical Chemistry I  UGRD  5
Analytical chemistry for chemistry majors; quantitative analysis of the elemental and molecular composition of complex systems. Au Qtr. Prereq: 123 or equiv and eligibility to enroll in Math 151; Honors program or permission of department or instructor. GEC data analysis course.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.
231  Introductory Organic Chemistry  UGRD  3
A condensed presentation of organic chemistry organized by functional groups with an emphasis on practical applications. Sp Qtr. 4 cl. Prereq: 122 or 125. Not open to students with credit for 251 or 253. 245  Organic Chemistry Laboratory  UGRD  2
Introduction to the scientific writing, computational chemistry and laboratory techniques of organic chemistry, including synthesis, isolation, purification, and identification of organic compounds. Su, Au, Wi, Sp Qtrs. 1 cl, 1-3 hr lab. Prereq: 231 or 251. Not open to students with credit for 245. Safety glasses must be worn in lab. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.
246  Organic Chemistry Laboratory  UGRD  2
Further development of scientific writing, computational chemistry and laboratory techniques of organic chemistry as related to the organic compounds studied in 251 and 252. Su, Au, Wi, Sp Qtrs. 1 cl, 1-3 hr lab. Prereq: 252 and 245 or 254. Not open to students with credit for 255. Safety glasses must be worn in lab. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.
251  Organic Chemistry  UGRD  4
Introduction to structure, nomenclature, physical properties, preparation and reactions of alkanes, alkenes, alkylnes, alcoholcs, ethers, epoxides. Other topics include stereochemistry, acids and bases, reaction mechanisms. 251H (honors) may be available. Au, Wi Qtrs. 4 cl. Prereq: 123 or 203H.
251H  Organic Chemistry  UGRD  4
Introduction to structure, nomenclature, physical properties, preparation and reactions of alkanes, alkenes, alkylnes, alcoholcs, ethers, epoxides. Other topics include stereochemistry, acids and bases, reaction mechanisms. Au Qtr. 4 cl. Prereq: 123 or 203H; Honors program or permission of department or instructor.
252  Organic Chemistry  UGRD  4
Conjugated systems, aromatics, aldehydes, ketones, carboxylic acids, organometallic chemistry, radical reactions. Spectroscopic methods of organic chemistry including mass spectrometry, infrared spectroscopy, nuclear magnetic resonance spectroscopy. 252H (honors) may be available. Wi, Sp Qtrs. 4 cl. Prereq: 251.
252H  Organic Chemistry  UGRD  4
Conjugated systems, aromatics, aldehydes, ketones, carboxylic acids, organometallic chemistry, radical reactions. Spectroscopic methods of organic chemistry including mass spectrometry, infrared spectroscopy, nuclear magnetic resonance spectroscopy. Wi Qtr. 4 cl. Prereq: 251H; Honors program or permission of department or instructor.
253  Organic Chemistry  UGRD  4
Aldehydes, ketones, carboxylic acid derivatives, substitution reactions of carbonyl compounds, amines, carbon-carbon bond forming reactions; polymers. Introduction to carboxydrates, amino acids, nucleic acids, lipids. 253H (honors) may be available. Su, Au, Sp Qtrs. 4 cl. Prereq: 252.
253H  Organic Chemistry  UGRD  4
Aldehydes, ketones, carboxylic acid derivatives, substitution reactions of carbonyl compounds, amines, carbon-carbon bond forming reactions; polymers. Introduction to carbohydrates, amino acids, nucleic acids, lipids. Sp Qtr. 4 cl. Prereq: 252H; Honors program or permission of department or instructor.
254  Organic Chemistry Laboratory  UGRD  3
Introduction to scientific writing, computational chemistry, laboratory techniques of organic chemistry, including synthesis, isolation, purification, and identification of organic compounds. 254H (honors) may be available. Su, Au, Wi, Sp Qtrs. 1 cl, 2-3 hr labs. Prereq or concur: 252. Safety glasses must be worn in lab. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.
254H  Organic Chemistry Laboratory  UGRD  3
Introduction to scientific writing, computational chemistry, laboratory techniques of organic chemistry, including synthesis, isolation, purification, and identification of organic compounds. 255H (honors) may be available. Su, Au, Wi, Sp Qtrs. 1 cl, 2-3 hr labs. Prereq: 252 and 254. Safety glasses must be worn in lab. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.
255  Organic Chemistry Laboratory  UGRD  3
Introduction to scientific writing, computational chemistry, laboratory techniques of organic chemistry, including synthesis, isolation, purification, and identification of organic compounds. 255H (honors) may be available. Su, Au, Wi, Sp Qtrs. 1 cl, 2-3 hr labs. Prereq: 252, 254, and permission of instructor. Safety glasses must be worn in lab. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.
255H  Organic Chemistry Laboratory  UGRD  3
Introduction to scientific writing, computational chemistry, laboratory techniques of organic chemistry, including synthesis, isolation, purification, and identification of organic compounds. Su, Au, Wi, Sp Qtrs. 1 cl, 2-3 hr labs. Prereq: 252 and 254. Safety glasses must be worn in lab. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.
294  Group Studies  UGRD  3-5
Special studies in chemistry. Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 or hrs.
520  Physical Chemistry  UGRD  3
The principles of physical chemistry for students in the biological sciences and for BA students majoring in chemistry. Wi Qtr. 3 cl. Prereq: 211 or 221 or 251, Math 153, and Physics 113 or 133. Not open to students with credit for 531.
521  Physical Chemistry  UGRD  3
A continuation of 520. Sp Qtr. 3 cl. Prereq: 520. Not open to students with credit for 532.
530  Physical Chemistry  UGRD  3
Quantum chemistry. Au Qtr. 3 cl. Prereq: 221 or 251 or equiv; Physics 113 or 133; Math 254; prereq or concur: Math 255. Not open to students with credit for 533.
531  Physical Chemistry  UGRD  3
Statistical mechanics and thermodynamics. Wi Qtr. 3 cl. Prereq: 530.
532  Physical Chemistry  UGRD  3
Thermodynamic equilibrium and chemical kinetics. Sp Qtr. 3 cl. Prereq: 531.
72 Chemistry

541 Physical Chemistry Laboratory UGRD 3
Quantitative measurements of chemical phenomena and the application of chemical principles to their interpretation.
Au, Wi, Sp Qtr. 1 cl, 8 lab hrs. Prereq: 520 or 530; but desirable to have 1 or more physical chemistry courses completed. Safety glasses must be worn in lab.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

542 Physical Chemistry Laboratory UGRD 3
Continuation of 541.
^ Au, Wi, Sp Qtrs. 8 lab hrs. Prereq: 541; prerequisite or concour: 521 or 531. Safety glasses must be worn in lab.

585 Research Principles in Chemistry UGRD 1-5
Independent chemical investigation under the direction of a faculty member, culminating in written and oral reports.
^ Su, Au, Wi, Sp Qtrs. Arr. Prereq: 15 cr hrs in Chem at the 200 level or above and written permission of instructor under whose direction the student will work. Repeatable to a maximum of 20 cr hrs.

587 Analytical Chemistry II: Instrumental Analysis UGRD 3
Applications of physico-chemical principles to problems in qualitative and quantitative chemical analysis.
Sp Qtr. 3 cl. Prereq or concour: 521 or 532, and 541.

588 Laboratory Practice in Instrumental Analysis UGRD 3
Laboratory applications of physico-chemical principles to instrumental analysis.
Sp Qtr. 2-5 hr labs. Prereq or concour: 587 or permission of instructor. Safety glasses must be worn in lab.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

594 Group Studies UGRD 1-5
Group studies of special topics not otherwise offered.

611 Nanotechnology UGRD 3
Introduction to fundamental concepts of nanoscience, exploring strategies for complex assemblies of molecules and developing computational techniques for the investigation of nanotech structures.
^ Sp Qtr. 3 hr cl, project on PCs. Prereq: 123 and permission of instructor.

632 Spectroscopic Methods in Organic Chemistry UGRD 3
Advanced spectroscopic methods in organic chemistry, including proton and carbon NMR, IR, UV, and mass spectrometry.
Wi Qtr. 3 cl. Prereq: 253 or permission of instructor.

635 Carbohydrate Chemistry UGRD 3
To provide an appreciation of carbohydrate chemistry, including synthesis, conformation, and biological importance of carbohydrates and oligosaccharides.
Au Qtr. 3 cl. Prereq: 253.

641 Atmospheric Chemistry UGRD 3
Chemistry and composition of the lower atmosphere (troposphere and stratosphere), including regional and global perspectives.
^ Wi Qtr. 2-5 hr cl. Prereq: 123 and at least j standing or permission of instructor. Chem 231 or 251 recommended.

644 Computational Chemistry UGRD 3
An introduction to computational chemistry including a survey of modern computational techniques and applications.
Au Qtr. 3 1- hr cl. Prereq: 252.

651 Inorganic Chemistry I UGRD 3
Introduction to the principles of inorganic structure and bonding, including molecular symmetry, atomic structure, molecular, and ionic bonding.
Au Qtr. 3 cl. Prereq: 253 or permission of instructor.

652 Inorganic Chemistry II UGRD 3
Chemistry of the transition metals, with emphasis on the stereochemistry, reaction mechanisms, and chemical reactivity of coordination complexes and organometallics.
Wi Qtr. 3 cl. Prereq: 651 or permission of instructor. Not open to students with credit for 751 or 752.

661.01 Biochemistry UGRD 3
A survey of biochemistry for the superior advanced undergrad or the beginning grad student who does not necessarily plan to do grad research in biochemistry.
^ Au Qtr. 3 cl. Prereq: 253 and 521 or 532. Not recommended for students with grades of C or below in prereq courses.

661.02 Biochemistry UGRD 3
A survey of biochemistry for the superior advanced undergrad or the beginning grad student who does not necessarily plan to do grad research in biochemistry.
^ Wi Qtr. 3 cl. Prereq: 253 and 521 or 532. Not recommended for students with grades of C or below in prereq courses.

673 Introduction to Quantum Chemistry and Spectroscopy UGRD 3
Fundamental quantum chemistry with applications to molecular spectroscopy, suitable for all areas of chemistry.
^ Su Qtr. 3 cl. Prereq: 532 or equiv; or permission of instructor. Not open to students with credit for 861.

685 Safety Seminar UGRD 2
A survey of safe operational procedures and protocols to be followed in a laboratory environment.
Wi Qtr. 2 cl. This course is graded S/U.

693 Individual Studies UGRD 0-15
A qualified student may conduct a minor investigation in chemistry.
Su, Au, Wi, Sp Qtrs. Conf, library, and lab. Prereq: Satisfactory courses in field of the problem and permission of instructor. Repeatable to a maximum of 60 cr hrs. This course is graded S/U.

694 Group Studies UGRD 1-5
Designed for students to pursue advanced special studies in chemistry.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

699 Undergraduate Research UGRD 1-10
Undergraduate research or creative activities in various topics.
Prereq. Permission of instructor. Repeatable to a maximum of 20 cr hrs.

701 Seminar in Teaching College Chemistry GRAD 3
Preparation for teaching lower-division chemistry laboratory and recitation sections.
^ Su Qtr. 2 hr cl. Prereq. Permission of Graduate Advising Committee.

720 Principles of Analytical Chemistry GRAD 3
Introduces advanced topics in analytical chemistry that include: statistics, modeling of data, Fourier transforms, atomic spectroscopy, nuclear magnetic resonance and mass spectrometry.
^ Su Qtr. 3 hr cl.

721 Advanced Analytical Chemistry UGRD 3
Chemical and instrumental aspects of modern methods of analysis, emphasizing commonly used contemporary techniques of value to the research chemist.
Au Qtr. 3 cl. Prereq: 587 or equiv or permission of instructor.

722 Principles of Analytical Processes UGRD 3
Speciation and multicomponent equilibria, analog versus digital data acquisition, applications of Fourier transforms, modeling chemical systems.
^ Wi Qtr. 3 cl. Prereq: 531.

730 Intermediate Organic Chemistry UGRD 3
Intermediate-level course for advanced undergraduates and beginning graduate students in organic reactions and mechanisms.
Au Qtr. 3 cl. Prereq: 253. Recommended for entering grad students in organic chemistry. 730, 731, 831, 832, 833 comprise the first year graduate organic sequence.

731 Advanced Organic Chemistry I UGRD 3
Fundamental aspects of physical organic chemistry.
Au Qtr. 3 cl. Prereq: 253, 521 or 532, or permission of instructor. 730, 731, 831, 832, and 833 comprise the first-year graduate organic sequence.

733 Chemistry of Bio-Organic Catalysts and Enzymes UGRD 3
Mechanisms of organic catalysts and enzymes; for students majoring in organic chemistry and biochemistry.
Wi Qtr. 3 cl. Prereq: 253 or equiv; also desirable to have undergraduate level physical chemistry and biochemistry.

734 Chemistry at the Interface of Biology GRAD 3
Introduction to the fundamentals of biological chemistry and discussion of a variety of developments in the application of chemistry to biological processes; chemical approaches to biology.
^ Su Qtr. Prereq: 253 or equiv. Recommended for incoming graduate students as a refresher to biochemical and biological applications.

740 Introduction to Astrochemistry UGRD 3
A treatment of the chemistry occurring in regions outside of the solar system including interstellar clouds, areas of star formation, and envelopes and atmospheres of stars.
Wi Qtr. 3 hr cl. Prereq: Introductory courses in quantum mechanics, thermodynamics, and basic kinetics. Not open to students with credit for Astron 740 or Physics 740. Cross-listed in Astronomy and Physics.

750 Fundamental Principles of Inorganic Chemistry UGRD 3
Theory and application of modern inorganic chemistry for students who intend to take additional courses in chemistry.
^ Su Qtr. 3 cl. Prereq: Undergraduate degree in chemistry or permission of instructor.

751 Transition-Metal Organometallic Chemistry UGRD 3
Preparation, structure and bonding, reactivity, and applications to stoichiometric synthesis and catalysis of transition-metal compounds that contain metal-carbon bonds, including metal carbynes, pi complexes, and metal alkyls.
Au Qtr. 3 cl. Prereq. Permission of instructor or an undergraduate degree in a major in Chem.
752 Inorganic Biochemistry  
Roles of metal ions as biological redox and catalytic cofactors; coordination chemistry; spectroscopy and electrochemistry. 
Au Qtr. 3 cl. Prereq: undergraduate degree in chemistry, or permission of instructor.

753 Inorganic Cluster Chemistry  
Bonding, structures, and chemistry of cluster and ring compounds of the transition and main group elements with applications to heterogeneous catalysis and inorganic polymers. 
Wi Qtr. 3 cl. Prereq: undergraduate degree in chemistry, or permission of instructor. 

754 Solid State Inorganic Chemistry  
Survey of the principles and concepts underlying the synthesis, structure, bonding, reactivity, and properties of solids. 
Sp Qtr. 3 cl. Prereq: Undergraduate degree in Chemistry or equivalent, or permission of instructor.

755 Inorganic Chemistry Laboratory  
Preparation and characterization of inorganic compounds employing a variety of synthetic techniques. 
Wi, Sp Qtrs. 2 cl. 6 lab hrs. Prereq: 311, permission of instructor, or an undergraduate degree in chemistry, or permission of instructor.

761 Advanced Biochemistry: Proteins  
An advanced treatment of protein biochemistry. 
Au Qtr. 3 cl. Prereq: 253, 255, and 521; and Biochem 615; or equivs. Not open to students with credit for 655. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

762 Advanced Biochemistry: Enzymes  
Advanced treatment of enzymology. 
* Au Qtr. 2 1.5-hr cl. Prereq: 253, 255, and 521; and Biochem 615; or equivs. Not open to students with credit for Biochem 762 or MolBioch 761. Cross-listed in Molecular and Cellular Biochemistry.

763 Advanced Biochemistry: Membranes and Bioenergetics  
An advanced treatment of membranes and bioenergetics. 
Wi, Sp Qtrs. 2 cl. Prereq: 253, 255, and 521; and Biochem 615; or equivs. Not open to students with credit for Biochem 763 or MolBioch 762. Cross-listed in Molecular and Cellular Biochemistry.

775 Introduction to Thermodynamics and Kinetics  
Fundamental treatment of the thermodynamics and kinetics of chemical systems. 
Au Qtr. 3-1 hr cl. Prereq: 532 or equiv.

783H Honors Research  
Independent investigation in chemistry culminating in a thesis and an oral examination. 
Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the chem courses 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. Repeatable to a maximum of 15 hrs. Satisfactory completion of at least 8 or hrs is required of candidates for an undergraduate degree with distinction in chem. Repeatable to a maximum of 15 or hrs. This course is graded S/U.

821 Electroanalytical Chemistry  
Advanced level discussion of electrochemical principles and mass transport processes; discussion of applications to organic and inorganic systems. 
Au Qtr. 3 cl. Prereq: 532 or permission of instructor.

822 Principles and Practice of Separation Processes  
Principles and applications of equilibrium and kinetic separation processes such as precipitation, solvent extraction, ion exchange, liquid-liquid chromatography, gas-liquid chromatography, and zone refining. 
Wi Qtr. 3 cl. Prereq: 821 or permission of instructor.

823 Analytical Spectroscopy  
Advanced course in the principles of measurement of the interaction of electromagnetic radiation with matter. 
Sp Qtr. 3 cl. Prereq: 821 or permission of instructor.

824 Nuclear Magnetic Resonance Spectroscopy  
Introduces advanced topics in nuclear magnetic resonance spectroscopy including Bloch equations, relaxation, multidimensional NMR, density operator formalism solid state NMR, and other related concepts. 
Sp Qtr. 2.5 hr cl, lab hrs arr. Prereq: Grad standing in Chem or Physics or permission of instructor.

825 Mass Spectrometry: Principles and Applications  
Introduction to the theory and principles of ionization, fragmentation, and mass analysis. 
Wi Qtr. 3 cl. 5 lab hrs arr. Prereq: Physics 132 or equiv, and permission of instructor.

831 Physical Organic Chemistry  
Thermodynamics, kinetics, and mechanisms of organic reactions with a particular focus on organic reactive intermediates. 
Wi Qtr. 2.5-hr cl. Prereq: 731.

832 Advanced Organic Chemistry II  
An advanced course in the fundamental principles of chemistry covering allylic, hydroaromatic, and aromatic compounds. 
Wi Qtr. 3 cl. Prereq: 731.

833 Advanced Organic Chemistry III  
An advanced course in the fundamental principles of chemistry covering a survey of heterocyclic compounds, carbohydrates, proteins, and enzymes. 
Sp Qtr. 3 cl. Prereq: 832.

835 Advanced Organic Chemistry Laboratory  
An advanced course in fundamental reactions and procedures with emphasis on recent advances in technique. 
* Sp Qtr. 9 lab hrs. Prereq: Permission of student's grad adviser. Safety glasses must be worn in lab. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

836 Advanced Organic Chemistry Laboratory  
Continuation of 835. 
* Sp Qtr. 9 lab hrs. Prereq: Permission of student's grad adviser. Safety glasses must be worn in lab. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

851 Advanced Inorganic Chemistry  
A survey of modern theories of valence and their application to the problems of structural inorganic chemistry. 
Wi, Sp Qtrs. 3 cl. Prereq: 532 and 652 or 752 or permission of instructor.

861 Quantum Chemistry I  
Basic quantum mechanics as a foundation for quantum chemistry; postulates, operators, eigenfunctions, eigenvalues, and Schroedinger wave equations; one-dimensional problems including the harmonic oscillator. 
Au Qtr. 3 cl. Prereq: 532, Math 255 or 415 or equiv, and Physics 133.

862 Quantum Chemistry II  
Angular momentum; matrix elements and representations; the hydrogenic atom; perturbation and variation methods, electron spin, and the helium atom; atomic structure and multiplet theory. 
Wi Qtr. 3 cl. Prereq: 861 or equiv.

863 Quantum Chemistry III  
Electronic structure of molecules; hydrogen molecule and ion, methane, ethylene, benzene, etc.; molecular orbital, valence bond, and self-consistent field methods. 
Sp Qtr. 3 cl. Prereq: 862.

866 Electronic Spectra and Structure of Molecules  
Application of quantum mechanics to the description and interpretation of molecular spectroscopic data with an emphasis on electronic transitions of polyatomic molecules. 
Sp Qtr. 3 cl. Prereq: 863 or equiv or permission of instructor.

876 Chemical Dynamics  
Advanced chemical kinetics. 
Wi Qtr. 3 cl. Prereq: 775 and 861 or equiv.

880 Statistical Thermodynamics  
Statistical thermodynamics of chemical systems. 
Sp Qtr. 3-1 hr cl. Prereq: 775 or equiv.

885 Colloquium in Chemistry  
A discussion of current research in chemistry, all divisions. 
Au Qtr. 3 cl. Prereq: Undergraduate degree with a major in chemistry. Required every qtr of all registered grad students in Chem. Repeatable. This course is graded S/U.

941 Theoretical Organic Chemistry  
An advanced course in a special topic in organic chemistry; topic to be announced. 
Au Qtr. 3 cl. Prereq: 832 and 2nd yr grad standing, or permission of instructor.

942 Theoretical Organic Chemistry  
An advanced course in a special topic in organic chemistry; topic to be announced. 
Wi Qtr. 3 cl. Prereq: 832 and 2nd yr grad standing, or permission of instructor.

943 Theoretical Organic Chemistry  
An advanced course in a special topic in organic chemistry; topic to be announced. 
Sp Qtr. 3 cl. Prereq: 2nd yr grad standing and 831-832, or permission of instructor.

944 Computational Chemistry  
A practical and theoretical introduction to computational chemistry. 
Sp Qtr. 3 cl. Prereq: Permission of instructor.

990 Seminar on Topics in Biochemistry  
Advanced topics in the biological aspects of chemistry. 
Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 12 or hrs.

991 Seminar in Analytical Chemistry  
Topic to be announced. 
Sp Qtr. 3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 6 or hrs.
992 Seminar in Organic Chemistry  
Grad 3
Topic to be announced.
Au, Wi, Sp Qtr. 3 cr. Prereq: 832 and chem 2nd yr grad standing; or equivs and permission of instructor. Repeatable to a maximum of 12 cr hrs.

995 Seminar in Inorganic Chemistry  
Grad 3
Topic to be announced.
Su, Au, Wi, Sp Qtrs. 3 cr. Prereq: 752 or equiv and permission of instructor. Repeatable to a maximum of 6 cr hrs.

996 Seminar in Theoretical Chemistry  
Grad 3
Advanced topics in theoretical chemistry including quantum mechanics of molecular wave functions, energies, rate processes, and quantum and statistical mechanics of condensed phases.
Su, Au, Wi, Sp Qtrs. 3 cr. Prereq: 863 or equiv. Repeatable to a maximum of 9 cr hrs.

997 Seminar in Physical Chemistry  
Grad 3
Seminar course of special topics in experimental physical chemistry.
Au, Wi, Sp Qtrs. 3-4 hr. Prereq: 861 or permission of instructor. Repeatable to a maximum of 9 cr hrs.

999 Research in Chemistry  
Grad 1-15
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

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Chinese

101.01 Level One Chinese I  
UGRD 5
Mandarin Chinese spoken communication and writing system.
Au Qtr. 5 cr. Not open to native speakers of this language or to students with credit for 101 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. GE for lang course. FL Admins Cond courses. Students register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

101.02 Level One Chinese I: Summer Intensive Track  
UGRD 5
Mandarin Chinese spoken communication and writing system.
Su Qtr. 20 3 wks. Prereq: Application and admission to SPECT program. Not open to native speakers of this language or to students with credit for 101 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. GE for lang course. FL Admins Cond courses. Students register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

101.51 Level One Chinese I: Individualized Track  
UGRD 1-5
Mandarin Chinese spoken communication and writing system.
Su, Au, Wi, Sp Qtrs. Not open to native speakers of this language or to students with credit for 101 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. GE for lang course, FL Admins Cond courses. Students register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

101.01 Continuation of 101.
Wi Qtr. 5 cr. Prereq: 101 or 101.01 or 5 cr hrs of 101.51. Not open to native speakers of his language or to students with credit for 102 through regular course enrollment or EM credit. GE for lang course. FL Admins Cond courses. Students register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

102.02 Level One Chinese II: Summer Intensive Track  
UGRD 5
Continuation of 101.
Su Qtr. 20 3 wks. Prereq: 101 or 101.01 or 5 cr hrs of 101.51. Prereq: Application and admission to SPECT program. Not open to native speakers of this language or to students with credit for 102 through regular course enrollment or EM credit. GE for lang course. FL Admins Cond courses. Students register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

102.51 Level One Chinese II: Individualized Track  
UGRD 1-5
Continuation of 101.
Su, Au, Wi, Sp Qtrs. Prereq: 101 or 101.01 or 5 cr hrs of 101.51. Not open to native speakers of this language or to students with credit for 102 through regular course enrollment or EM credit. GE for lang course. FL Admins Cond courses. Students register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

102.01 Continuation of 102.
Sp Qtr. 5 cr. Prereq: 102 or 102.01 or 5 cr hrs of 102.51. Not open to native speakers of this language or to students with credit for 103 through regular course enrollment or EM credit. GE for lang course. FL Admins Cond courses. Students register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

103.02 Level One Chinese III: Summer Intensive Track  
UGRD 5
Continuation of 102.
Su Qtr. 20 3 wks. Prereq: 102 or 102.01 or 5 cr hrs of 102.51. Prereq: Application and admission to SPECT program. Not open to native speakers of this language or to students with credit for 103 through regular course enrollment or EM credit. GE for lang course. FL Admins Cond courses. Students must register for the course at the beginning of the quarter and complete 5 cr hrs during the third 3 weeks of the quarter. This course is available for EM credit.

103.51 Level One Chinese III: Individualized Track  
UGRD 1-5
Continuation of 102.
Su, Au, Wi, Sp Qtrs. Prereq: 102 or 102.01 or 5 cr hrs of 102.51. Not open to native speakers of this language or to students with credit for 103 through regular course enrollment or EM credit. GE for lang course, FL Admins Cond courses. Students must register for the course at the beginning of the quarter and complete 5 cr hrs during the third 3 weeks of the quarter. This course is available for EM credit.

205 Level Two Chinese II  
UGRD 5
Continuation of 104.
Wi Qtr. 5 cr. Prereq: 104 or written permission of instructor. This course is available for EM credit.

206 Level Two Chinese III  
UGRD 5
Continuation of 205.
Sp Qtr. 5 cr. Prereq: 205 or written permission of instructor. This course is available for EM credit.

210 Intensive Second Level Chinese I – Oral  
UGRD 5
First course in the sequence of intensive intermediate Chinese language courses focusing on speaking and listening.
Su Qtr. 5 cr. Prereq: 103 or 103.01 or 5 cr hrs of 103.51, or permission of instructor. Not open to students with credit for 104, 111, or 205.

210.02 Intensive Second Level Chinese I – Oral: Summer track  
UGRD 5
First course in the sequence of intensive intermediate Chinese language courses focusing on speaking and listening.
Su Qtr. 5 cr. Prereq: 103 or 103.01 or 5 cr hrs of 103.51, or permission of instructor. Not open to students with credit for 104, 111, or 205.

211.01 Intensive Second Level Chinese I – Written  
UGRD 5
First course in the sequence of intensive intermediate Chinese language courses focusing on written Chinese.
Au Qtr. 5 cr. Prereq: 103 or 103.01 or 5 cr hrs of 103.51, or permission of instructor. Not open to students with credit for 104 or 205 or 211 or 5 cr hrs of 211.51.

211.51 Intensive Second Level Chinese I – Written: Individualized Track  
UGRD 1-5
First course in the sequence of intensive intermediate Chinese language courses focusing on written Chinese.
Su, Au, Wi, Sp Qtrs. Prereq: 103 or 103.01 or 5 cr hrs of 103.51, or permission of instructor. Not open to students with credit for 104 or 205 or 211 or 5 cr hrs of 211.51. GE for lang course.

231 Traditional Chinese Culture  
UGRD 5
Chinese institutions, philosophical trends, religion, art, and literature prior to the 20th century.
Au, Wi, Sp Qtr. 5 cr. Taught in English. GE arts and hums cultures and ideas course.

232 Modern Chinese Culture  
UGRD 5
Modern Chinese culture as reflected in family life, language, literature, art, etc.
Au, Wi, Sp Qtrs. 5 cr. Taught in English. GE arts and hums cultures and ideas course.

251 Chinese Literature in Translation  
UGRD 5
Representative masterpieces from 3,000 years of Chinese literature, fiction, drama, prose, and poetry in English translation.
Au, Wi, Sp Qtrs. 5 cr. GE arts and hums lit course.
233 Chinese Calligraphy 
UGRD 3
Techniques of writing Chinese characters with a brush; practice in different styles from oracle bone to grass.
Au, Wi, Sp Qtr. 3 cl. Knowledge of Chinese not required. VPA Admis Cond course.

293 Individual Studies 
UGRD 1-5
Individual investigation of problems in Chinese culture, language, and literature.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.
This course is graded S/U.

294 Group Studies 
UGRD 1-5
Group Studies.
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs.

310 Intensive Second Level Chinese II -- Oral 
UGRD 5
Second course in the sequence of intensive intermediate Chinese language courses focusing on speaking and listening.
Wi Qtr. 5 cl. Prereq: 210, and 211 or 211.01 or 5 cr hrs of 211.51; or permission of instructor.

310.02 Intensive Second Level Chinese II -- Oral: Summer track
Series of intensive intermediate Chinese language courses focusing on speaking and listening.
Su Qtr. Prereq: 104.01 or 104.51 or 210 or 210.01 or 210.02 or equivalent, and permission of instructor.

311.01 Intensive Second Level Chinese II -- Written 
UGRD 5
Second course in the sequence of intensive Chinese language courses focusing on written Chinese.
Wi Qtr. 5 cl. Prereq: 210, and 211 or 211.01 or 5 cr hrs of 211.51; or permission of instructor.

311.51 Intensive Second Level Chinese II -- Written: Individualized
Second course in the sequence of intensive Chinese language courses focusing on written Chinese.
Su, Au, Wi, Sp Qtrs. Prereq: 211 or 211.01 or 5 cr hrs of 211.51; or permission of instructor. No open to students with credit for 311 or 311.01. Repeatable to a maximum of 5 cr hrs.

501 Chinese Poetry in Translation 
UGRD 5
Major genres of Chinese poetry from 600 B.C. to the 13th century A.D.
Au, Wi, Sp Qtrs. 5 cl. Taught in English. GEC arts and hums lit course.

502 Chinese Fiction in Translation 
UGRD 5
Novels and short stories from the Ming and Qing dynasties.
Au, Wi, Sp Qtrs. 5 cl. Taught in English. GEC arts and hums lit course.

503 Modern Chinese Literature in Translation 
UGRD 5
Chinese literature from the 1900's to the present day.
Au, Wi, Sp Qtrs. 5 cl. Taught in English. GEC arts and hums lit course.

504 Chinese Drama in Translation 
UGRD 5
The development of Chinese drama from the Yuan-dynasty to modern times.
Au, Wi, Sp Qtrs. 5 cl. Taught in English. GEC arts and hums lit and social diversity - international issues (Global) course.

505 China in Chinese Film 
UGRD 5
An overview of Chinese cinema, with a focus on how film represents issues of nationhood, national identity, and national trauma.
Prereq: English 110 or equiv. Taught in English, no Chinese required.

506 China Pop! Contemporary Pop Culture and Media in Greater China 
UGRD 5
Introduces students to contemporary popular culture and media from Greater China, encouraging independent research and critical discussion of topics covered.
Sp Qtr.

507 Level Three Chinese I 
UGRD 5
Continued study of spoken communication, including broadcast media, reading Chinese publications, and development of written composition.
Au Qtr. 5 cl. Prereq: 206 or equiv with written permission of instructor.

508 Level Three Chinese II 
UGRD 5
Continuation of 507.
Wi Qtr. 5 cl. Prereq: 507 or permission of instructor.

509 Level Three Chinese III 
UGRD 5
Continuation of 508.
Sp Qtr. 5 cl. Prereq: 508 or permission of instructor.

510 Intensive Third Level Chinese III -- Oral 
UGRD 5
Third course in the sequence of intensive Chinese language courses focusing on speaking and listening.
Sp Qtr. 5 cl. Prereq: 310, and 311 or 311.01 or 5 cr hrs of 311.51; or permission of instructor.

510.02 Intensive Third Level Chinese III -- Oral: Summer track
Series of intensive intermediate Chinese language courses focusing on speaking and listening.
Prereq: 310 or 310.01 or 310.02 or equivalent, and permission of instructor.

511.01 Intensive Third Level Chinese III -- Written 
UGRD 5
Third course in the sequence of intensive Chinese language courses focusing on written Chinese.
Sp Qtr. 5 cl. Prereq: 310, and 311 or 311.01 or 5 cr hrs of 311.51; or permission of instructor.

511.51 Intensive Third Level Chinese III -- Written: Individualized Track.
Third course in the sequence of intensive Chinese language courses focusing on written Chinese.
Su, Au, Wi, Sp Qtrs. Prereq: 310, and 311 or 311.01 or 5 cr hrs of 311.51; or permission of instructor. Not open to students with credit for 311 or 5 cr hrs of 511.51.

580 The Chinese Language: Description and Analysis 
UGRD 5
Important elements of the Chinese language, its structure, dialects, writing system, as well as language use and planning; taught in English.
Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 103 or equiv or permission of instructor. GEC third writing course.

600 Performance Traditions of China 
UGRD 5
Introduction to the panorama of oral and orally-related performance traditions of China; explore local traditions of professional storytelling, epic singing, folktales, and local drama.
Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 231 or 251 or 252, or EALL 131, or Japanese 231 or 251 or 252, or Korean 231 or 251; or permission of instructor.

601 Classical Chinese I 
UGRD 5
Selected readings from representative authors of classical times.
Au, Wi. Qtrs. 5 cl. Prereq: 206 or equiv with written permission of instructor.

602 Classical Chinese II 
UGRD 5
Continuation of 601.
Wi, Sp Qtrs. 5 cl. Prereq: 601 or equiv with written permission of instructor.

603 Classical Chinese III 
UGRD 5
Continuation of 602.
Sp Qtr. 5 cl. Prereq: 602 or equiv with written permission of instructor.

610.01 Fourth-Level Chinese I 
UGRD 5
Level Four Chinese: continuation of 510 and 511.
Au Qtr. 3.5-hr cl. Prereq: 509, or 510 and 511 or 511.01 or 5 cr hrs of 511.51; or written permission of instructor. Not open to students with credit for 610 or 5 cr hrs of 610.51.

610.51 Fourth-Level Chinese I: Individualized Track 
UGRD 1-5
Level Four Chinese: continuation of 510 and 511.
Su, Au, Wi, Sp Qtrs. Prereq: 509, or 510 and 511 or 511.01 or 5 cr hrs of 511.51; or written permission of instructor. Not open to students with credit for 610 or 610.01. Repeatable to a maximum of 5 cr hrs.

611.01 Fourth-Level Chinese II 
UGRD 5
Level Four Chinese; continuation of 610.
Wi Qtr. 5 cl. Prereq: 610 or 610.01 or 5 cr hrs of 610.51 or written permission of instructor. Not open to students with credit for 611 or 5 cr hrs of 611.51.

611.51 Fourth-Level Chinese II: Individualized Track 
UGRD 1-5
Level Four Chinese; continuation of 610.
Su, Au, Wi, Sp Qtrs. Prereq: 610 or 5 cr hrs of 610.51 or written permission of instructor. Not open to students with credit for 611 or 611.01. Repeatable to a maximum of 5 cr hrs.

612.01 Fourth-Level Chinese III 
UGRD 5
Level Four Chinese; continuation of 611.
Sp Qtr. 5 cl. Prereq: 611 or 611.01 or 5 cr hrs of 611.51; or written permission of instructor. Not open to students with credit for 612 or 5 cr hrs of 612.51.

612.51 Fourth-Level Chinese III: Individualized Track 
UGRD 1-5
Level Four Chinese; continuation of 611.
Su, Au, Wi, Sp Qtrs. Prereq: 611 or 5 cr hrs of 611.51 or written permission of instructor. Not open to students with credit for 612 or 612.01. Repeatable to a maximum of 5 cr hrs.

615 China's Perspectives on Chinese Civilization 
UGRD 5
Mainstream Chinese perspectives on major issues in Chinese civilization and major ways of developing and presenting viewpoints and arguments in discourse of Chinese Civilization.
Prereq: 612.01 or 612.51 or equiv. Repeatable to a maximum of 10 cr hrs. Taught in Chinese.

651 History of Chinese Literature I 
UGRD 5
Chinese literature from antiquity to the end of Six Dynasties; various aspects of the classical tradition and new developments in the Age of Disunity.
Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: Written permission of instructor. Taught in English. Partial texts in Chinese optional. Open to nonmajors.

652 History of Chinese Literature II 
UGRD 5
Chinese literature from Sui to the present; literary trends and achievements of the Sui-Tang period; rise of vernacular writings; modern literature under western impact.
Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: Written permission of instructor. Taught in English. Partial texts in Chinese optional. Open to nonmajors.
76 Chinese

653 Classical Chinese Literature in Modern China UGRD 5
Examines adaptations and uses of classical Chinese literature (novel, plays, poems, prose) in the modern Chinese-speaking world in order to better understand Chinese culture. 2 2-hr cl. Prereq: 612 or equiv. 5 cr hrs. Not a substitute for regular language courses.

674 Chinese Opera UGRD 5
An introduction to Chinese (Peking) opera as dramatic literature and performing art; study of selected plays and illustrated discussions of various aspects of the theatre. Au, Wi, Sp Qtrs. 5 cl.

678 Studies in Chinese-American Literature UGRD 5
Critical study of modern Chinese-American literature in historical and cultural context; topics vary: gender issues, genre studies, women’s writing. Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 10 or hrs in any literature or grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs. Including cr hrs earned in CompStd 678 or English 681.03. Cross-listed in Comparative Studies and with English 681.03.

680 Introduction to Chinese Linguistics UGRD 5
Investigation of the phonology, morphology, syntax, lexicon, and writing system of the Chinese language. Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 103 and Linguist 601, or permission of instructor.

681 History of the Chinese Language UGRD 5
An investigation of the relations between modern Chinese and its earlier stages, ancient and archaic Chinese. Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 880 or permission of instructor.

683 Study of the Chinese Writing System UGRD 5
A critical study of the origin, classification, composition, and development of the Chinese writing system, including problems in simplification andalphabeticization. Au, Wi, Sp Qtrs. 2 cl. Pre req: 103 or permission of instructor.

690 Chinese Translation Workshop UGRD 3
Investigations of problems and techniques of translating Chinese into English and English into Chinese; practice of translation of selected passages; individual assignments and group discussion. Au, Wi, Sp Qtrs. 2 cl. Prereq: 509 and 603, or equivs with written permission of instructor.

693 Individual Studies UGRD 1-5
Directed study to meet individual research needs of students in area studies and East Asian programs. Su, Wi, Au Qtrs. Pre req: 509 or 603, and written permission of instructor. Repeatable to a maximum of 15 cr hrs. Not a substitute for regular language courses. This course is graded S/U.

694 Group Studies GRAD 1-5

698.01 Study Tour: Domestic UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details. Prereq: Permission of instructor. Repeatable for different titled study tours only.

698.02 Study Tour: Foreign UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details. Prereq: Permission of instructor. Repeatable for different titled study tours only.

717 Analysis of Contemporary Chinese Media UGRD 5
Understanding the divisions and configuration of contemporary Chinese media and becoming able to analyze a chosen topic of contemporary Chinese media. Prereq: 612 or equiv. Repeatable to a maximum of 10 cr hrs. Taught in Chinese.

750 Negotiating in Chinese Culture UGRD 5
Fifth-year-end-up Chinese in spontaneous professional discourse. Parallel to Chinese 751, 752 and 753, emphasizing oral presentation instead of reading and writing. Su, Au, Wi, Sp Qtrs. Pre req: 612. 512 or 612 or 512 or equiv.

751 Selected Readings in Scholarly Chinese Texts I UGRD 3
Academic writings in the humanities and social sciences by modern Chinese scholars in both the wen-yen and pai-hua styles. Au Qtr. 3 cl. Prereq: 509 or permission of instructor.

752 Selected Readings in Scholarly Chinese Texts II UGRD 3
Continuation of 751. Wi Qtr. 3 cl. Prereq: 751 or permission of instructor.

753 Selected Readings in Scholarly Chinese Texts III UGRD 3
Continuation of 752. Sp Qtr. 3 cl. Pre req: 752 or permission of instructor.

755 Language in China UGRD 5
Language issues in China, including language variation, writing systems, minority languages, and Chinese language issues in the information age. Prereq: 513 or equiv. Taught in Chinese.

760 Interpersonal Relations and Professional Networking UGRD 5
Exploration of assumptions and expectations motivating behaviors in different cultures when developing interpersonal relations and professional networks. 2 2-hr cl. Pre req: 612.01 or 612.51 or equiv. Repeatable to a maximum of 10 or hrs. Conducted in Chinese and English with Chinese cohort. 5 cr hrs. Not a substitute for regular language courses.

761 Modern Chinese Poetry UGRD 3
Lectures and readings covering major poets since 1919. * Au Qtr. 3 cl. Pre req: 652 or permission of instructor.

762 Modern Chinese Prose UGRD 3
Studies of various types of prose literature from the 1900’s to the present. * Sp Qtr. 3 cl. Prereq: 652 or permission of instructor.

763 Modern Chinese Fiction UGRD 5
Readings in twentieth-century Chinese fiction. * Au Qtr. 2 2-hr cl. Prereq: 651 or 652 or permission of instructor.

764 Modern Chinese Drama UGRD 3
Lectures on and readings in works by major 20th-century playwrights including Hung Shen and Tsao Yu. * Wi Qtr. 3 cl. Pre req: 652 or permission of instructor.

770 Literary Language in Modern Chinese UGRD 5
Employment of literary language in spoken discourse among Chinese professionals - unscripted spoken discussions on topics in related domains such as business, education, and government. Prereq: 612.01 or 612.51 or equiv. Repeatable to a maximum of 20 cr hrs. Taught in Chinese.

771.51 Studies of Domain Resources UGRD 1-5
A study of the major categories of resources for the student’s chosen domain (I). Prereq: 612 or equiv. Repeatable to a maximum of 5 cr hrs.

772.51 Research and Presentation in a Domain UGRD 1-5
Study of major categories of resources for student’s chosen domain (II). Research and present a research topic that addresses a general or characteristic issue in chosen domain. Prereq: 771.51 or equiv. Repeatable to a maximum of 5 cr hrs.

773.51 Developing a Project in a Domain UGRD 1-5
A study of the major categories of resources for the student’s chosen domain (III). Develop and propose a project in the student’s chosen domain based on Chinese resources in the domain. Pre req: 772.51 or equiv. Repeatable to a maximum of 5 cr hrs.

782 Chinese Phonology UGRD 3
Mandarin phonology and Chinese dialectology. * Au, Wi, Sp Qtrs. 3 cl. Pre req: 681 or permission of instructor.

783H Honors Research UGRD 3-5
A program of reading arranged for each student, with individual conferences, reports, and honors thesis. Au, Wi, Sp Qtrs. Pre req: 4th yr standing; a grade of A in at least half of Chinese 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. Open only to Chinese majors. Failure to receive a mark of S in this course is a disqualification for special honors. This course is graded S/U.

784 Chinese Syntax UGRD 3
An investigation of the syntactic structure of Mandarin Chinese. * Au, Wi, Sp Qtrs. 3 cl. Pre req: 680 or 681 or permission of instructor.

785 Modern Chinese Dialects UGRD 3
Investigation of the phonology, morphology, lexicon, and syntax of the major modern Chinese dialects from a cross-dialectal, comparative approach. Au, Wi, Sp Qtrs. 2. 1.5-hr cl. Pre req: 680 or permission of instructor.

792 Interdepartmental Studies in the Humanities UGRD 3-5
Two or more departments present colloquia on subjects of mutual interest; topics to be announced. Su, Au, Wi, Sp Qtrs. Pre req: Grad standing or permission of instructor(s). Repeatable to a maximum of 15 cr hrs. With permission of dept.

800 Chinese Bibliography and Research Methods UGRD 5
An introduction to bibliographies and reference works in the Chinese humanities; general and specific problems for research. Au, Wi, Sp Qtrs. 5 cl. Pre req: 509 and 603, or equivs with written permission of instructor.

804 Advanced Classical Chinese I UGRD 3
Designed for further study of the syntax and vocabulary of classical Chinese; texts are selected from literature, history, and philosophy. Au Qtr. 3 cl. Pre req: 603 or equiv with written permission of instructor.

805 Advanced Classical Chinese II UGRD 3
Continuation of 804. Wi Qtr. 3 cl. Pre req: 804.

806 Advanced Classical Chinese III UGRD 3
Continuation of 805. Sp Qtr. 3 cl. Pre req: 805.
**Circulation Technology**

210 **Information Technology in Medicine** UGRD 5
An overview of computer-assisted technology in medicine in the areas of teleradiology, telemedicine, remote diagnosis and automated pharmaceutical dispensing.
Au, Su, Wi, Sp Qtr. 3-hr cl. Prereq: Math 148 or equiv.

400 **The Practice of Circulation Technology** UGRD 5
An introduction to the practice of Circulation Technology with an emphasis on the student's function within the medical-surgical team.
Au Qtr. 2 cl, 2-2.5 hr labs. Prereq: Enrollment in Circulation Technology or permission of instructor.

415 **Applied Circulation Technology-Physiological** UGRD 5
Principles
The presentation of cardiac, respiratory, and renal physiology and their relationship to extracorporeal devices and technology.
Wi Qtr. 3 cl, 1 hr lab. Prereq: 400 or permission of instructor.

420 **Circulation Technology Instrumentation** UGRD 5
The application of mechanical and electronic principles to the instrumentation unique to circulation technology with emphasis on design and selection of equipment.
Wi Qtr. 3 cl, 2-2.5 hr labs. Prereq: 400 or permission of instructor.

430 **Clinical Management of the Cardiac Patient** UGRD 5
The presentation of cardiac anatomy, pathophysiology, and diagnosis and treatment of cardiac disease including the use of extracorporeal devices.
Sp Qtr. 2-2.5 hr cl, 1 hr lab. Prereq: 400 or permission of instructor.

450 **Cardiopulmonary Monitoring and Assessment** UGRD 5
Lectures and laboratories involving invasive and non-invasive techniques of cardiopulmonary assessment and data interpretation.
Sp Qtr. 2-2 hr cl, 1-3 hr lab. Prereq: 420 or permission of instructor.

**Chinese**

77 871 **Traditional Chinese Poetry** GRAD 5
Lectures and readings from ancient odes and songs and the later shih and tz'u poetry.
* Au Qtr. 2 hr cl. Prereq: 651 and 652, or permission of instructor.

872 **Traditional Chinese Prose** GRAD 5
Lectures on and readings in various types of non-fiction prose in ku-wen and yu-yu styles of early times.
* Sp Qtr. 2-2 hr cl. Prereq: 651 and 652, or written permission of instructor.

873 **Traditional Chinese Fiction** GRAD 5
Lectures and readings in classical and vernacular fiction.
* Au Qtr. 2-2 hr cl. Prereq: 651 and 652, or permission of instructor.

874 **Traditional Chinese Drama** GRAD 5
A lecture and reading course in Yuan, Ming, and Ch'ing drama.
* Sp Qtr. 2-2 hr cl. Prereq: 651 and 652, or permission of instructor.

875 **Chinese Literary Criticism** GRAD 5
The historical development of critical theories, with concentration on major critics.
* Sp Qtr. 2-2 cl. Prereq: 3 Chinese literature courses at the 700 level or above, or equiv with written permission of instructor.

879 **Seminar in Chinese Literature** GRAD 1-5
An intensive reading course in Chinese literature with a selected topic for each offering and research projects for individual students; topic to be announced.
Su, Au, Wi, Sp Qtr. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

882 **Studies in Chinese Historical Phonology** GRAD 5
Critical study of the rhyme dictionaries, the reconstruction of the phonology of old Chinese and its relations to modern Chinese dialects.
* Au, Wi, Sp Qtr. 2-2 hr cl. Prereq: 782 or permission of instructor.

884 **Studies in Chinese Historical Syntax** GRAD 3
Problems of Chinese historical syntax; grammatical structures of classical Chinese; syntactic rules found in selected texts from various ancient writings.
* Au, Wi, Sp Qtr. 3 cl. Prereq: 784 or permission of instructor.

889 **Seminar in Chinese Linguistics** GRAD 1-5
Topics include the history of Chinese linguistics and related areas, specific studies in Chinese dialects, etc.
Au, Wi, Sp Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

999 **Research in Chinese: Dissertation** GRAD 1-18
Research for dissertation purposes only.
Su, Au, Wi, Sp Qtr. Repeatable. This course is graded S/U.

**City and Regional Planning**

100 **Survey of City and Regional Planning Program** UGRD 1
Provides new students with information about the workings of the University and the City and Regional Planning program.
Au Qtr. Cross-listed in Architecture and Landscape Architecture.

110 **Local Issues in City Planning** UGRD 5
A look at Central Ohio to illustrate planning problems and solutions offered by planners related to the environment, preservation, neighborhood revitalization, public transport and others.

210 **Introduction to City Planning History** UGRD 5
The history of human settlement planning in ancient, medieval/renaissance and industrial contemporary times to illustrate issues in housing, transportation, sustainability, suburbanization and growth management.

310 **Introduction to City and Regional Planning** UGRD 4
Introduction to fundamental concepts, including physical planning, transportation, housing, land use, urban development, and preservation.
Au, Wi, Sp Qtr. 4 cl.
320 Planning for Housing UGRD 4
An introduction to the American housing system, evolution of housing programs, and selected topics in planning for housing in urban and regional contexts. 4 cl.

330 Planning and Urban Design UGRD 4
Introduction to the use of concepts related to urban design and to the planning process. 4 cl.

340 Data Analysis and Forecasting in Planning UGRD 5
Data analysis and forecasting methods used to plan for population and employment growth, land use and public services. Prereq: 110 or 210 or 330, Math 117 or equiv, one stat course or permission of instructor.

350 Legal and Institutional Framework for Planning UGRD 5
An introduction to the administrative, institutional and legal framework for planners with emphasis on land use controls and municipal administration. Prereq: 110 or 210. 5 cl.

510 Service Learning in City Planning UGRD 5
A service learning course: Students work with Central Ohio professionals and community groups on a planning issue they face in Central Ohio. Prereq: 110, 210 and at least two of 340, 350, 601 and 610 or permission of instructor. Repeatable to a maximum of 15 or hrs.

597 City Planning in the Contemporary World UGRD 4
Urban shelter and service delivery in developed-developing and capitalist/socialist societies of the world; role of income, jobs, and planning in housing. Sp Qtr. 2 hr cl. Prereq: Sr standing. Not open to students with credit for 425. LAR course. GEC contemporary world course.

601 Project and Policy Analysis in Planning UGRD 5
A survey of financial and economic principles used in project planning for land use, zoning, housing and infrastructure. Prereq: Econ 200 or AEDEcon 200 or equiv, or permission of instructor.

607 Fundamentals of Geographic Information Systems UGRD 5
Basic principles of geographic and land information systems and their use in spatial analysis and information management. Au Qtr. 3 cl. 3-1 hr lab. Prereq: Sr standing. Not open to students with credit for Geog 665, or 671 in CivilEn, GeodSci, Geog, GeolSci, or NatRes. Cross-listed in Civil Engineering, Geodetic Science, Geography, Geological Sciences, and Natural Resources.

608 Geographic Information Systems in Professional Planning Practice UGRD 4
Provides students with in-depth and hands-on training in GIS applications for city and regional planning. Wi Qtr. 2 hr cl. Prereq: 607 or equiv with permission of instructor.

609 Advanced Computer Based Analysis and Visualization Tools for Planners UGRD 4
Provides students with in-depth and hands-on training in GIS applications for city and regional planning, including 3D visualization and animation software. Sp Qtr. Prereq: 607 or 608 or CivilEn 607 or NatRes 607 or GeodSci 607 or Geog 607.

610 Planning Communications UGRD 5
Surveys the basic techniques planners utilize to communicate with the public and other professionals and provides practice opportunities. Prereq: English 110.01, 110.02, 110.03 and a 367 course. 6 cl.

628 Planning in Columbus UGRD 4
An overview of current planning and policy initiatives in the Columbus region; the role of practitioners in developing and implementing those initiatives. Wi Qtr. 1-2 hr cl.

634 American City Planning since 1900 A.D. UGRD 4
Introduction to current American city planning processes and urban form through historic evolution of urban problems and related urban planning systems since 1900. Au Qtr.

684 Group Studies UGRD 1-5
Group Studies. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 10 or hrs.

697 Study at a Foreign Institution UGRD 1-15
An opportunity for Ohio State students to study at a foreign institution and receive Ohio State credit for that work. Su, Au, Wi. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 or hrs. This course is Progress (P) graded. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

700 Orientation to City and Regional Planning UGRD 1
Orientation to City and Regional Planning allows students to learn about the teaching and research of the faculty and prepare degree plans. Au Qtr.

701 Internship in City and Regional Planning UGRD 1
The internship seminar provides students with an opportunity to reflect and learn about career opportunities in city and regional planning. Au, Wi, Sp Qtrs. Repeatable to a maximum of 6 or hrs. All City and Regional Planning master students must take three credit hours of CRPlan 701. Service Learning course.

702 Urban Planning Graphics UGRD 4
Fundamentals of graphic technology in page and document layout and design. Au, Su Qtrs. 2-3 hr labs. Prereq: Rank 3 or 4 or grad standing or permission of instructor. Not open to undergraduates in LArch. Not open to students with credit for LArch 702. Crosslisted in Landscape Architecture.

710 Introduction to Urban and Regional Planning for Open Space, Recreation, and Conservation UGRD 3
Review of leisure and recreational activities with associated design criteria, definition of the need for open space, and exploration of workable programs for its preservation and development. * Sp Qtr. 2 cl.

712 Theory of City and Regional Planning UGRD 4
Planning processes; the general plan; formulating goals; land development policies and decisions; alternative urban and regional forms; role and scope of planning. Sp Qtr. 4 cl. Not open to students with credit for 812.

715 Integration of Science and Mathematics Learning Using Real Data Sets UGRD 3
Project-based learning that integrates science concepts, technology skills, and web-based resources to build mathematical models. Su Qtr. 3-5 hr cl. Not open to students with credit for EduTL 715. Cross-listed in Education: Teaching and Learning.

720 Introduction to Analysis of Energy Factors in City and Regional Planning UGRD 3
Covers the resource, technological, environmental, economic, and institutional dimensions related to coal, natural gas, electricity, solar, geothermics, environmental impacts, and energy conservation in cities. Wi Qtr. 2 cl.

721 Seminar on Mathematical Models of Energy Management and Planning UGRD 3
Mathematical models in coal, electricity, energy storage and curtailment, solar energy, energy/environment interactions, and comprehensive urban and regional energy planning. Au Qtr. 2 cl.

722 Introduction to Analysis and Use of Environmental Factors in City and Regional Planning UGRD 4
Introduction to application and utilization of environmental considerations in the formulation of land use policy and development plans. Wi Qtr. 2 cl.

724 Introduction to Planning for Sustainable Development UGRD 4
Introduction to sustainable development and planning; focuses on the relationship between land use and sustainability. Wi Qtr. 1-3 hr seminar. Prereq: Rank 3, 4, or grad standing.

731 Outlines of Urban Design UGRD 3
Urban design as an area of specialization in urban planning; theories and processes in urban design; evaluation of criteria. Sp Qtr. 3 cl.

732 Urban Planning and Urban Form: Psychological Functions UGRD 3
Urban planning for the organization and character of the physical environment as significant variables in psychological processes basic to effective individual functioning; emphasis on implications for urban design. Au Qtr. 3 cl.

733 Urban Planning and Urban Form: Social Functions UGRD 4
Urban planning for the organization and character of the physical environment as significant variables in social processes basic to effective individual functioning; emphasis on implications for urban design. Wi Qtr. 2-2 hr cl.

734 Research and Analytic Methods for Urban Designers UGRD 3
Use of research and analytic methods in assisting the urban designer in problem formulation, search, prediction, evaluation, and choice. Sp Qtr. 2 cl.

735 Programming Environments for Human Use UGRD 3
Introduction to user oriented environment programming for planners and designers; application of several methods for specifying the characteristics required of an environmental setting to support user behavior. * Sp Qtr. Distance Learning Course (Web-taught).
741 Urban Sector and Project Planning in Developing Countries GRAD 5
Issues in urban sector planning with a focus on housing and service delivery, including financial intermediation, municipal finance and cost recovery, local administration, and urban land. Wi Qtr. 2-2 hr cl.

742 Cities of the World: International Planning Innovations GRAD 4
Analysis of international planning ideas, policies, implementation projects and their resulting impacts with particular regard to the concept of innovation. Au, Wi Qtrs. Prereq: Rank 3, 4, or graduate standing.

745 Physical Element of Urban Development GRAD 5
Physical components of urban areas: residential, commercial, industrial, pedestrian, and vehicular circulation; other community facilities: analysis of design criteria and standards. Wi Qtr. 3 cl, 3 lab hrs. Not open to students with credit for 845.

746 Managing the Urban Spatial Environment: Regulatory Techniques GRAD 3
Physical planning, environmental and urban design policy design and implementation in central city and suburban settings; emphasis on innovative regulatory approaches. * Wi Qtr. 2 cl.

749 Studio in Planning for Developing Countries GRAD 5
A studio with group projects on planning issues in developing countries. Wi Qtr. Prereq: 741. Service Learning course.

750 Resolving Social Conflict GRAD 4
A multidisciplinary examination of social conflict, its dynamics, and its negotiated and consensual resolution; offers a broad-based framework for diagnosing and managing conflict; applied to legal, environmental, organizational, and geopolitical contexts. Au Qtr. 1-3 hr cl. Prereq: Grad standing or permission of instructor. Cross-listed in Business Administration: Interdisciplinary and Natural Resources.

752 Urban Planning for Housing GRAD 3
Introduction to urban planning issues related to housing with regard to urban structure, markets reform, suburbanization, new towns, urban renewal, and rehabilitation. Au Qtr. 3 cl.

753 Outlines of Regional Planning GRAD 3
State, national, and regional planning; components of regional development; regional analysis and design. Au Qtr. Cl. Not open to students with credit for 813.

755 State Planning of Regional Growth and Development GRAD 3
Rationale for state intervention in regional economics, growth centers and neoclassical models, development planning in foreign countries; comparison and evaluation of models and evidence. Wi Qtr. 3 cl. Prereq: 753 or equiv with written permission of instructor. Not open to students with credit for 820.

761 Land-Use Controls GRAD 4
Legal basis of land-use controls in the United States, provisions, procedures and issues in zoning, subdivision regulation, urban renewal, building and housing codes, and acquisition of real property for public use. Wi Qtr. 3 cl. Not open to students with credit for 861.

762 Urban Planning Data and Forecasting GRAD 5
Sources of information, data handling, forecasting, and basic studies in urban planning. Sp Qtr. 3 cl, 3 lab hrs. Not open to students with credit for 832.

763 Consequence Analysis in Urban Planning GRAD 4
Urban planning studies using cost-benefit, cost-effectiveness, systems analysis, and PPBS approaches. Au Qtr. 2 cl, 2 lab hrs.

764 City Planning Administration GRAD 4
Administration of official urban planning agencies; zoning administration; subdivision review practices; capital improvement programming; budget and work program preparation. Wi Qtr. Not open to students with credit for 862. Distance Learning Course (Web-taught).

765 Social Policy Law GRAD 4
Studies of law and social policy; topics vary. Wi Qtr. 4 cl. Not open to students with credit for 865.

766 Environmental Planning Law GRAD 4
The interaction between law and environmental planning and protection. Wi Qtr. 4 cl. Prereq: 761 or equiv with written permission of instructor. Not open to students with credit for 866.

770 Introduction to Quantitative Methods in Urban Planning UGRAD 4
Introduction of mathematical models in urban planning: descriptive statistics, probability, decision theory, and use of digital computer. Au Qtr. 3 cl. Prereq: Permission of instructor.

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771 Applications of Quantitative Methods in Urban Planning GRAD 4
Applications of statistical analysis in urban planning; hypothesis testing and parameter examination methods; computer analysis of urban planning data. Au Qtr.

774 Transportation in City and Regional Planning GRAD 4
Concepts and issues in urban transportation planning. Wi Qtr. 1-3 hr cl.

775 Urban Transportation Planning GRAD 4
Discussion and examples of urban transportation planning processes, emphasizing quick-response models of locational and travel behavior, development and evaluation of alternatives, policies, and citizen reaction and participation. Au Qtr. 3 cl, 1-3 hr lab. Prereq: CivilEn 670 or equiv with written permission of instructor or grad standing in CRPlan. Not open to students with credit for CivilEn 775. Cross-listed in Civil Engineering.

776 Topics in Urban Transportation and Planning GRAD 3
Survey of major topics in urban transportation planning, emphasizing policy concerns and analytical tools necessary to address these concerns. Wi Qtr. 1-2 hr cl. Prereq: 781 or equiv; or permission of instructor.

777 Transportation Regulation GRAD 3
Current U.S. transport regulation and tools needed to evaluate its desirability. * Sp Qtr. 1-2 cl. Prereq: 781 or equiv; or permission of instructor.

780 Workshop in Urban and Regional Planning Techniques GRAD 3-5
Techniques in the urban and regional planning process: spatial distribution and management of population and economic growth in the city and the region, stressing the applied aspects of the techniques as used in the profession. Su Qtr. Distance Learning Course (Web-taught).

781 Spatial Models in Urban Planning GRAD 4
Urban planning applications of theories of spatial equilibrium and rent theory; impacts on spatial distribution of zoning, property taxation, and intrastructural investment. Sp Qtr. 4 cl. Not open to students with credit for 880.

783 Municipal Functions in City and Regional Planning GRAD 4
This course explores infrastructure and public facilities. Students learn how planners interact with other professionals relative to public facilities. Wi Qtr.

793 Individual Studies in Urban Planning GRAD 1-5
Individual Studies in Urban Planning. Su, Au, Wi. Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

794 Group Studies in Urban Planning GRAD 1-5

815 Case Studies in Urban Planning for Housing GRAD 4
Review of empirical studies in urban planning for housing including aspects of density, spatial production, housing services, and price formation. Sp Qtr. 2 cl, 2 lab hrs. Prereq: 752 or permission of instructor.

816 Seminar in Urban Planning for Housing GRAD 3
Presentation and discussion of research related to urban planning for housing, including theoretical studies, modeling, simulation, and statistical testing. Sp Qtr. 3 cl. Prereq: 752 or permission of instructor.

821 Regional Planning Studio GRAD 5
Application of economic and environmental analysis to regional development projects. Sp Qtr. 2 cl, 3 lab hrs. Prereq: 723. Repeatable to a maximum of 10 cr hrs.

824 Planning for Sustainable Development GRAD 5
Preparation of sustainability-oriented plan with a local community; identification of challenges and opportunities, indicators, and state of practice in a detailed document. Sp Qtr. Prereq: 724 or permission of instructor. Service Learning course.

834 Decision Analysis in Urban Planning GRAD 3
Application of decision theory and analysis to case studies in urban planning. Sp Qtr. 3 cl.

835 Land Use, Environmental Quality, and Regional Analysis GRAD 4
Introduction of land use and environmental models as tools in the planning process and as techniques for improving the quality of physical development plans. ^ Sp Qtr.

837 Grant Writing for Planners GRAD 4
Provides process and skills necessary to be successful in writing grants targeted at planning projects. Wi Qtr. Cross-listed in PubPolM 880.02.
80 City and Regional Planning

851 Urban Precinct Planning GRAD 5
Preparation of detailed physical development plans for a small section of a city. Au, Wi Qtrs. 3 cl, 6 lab hrs. Prereq: 745 or 762 or permission of instructor. Service Learning course.

852 Urban Project and Policy Planning GRAD 5
Identification of options among planning policies and projects; development of analyses to aid in making choices between options in urban development. Wi Qtr. 2 cl, 9 lab hrs. Prereq: 745 or 762. Service Learning course.

853 The Urban General Plan GRAD 5
Current practice in preparation of the urban general plan; laboratory exercise in the preparation of a general plan for an urban community. Au, Sp Qtrs. 3 cl, 6 lab hrs. Prereq: 745, 762, and 781; or permission of instructor. Service Learning course.

864.01 Urban Planning Theory Seminar: History of Planning Thought
Examination of how planning thought evolved in relation to different stages of our civilization. * Sp Qtr. 2-3 hr cl. Prereq: Permission of instructor.

867 Land Use Policy GRAD 4
Law and administration in land use planning programs. ** Sp Qtr. Prereq: 761 or permission of instructor.

870.01 Research on Quantitative Methods in Urban Planning: Static Optimization in Planning GRAD 5
Workshop application of mathematical programming techniques to solve an urban or regional planning problem. * Au Qtr. 2-3 hr cl, arr.

870.02 Research on Quantitative Methods in Urban Planning: Dynamic Optimization in Planning GRAD 5
Workshop application provides advanced graduate students with a sound foundation on a set of quantitative planning techniques in a dynamic context. * Wi Qtr. 2-3 hr cl.

870.03 Research on Quantitative Methods in Urban Planning: Forecasting and Simulation in Planning GRAD 5
Overview of advanced methods in forecasting and simulation and application to urban and regional planning. * Sp Qtr. 2-3 hr cl. Prereq: 770, 762 and 771; or permission of instructor. Not open to students with credit for 707.

871.01 Research Seminar in Environmental Planning: Environmental Planning
Processes and concepts for the design planning and management of the natural and built environment. Prereq: Permission of instructor. Not open to students with credit for 871. Repeatable to a maximum of 15 cr hrs.

871.02 Research Seminar in Environmental Planning: Development Planning
Research problems associated with urban and regional development including economic development, planning in developing countries, and related issues; topics vary. Prereq: Permission of instructor. Not open to students with credit for 871. Repeatable to a maximum of 15 cr hrs.

871.03 Research Seminar in Environmental Planning: Regional Science
Development of theoretical and methodological issues in regional science as they pertain to urban and regional planning. Prereq: Permission of instructor. Not open to students with credit for 871. Repeatable to a maximum of 15 cr hrs.

871.04 Research Seminar in Environmental Planning: Planning Processes
Institutional factors which affect the field of planning; topics vary. Prereq: Permission of instructor. Not open to students with credit for 871. Repeatable to a maximum of 15 cr hrs.

871.05 Research Seminar in Environmental Planning: Mathematical Planning
Developemental topics in mathematical planning, and its applications to selected planning problems. Prereq: Permission of instructor. Not open to students with credit for 871. Repeatable to a maximum of 15 cr hrs.

871.06 Research Seminar in Environmental Planning: Energy Planning
Developemental topics in energy planning and its application to selected energy problems. Prereq: Permission of instructor. Not open to students with credit for 871. Repeatable to a maximum of 15 cr hrs.

871.07 Research Seminar in Environmental Planning: Transportation Planning
Survey of current literature, structured around a general theme which varies. Prereq: Permission of instructor. Not open to students with credit for 871. Repeatable to a maximum of 15 cr hrs.

871.08 Research Seminar in Environmental Planning: Public Services Planning
In-depth review of selected recent literature in the field; focus varies. Prereq: Permission of instructor. Not open to students with credit for 871. Repeatable to a maximum of 15 cr hrs.

871.09 Research Seminar in Environmental Planning: Environment-Behavior/Urban Design
Research on empirical aesthetics; seminal works, theories, and empirical findings. Su, Au, Wi, Sp Qtrs. 4 hr cl. Prereq: Permission of instructor. Not open to students with credit for 301 and 302. Repeatable to a maximum of 15 cr hrs.

879 Seminar in Planning Research GRAD 1-5
Topics to be announced each quarter. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

880 Project Management in the Public Sector GRAD 5
Project management provides skills on how to manage complex projects in the public sector. Su, Sp Qtrs. Cross-listed in pubpolM 880.05.

881 Foundations of Spatial Modelling in Planning GRAD 5
Analysis of behavioral foundations of spatial models. * Sp Qtr. 2-3 hr cl. Prereq: 781 recommended.

893 Individual Studies GRAD 1-5
Individual studies for Ph.D. students in city and regional planning. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

900 Urban Planning Practicum GRAD 1-5
Supervised field experience in urban planning: analysis and critique of field experience. Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in CRPlan. Repeatable to a maximum of 5 cr hrs.

908 Research in City and Regional Planning GRAD 1-15
Master's Thesis
Research for thesis purposes only. Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 99 cr hrs. This course is graded S/U.

999 Research in City and Regional Planning PhD GRAD 1-18
Dissertation
Research for dissertation purposes only. Su, Au, Wi, Sp Qtrs. Prereq: PhD standing. Repeatable. This course is graded S/U.

Civil Engineering

400 Introduction to Geomatics UGRD 4
An introduction to geomatics, with an emphasis on basic data collection using ground-based measurement and basic engineering mapping techniques. Au, Sp Qtrs. 3 cl, 1-3-hr lab. Prereq or concour: 405, minimum CPHR of 2.0, CivilEn major; or written permission of dept chair. Not open to students with credit for 400.01, 400.03 or GeodScIE 400 or 400.01 or 400.02. Cross-listed in GeodScIE.

405 Observational Analysis UGRD 4
Theory and application of observational analysis. Au, Sp Qtrs. 4 cl. Prereq: A minimum CPHR of 2.0; acceptance into CivilEn major or written permission of dept chairperson. GEC course.

406 Fundamentals of Civil Engineering Analysis UGRD 4
Application of numerical methods to problems in civil engineering. Wi Qtr. 4 cl. Prereq: 405; minimum CPHR of 2.0; CivilEn major or written permission of dept chairperson. GEC course.

410 Environmental Pollution and Control UGRD 3
Environmental pollution: the causes and control of air, water, and land pollution in relation to their effects on health, aesthetics, economics, and ecology. Au Qtr. 3 cl. Prereq: Chem 101 or equiv with written permission of instructor. Not open to engineering majors or students with credit for 721.

413 Fluid Mechanics UGRD 4
Fluid properties; fluid statics; flow concepts; continuity, energy, and momentum equations; dimensional analysis and dynamic similarity; visous effects; drag; basic pipe flow; lab demonstrations and experiments. Au Qtr. 3 cl, 1-2 hr lab. Prereq: MechEng 430 and CivilEn 405 or FABEng major; minimum CPHR of 2.0; or written permission of dept chairperson. Not open to students with credit for EnvEng 413. Cross-listed in Environmental Engineering.

431 Structural Engineering Principles UGRD 3
Structural forms, analysis of statically determinate structures, approximate analysis of indeterminate structures, and moving loads. Au, Wi Qtrs. 3 cl. Prereq: EngMech 440 or MechEng 420 or 440; prereq or concour: CivilEn 405; minimum CPHR of 2.0, and standing as a CivilEn major or written permission of dept chairperson.
451 Civil Engineering Materials UGRD 4
Composition and structure of civil engineering materials; elastic, plastic, and viscous behavior under various environmental and loading conditions.
Au Qtr. 3 cl, 1 3-hr lab. Prereq or conc: 405, EngMech 420 or 440; minimum CPHR of 2.00, and standing as a CivilEn major or written permission of dept chairperson.

460 Professional Aspects of Civil and Environmental Engineering UGRD 1
Topics in civil and environmental engineering ethics and practice.
Wi, Sp Qtrs. 1-2-hr lab. Prereq: CivilEn or EnvEng major; must be taken as soon as possible upon entering the major. Not open to students with credit for EnvEng 460. GE course. Cross-listed in Environmental Engineering.

489 Professional Practice UGRD 2
Actual employment in a co-op job program and the preparation of a comprehensive report based on a pre-arranged outline and a pre-assigned topic.
Su, Au, Wi, Sp Qtrs. Prereq: Admission to co-op program in CivilEn. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

510 Principles of Hydraulics UGRD 3
Fluid properties; hydrostatics; flow concepts; continuity, energy, and momentum equations and applications; flow measurements, pipe and channel flow.
Sp Qtr. 3 cl. Prereq: Math 151 and Physics 111 or 113. Not open to students with credit for 413. Majority of course will be conducted using self-paced programmed instruction manual.

516 Water Resources Engineering UGRD 4
Pipe systems, introduction to open channel flow, basic hydrology, demographic studies, water supply, and wastewater flows.
Wi Qtr. 1 cl, 1-3 hr lab. Prereq: 413 and EnGraph 200 or EnGraph 167 and CivilEn or EnvEng major. Not open to students with credit for EnvEng 516. Cross-listed in Environmental Engineering.

520 Design of Treatment Facilities UGRD 4
Selection and design of processes for the purification of natural and used waters.
Sp Qtr. 4 cl. Prereq: Chem 122 or 125; 413 or EnvEng 413 or EnvEng Minor or ChemEng Major or permission of instructor; and Minimum CPHR of 2.0. Not open to students with credit for EnvEng 520. Cross-listed in Environmental Engineering.

531 Structural Analysis UGRD 4
Deflections in trusses, beams, and frames; solution of indeterminate structures by methods of consistent deformations, and moment distribution.
Au Qtr. 4 cl. Prereq: 431.

532 Structural Steel Design UGRD 4
Design of steel beams, columns, tension members, beams-columns, connections, and plate-girders.
Au Qtr. 4 cl. Prereq: 431.

534 Behavior of Structural Elements UGRD 4
Mechanics of beams, shear center; asymmetrical bending, columns, plastic bending, limit loads, properties of structural metals, and proportioning beams for flexure.
Sp Qtr. 4 cl. Prereq: 431.

535 Basic Reinforced Concrete Design UGRD 5
Analysis and proportioning of reinforced concrete structures.
Wi, Sp Qtrs. 5 cl. Prereq: 431.

540 Civil and Environmental Engineering Systems UGRD 4
Basic concepts and methods of systems engineering and applications to civil engineering problems in transportation and water resources planning, structural design, and construction management.
Au Qtr. 4 cl. Prereq: 405. Not open to students with EnvEng 540. Cross-listed in Environmental Engineering.

552 Construction Materials UGRD 4
Composition, properties, and production of Portland cement concrete, bituminous materials, and bituminous mixtures.
* Sp Qtr. 3 cl, 1 3-hr lab. Prereq: 451.

554 Geotechnical Engineering UGRD 4
Properties of natural soil deposits and subsoil exploration; engineering solutions to problems of slope stability, foundation settlement, and earth pressure.
Sp Qtr. 4 cl. Prereq: EngMech 440 or MechEn 420 or 440; prerequisite or conc: CivilEn 405; or standing as agricultural engineering major, or written permission of dept chairperson.

570 Transportation Engineering and Analysis UGRD 4
Introduction to topics in transportation engineering and analysis; geometric design, traffic flow, freeway capacity, traffic signals, demand-performance-equilibrium, pricing, and design under uncertainty.
Wi Qtr. 4 cl. Prereq: MechEng 430 or EngMech 430; prerequisite or conc: 405; minimum CPHR of 2.00, and standing as CivilEn major; or written permission of dept chairperson.

576 Civil and Environmental Engineering Economics and Planning UGRD 4
Engineering economics and theories of planning applied to private and public civil works.
Wi Qtr. 4 cl. Prereq or conc: 405. Not open to students with credit for EnvEng 576. Cross-listed in Environmental Engineering.

590.01 Special Topics: Steel Bridge Building Development UGRD 2
Studies in analysis, design, test, fabrication, and construction, and standing in engineering or written permission of instructor. Repeatable to a maximum of 8 cr hrs.

590.02 Special Topics: Timber Bridge Building Development UGRD 2
Studies in analysis, design, test, fabrication, and construction.
Prereq: Jr standing in engineering or written permission of instructor. Repeatable to a maximum of 8 cr hrs.

590.03 Special Topics: Concrete Canoe Development UGRD 2
Studies in analysis, design, test, and construction.
Prereq: Jr standing in engineering or written permission of instructor. Repeatable to a maximum of 8 cr hrs.

601 Introduction to Mapping and Photogrammetry GRAD 5
Introduction to mapping and photogrammetry; modern methods and instrumentation; basic analytical procedures.
Au Qtr. 4 cl. 1-3-hr lab. Prereq: Math 153 and Physics 131; or permission of department chair.

603 Remote Sensing of Environment UGRD 4
The energies of the natural and cultural environment; current remote sensing systems and case histories of applications in measuring the environment.
Wi Qtr. 1 cl, 3 hr lab. Prereq: 405 or Survey 450 or equiv with written permission of instructor. Not open to students with credit for GeodSci 603. Cross-listed in GeodSci.

604 Terrain Analysis UGRD 4
Principles and applications of photo pattern analysis, geologic and geomorphologic patterns, terrain studies, and land use suitability and capability mapping.
Au Qtr. 1 cl, 3 hr lab. Prereq: 405 or Survey 450 or equiv with written permission of instructor. Not open to students with credit for GeodSci 604. Cross-listed in GeodSci.

606 Quantitative Remote Sensing UGRD 4
An introduction to computer processing of digital image data from Landsat satellites; emphasis on concepts, techniques, and statistics important to numerical analysis.
Wi Qtr. 3 cl, 1 2-hr lab. Prereq: 405 or equiv; 603 or 604 or 605, and EnGraph 200 or 167 or equiv.

607 Fundamentals of Geographic Information Systems UGRD 5
Basic principles of geographic and land information systems and their use in spatial analysis and information management.
Au Qtr. 3 cl, 1 3-hr lab. Prereq: Sr standing. Not open to students with credit for Geog 685; or 607 in CRPlan, GeodSci, Geog, GeodSci, or NatRes. Cross-listed in City and Regional Planning, Geodetic Science, Geography, Geophysical Sciences, and Natural Resources.

608 Spatial Analysis Techniques in Civil Engineering UGRD 4
Principles of spatial analysis techniques for application to civil engineering, particularly in the water resources and geotechnical areas.
* Sp Qtr. 3 cl, 1 lab. Prereq: 405; 607; or equiv with written permission of instructor. Even years.

609 Surveying with Satellites UGRD 4
Surveying with Earth artificial satellites, global positioning system, relative positioning using interferometric techniques, kinematic surveying.
Wi Qtr. 2 cl, 1 3-hr lab. Prereq: 601, and GeodSci 450 or GeodSciM 650. Not open to students with credit for Survey 609.

613 Applied Hydrology UGRD 4
Hydrologic cycle, meteorology, streamflow, evapotranspiration, hydrographs, runoff relations, runoff hydrographs, groundwater, unit hydrographs, flood routing, frequency and duration studies, and application of hydrologic techniques.
Au Qtr. 4 cl. Prereq: 510 or 516 or EnvEng 516. Not open to students with credit for EnvEng 613. Cross-listed in Environmental Engineering.

624 Coastal and Ocean Engineering UGRD 4
Linear and nonlinear waves, water level and wave forecasting spectra, forces on fixed structures, beach processes, littoral drift, and transport; shoreline protection.
Wi Qtr. 4 cl. Prereq: 516 or EnvEng 516. Not open to students with credit for EnvEng 624. Cross-listed in Environmental Engineering.

625 Cadastral Information Systems UGRD 4
Land tenure, evolution of the cadastral and its relation to land rights; principles and applications.
Sp Qtr. 3 cl, 1 3-hr lab. Prereq: GeodSci 450. Not open to students with credit for Survey 625.

628 Analytical Photogrammetry I GRAD 4
Analytical photogrammetry and mathematical models; measurement and reduction of image coordinates; bundle adjustment; analytical camera calibration; aerotriangulation; analytical plotters.
Wi Qtr. 1 cl, 3 hr lab. Prereq: GeodSci 650 or permission of instructor. Not open to students with credit for 623.

629 Digital Photogrammetry II UGRD 4
Introduction to digital photogrammetry; digital image processing for photogrammetry; computer vision; human visual system; data acquisition, hardware and software.
Sp Qtr. 3 cl. Prereq: GeodSci 450. Not open to students with credit for 728.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Prerequisites</th>
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<tbody>
<tr>
<td>630</td>
<td>Fundamentals of Computer-Assisted Cartography</td>
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<tr>
<td>632</td>
<td>Large Scale and Topographic Mapping</td>
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<tr>
<td>634</td>
<td>Digital Mapping Systems</td>
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<td>640</td>
<td>Civil and Environmental Systems Engineering</td>
<td>4</td>
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<td>651</td>
<td>Soil Mechanics</td>
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<td>660.01</td>
<td>Civil Engineering Capstone Design I</td>
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<tr>
<td>660.02</td>
<td>Civil Engineering Capstone Design II</td>
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<tr>
<td>662</td>
<td>Introduction to Mechanics of Composite Structures</td>
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<td>670</td>
<td>Urban Public Transportation</td>
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<td>672</td>
<td>Traffic Engineering Studies</td>
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<td>673</td>
<td>Highway Location and Design</td>
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<td>675</td>
<td>Instrumentation, Signals, and Control in Transportation Applications</td>
<td>3</td>
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<td>681</td>
<td>Construction Methods, Equipment and Performance</td>
<td>4</td>
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<tr>
<td>682</td>
<td>Introduction to Construction: Buildings and Bridges</td>
<td>4</td>
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<td>683</td>
<td>Construction Safety: Avoiding Failures and Accidents</td>
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<td>684</td>
<td>Construction Network Analysis</td>
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<td>685</td>
<td>Deterministic Construction Estimating and Pricing</td>
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<td>Construction Contracts and Claims</td>
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<td>Construction Forensics</td>
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<td>693</td>
<td>Individual Studies</td>
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<tr>
<td>694.01</td>
<td>Group Studies: Structural Engineering</td>
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<td>694.02</td>
<td>Group Studies: Geotechnical Engineering</td>
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<td>694.04</td>
<td>Group Studies: Highway and Transportation Engineering</td>
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<td>694.06</td>
<td>Group Studies: Construction</td>
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<td>694.07</td>
<td>Group Studies: Materials</td>
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<tr>
<td>698.01</td>
<td>Study Tour: Domestic</td>
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<td>698.02</td>
<td>Study Tour: Foreign</td>
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</table>

Note: Prerequisites and details for each course are provided in the table. Courses marked with ^ are cross-listed in Electrical Engineering.
Civil Engineering 83

768 Introduction to the Finite Element Method UGRD 4
Basic concepts, formulation, and application of finite element techniques for numerical solution of problems in structural and continuum mechanics, geotechnical engineering, and water resources engineering.

774 Design and Operation of Road Traffic Facilities UGRD 5
Traffic laws and ordinances; operational design of streets, intersections, parking, and terminal facilities; design and operation of traffic control devices.

777 Infrastructure Systems Analysis UGRD 4
A systems approach to infrastructure provision and management. Covers data collection, performance assessment and prediction, inspection and maintenance decision making, and provision standards setting.

780 Seminar in Civil Engineering UGRD 1
Lectures and discussions of current topics related to civil engineering presented by faculty, students, and guest speakers; term paper required.

804 Water Resources Engineering Applications of Remote Sensing GRAD 5
Principles and techniques of remote sensing for acquisition of data in water resources engineering projects and water quality investigations.

806 Radiometric Measurements and Modeling GRAD 5
Theory and models used in remote sensor measurements of spectral radiation.

808 Integrating Remote Sensing with Engineering GRAD 5
Databases
Techniques and approaches for integrating digital data sources with engineering spatial databases.

810 Physical Chemical Treatment Processes I GRAD 4
Principles and design of physical and chemical processes for water and wastewater treatment including mixing, disinfection, nutrient removal, and oxidation-reduction.

812 Physical Chemical Treatment Processes II GRAD 4
Principles of physical/chemical treatment processes for water and wastewater, including coagulation, softening, adsorption, filtration, and membrane processes.
<table>
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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>813</td>
<td>Hazardous Waste Site Remediation</td>
<td>GRAD 4</td>
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<tr>
<td>814</td>
<td>Industrial Wastewater Treatment</td>
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<td>816</td>
<td>Environmental Systems Analysis</td>
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<td>817</td>
<td>Applied Mathematical Ecology</td>
<td>GRAD 5</td>
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<tr>
<td>818</td>
<td>Application of Biotechnology to Environmental Engineering</td>
<td>GRAD 5</td>
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<tr>
<td>819</td>
<td>Colloidal Processes in Aquatic Systems</td>
<td>GRAD 4</td>
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<tr>
<td>820</td>
<td>Advanced Hydrology</td>
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<td>821</td>
<td>Sediment Transport and Engineering</td>
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<td>822</td>
<td>Adsorption of Pollutants in Environmental Systems</td>
<td>GRAD 4</td>
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<td>823</td>
<td>Numerical Models in Water Resources Engineering</td>
<td>GRAD 5</td>
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<tr>
<td>824</td>
<td>Advanced Coastal Engineering</td>
<td>GRAD 4</td>
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<tr>
<td>825</td>
<td>Advanced Photogrammetric Applications</td>
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<td>826</td>
<td>Advanced Digital Image Acquisition in Photogrammetry</td>
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<td>830</td>
<td>Earthquake Engineering</td>
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<td>831</td>
<td>Advanced Reinforced Concrete</td>
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<tr>
<td>832</td>
<td>Advanced Behavior and Design of Metal Structures</td>
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<tr>
<td>833</td>
<td>Finite Element Method in Engineering Science</td>
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<td>834</td>
<td>Soil-Structure Interaction</td>
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<td>835</td>
<td>Soil Dynamics</td>
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<tr>
<td>836</td>
<td>Probabilistic Construction Estimating and Pricing</td>
<td>GRAD 5</td>
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</table>
885 Advanced Civil Engineering GRAD 3-5
Opportunity for advanced students to pursue advanced study; work undertaken may be elected in the fields of civil engineering listed below.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept chairperson. Repeatable to a maximum of 20 cr hrs. No more than 10 credit hrs in any one of the fields listed below.

888 Event Tree, Fault Tree, and Fuzzy Systems in Construction GRAD 5
Event tree and fault tree analyses; fuzzy set/logic concepts; fuzzy expert systems; fuzzy fault tree expert systems in construction.

894 Group Studies in Civil Engineering GRAD 3-5
Advanced topics in the various fields of civil engineering; the particular topics, the number of credit hours, and the instructor will be announced in the quarter prior to the one in which the course is offered.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs. No more than 10 cr hrs in any one field of civil engineering.

899 Interdepartmental Seminar GRAD 1-5
Two or more departments may collaborate in presenting seminars on subjects of mutual interest; topics to be announced.

990 Civil Engineering Practicum GRAD 1-5
Supervised field experience in civil engineering; analysis and critique of field experience.
Su, Au, Wi, Sp Qtrs. Prior approval of Civil Engr grad committee required.

993 Advanced Problems in Civil Engineering GRAD 3-5
Provides the opportunity to pursue special problems in Civil Engineering not otherwise covered.
Report required.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.
This course is graded S/U.

999 Research in Civil Engineering GRAD 1-18
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

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Classics

101 Ancient Greek Literature in Translation UGRD 5
Introductory survey of the Greek achievement in literature and its contribution to Western thought; selected readings in English translation in major authors from Homer through the Hellenistic age. 101H (honors) may be available.
Au, Wi, Sp Qtrs. 5 cl. Not open to students with credit for 220. GEC arts and hums lit and social diversity - international issues (Western) course.

101H Ancient Greek Literature in Translation UGRD 5
Introductory survey of the Greek achievement in literature and its contribution to Western thought; selected readings in English translation in major authors from Homer through the Hellenistic age.
Au, Wi, Sp Qtrs. 5 cl. Prereq: Honors program or permission of department or instructor. Not open to students with credit for 220. GEC arts and hums lit course.

102 Roman Literature in Translation UGRD 5
Introductory survey of Roman literature and its importance in the Western literary tradition; selected readings in English translation in major authors, such as Plautus, Vergil, and Ovid.
Au, Wi, Sp Qtrs. 5 cl. Not open to students with credit for 221. GEC arts and hums lit and social diversity - international issues (Western) course. 102E may be available on regional campuses for Honors embedded experience.

102E Roman Literature in Translation UGRD 5
Introductory survey of Roman literature and its importance in the Western literary tradition; selected readings in English translation in major authors, such as Plautus, Vergil, and Ovid.
Au, Wi, Sp Qtrs. 5 cl. Prereq: Honors program or permission of department or instructor. Not open to students with credit for 221. GEC arts and hums lit course. Honors embedded experience at the regional campuses.

210 Classical Background of Scientific Terminology UGRD 3
Study of technical and scientific terms from Greek and Latin sources; roots, word elements, word formation, analysis; helpful in medical, biological, and kindred studies.
Au, Wi, Sp Qtrs.

222 Classical Mythology UGRD 5
Origins and attributes of the Greek and Roman gods and goddesses, their mythology and its influence on Western culture. 222H (honors) may be available.
Au, Wi, Sp Qtrs. 5 cl. Not open to students with credit for 122H. GEC arts and hums lit and social diversity - international issues (Western) course.

222H Classical Mythology UGRD 5
Origins and attributes of the Greek and Roman gods and goddesses, their mythology and its influence on Western culture.
Au, Wi, Sp Qtrs. 5 cl. Prereq: Honors program or permission of department or instructor. Not open to students with credit for 122H. GEC arts and hums lit and social diversity - international issues (Western) course.

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Civil Engineering 85

223H Freshman/Sophomore Honors Seminar: Topics in Ancient Literature and Society UGRD 5
A discussion-oriented exposure to some of the most renowned works of ancient literature and/or ancient cultural issues.
Au, Wi, Sp Qtrs. 2-2 hr cl. Prereq: Admission to the honors program.

224 Classical Civilization: Greece UGRD 5
A survey of ancient Greek civilization, concentrating upon important facets of literature, history, art, and archaeology.
Sp Qtrs. 5 cl. Not open to students with credit for 124H. GEC arts and hums cultures and ideas and social diversity - international issues (Western) course.

225 Classical Civilization: Rome UGRD 5
A survey of the civilization of ancient Rome, concentrating upon important facets of literature, history, art, and archaeology.
Au Qtr. 5 cl. Not open to students with credit for 125H. GEC arts and hums cultures and ideas and social diversity - international issues (Western) course.

226 Byzantine Civilization: Constantinople and the Empire of New Rome UGRD 5
A survey of Byzantine civilization, focusing on life in the capital, literature, and the court, Orthodox Christianity, and the formation of Medieval Europe.
5 cl. Not open to students with credit for Medieval 226. Cross-listed in Medieval and Renaissance Studies. GEC arts and hums cultures and ideas and social diversity - international issues (Western) course.

230 Medicine in the Ancient World UGRD 5
An introduction to the theory and practice of medicine in ancient Greece and Rome. GEC arts and hums cultures and ideas and social diversity - international issues (Western) course.

240 Classical Archaeology UGRD 5
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.
5 cl. Not open to students with credit for History 240 or 306, or HistArt 240. Cross-listed in History as 306 and in HistArt as 240. GEC arts and hums cultures and ideas and social diversity - international issues (Western) course.

250 Sports and Spectacles in the Ancient World UGRD 5
The history and social role of gymnastic and athletic competition in Greece and Rome. The evolution of their modern revivals.
5 cl. GEC arts and hums cultures and ideas course.

294 Group Studies UGRD 1-5
Topics in classical studies. 294H (honors) may be available.
Prereq: Permission of instructor. Repeatable to a maximum of 15 hr hrs.

301 Greek and Roman Epic UGRD 5
Study of Greek and Roman epic based on extensive readings in English translation of works by authors such as Homer, Apollonius, Vergil and Ovid.
Au Qtr. 5 cl. Not open to students with credit for 503.

302 Greek and Roman Drama UGRD 5
Study of Greek and Roman drama based on extensive readings in English translation of the plays of such authors as Sophocles, Euripides, and Plautus.
Wi Qtr. 5 cl. Not open to students with credit for 501.

303 Comic Spirit in Antiquity UGRD 5
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.
5 cl. Not open to students with credit for 502.

310 Topics in Ancient Literature and Culture UGRD 5
In depth analysis of selected topics in ancient literature and culture. Varies. Repeatable to a maximum of 10 cr hrs.

322 The Hero in Classical Mythology UGRD 5
The development and interpretation of the major cycles of classical saga based on extensive readings in Greek and Roman epic and drama.
5 cl.

323 Ancient Greek Religion UGRD 5
Study of ancient Greek religions, including the beginnings of Christianity.
Au Qtr. GEC historical survey course.

324 Magic in the Ancient World UGRD 5
An introduction to the practice of magic in the ancient Mediterranean and how people viewed it.

325 Christians in the Greco-Roman World UGRD 5
The origins and development of Christianity in its historical, social, and cultural context.

326 Christian Heroes: Byzantine Saints’ Lives UGRD 5
Study of popular Medieval narrative genre in its cultural context; development of the ideal of sanctity in the lives of martyrs, holy fools, and ascetics.
Wi Qtr.

327 Ancient Gods Changing Identities UGRD 5
Study of how the ancient Greek gods were represented in art of literature of their own and later historical periods.
Sp Qtrs. 2-2 hr cl. GEC arts and hums lit course.
86  Classics

505  Political Thought and Institutions in the Greco-Roman World  UGRD  5
Selected topics concerning the development of ancient political theory.
* 2 2-hr cl.

506  Greek and Roman Science and Technology  UGRD  5
The origins and achievements of Greek and Roman science and technology.
* 5 cl.

508  Gender and Sexuality in Antiquity  UGRD  5
Constructions of gender and sexuality in Greece and Rome.
Sp Qtr. 5 cl.

597  Nationalism Revisited  UGRD  5
Aims at rethinking nationalism by questioning perceived notions of the nation, identity, ethnicity, culture, citizenship and globalization.
Au, Wi, Sp Qtrs. Prereq: Jr or sr standing. GEC contemporary world course.

607  Roman Law through the Reign of Justinian  UGRD  5
Studies in the origins and development of Roman Law based on original sources in translation.
* 5 cl. Not open to students with credit for Law L720. Cross-listed in Law as L720.

611  Studies in Greek or Latin Epigraphy  UGRD  5
Studies in Greek or Latin Epigraphy.
* 2 2-hr cl. Prereq: Permission of instructor. Not open to students with credit for 811. Repeatable to a maximum of 10 cr hrs.

656  Studies in Greek or Roman Topography  UGRD  5
The topography and archaeology of ancient Athens, Rome, or other sites important to Greco-Roman literature and civilization.
* 2 2-hr cl. Not open to students with credit for 856.

692  Workshop  UGRD  1-6
Workshop.
Su Qtr. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

694  Group Studies  UGRD  1-5
Investigation of particular problems in various areas of classical studies.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

697  Study at a Foreign Institution  UGRD  1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This course is Progress (P) graded. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

698.01  Study Tour: Domestic  UGRD  1-15
Specific content, location, quarter(s) of offering, and prerequisites vary: contact department for details.
Prereq: Permission of instructor.

698.02  Study Tour: Foreign  UGRD  1-15
Specific content, location, quarter(s) of offering, and prerequisites vary: contact department for details.
Prereq: Permission of instructor.

699  Senior Tutorial and Essay  UGRD  5
Individual work leading to the writing of a final paper that will integrate the experience of earlier courses in classics.
Su, Au, Wi, Sp Qtrs. Open only to srs majoring in Classics.

712  Studies in Greek or Latin Paleography and Textual Criticism  GRAD  5
An introduction to the skills of paleography and textual criticism.
2 2-hr cl. Prereq: Latin 625 or Medieval 664 or permission of instructor. Not open to students with credit for 812.

783H  Honors Research  UGRD  3-5
A program of study arranged for each student, with individual conferences, reports, and an honors thesis.
Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the classics 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. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

792  Interdepartmental Studies in the Humanities  UGRD  3-5
Two or more departments present colloquia on subjects of mutual interest.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs. With permission of dept.

800  Materials and Methods of Research  GRAD  3
The materials, problems, and methods of classical research.
3 cl. Required of all grad students.

810  Linguistic Studies in Greek and Latin  GRAD  5
Topics may include Greek dialects, Italic dialects, or comparative grammar of Greek and Latin.
* 2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

870  Studies in Greek and Roman Religion and Myth  GRAD  5
Focuses on single issues within ancient religion and myth, as chosen by instructor.
Au, Wi, Sp Qtrs. 1 3-hr cl. Prereq: Reading knowledge of Greek and/or Latin preferred; special arrangements can be made for exceptional students without reading knowledge. Repeatable to a maximum of 10 cr hrs.

880  Topics in Classical Antiquity  GRAD  5
In-depth examination of issues that are often difficult to address in courses that focus on a single ancient author.
Au, Wi, Sp Qtrs. 1 3-hr cl. Repeatable to a maximum of 15 cr hrs.

890  Topics in Late Antiquity and Byzantium  GRAD  5
Focuses on topics in post-classical Greek and Roman culture and literature.
Su, Au, Wi, Sp Qtrs. 1 3-hr cl or 2 2-hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

899  Interdepartmental Seminar  GRAD  3-5
Two or more departments present seminars on subjects of mutual interest; topics to be announced.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor(s). Repeatable to a maximum of 15 cr hrs. with permission of dept.

Communication

101  History of Human Communication  UGRD  5
History of human communication from beginning of spoken and written communication to modern mediated and mass communication.
Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Not open to students with credit for JCom 101. GEC soc sci, individuals and groups course.

105  Communication of Ideas and Attitudes  UGRD  5
Analysis, formulation, organization, development, and delivery of ideas and attitudes for speaking with an audience.
5 cl. Not open to students with credit for JCom 105. VPA Admins Cond course.

200  Communication in Society  UGRD  5
Role of communication in society; forms, strategies, theories and issues; interpersonal, group, organizations, public and mass communication.
Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Not open to students with credit for JCom 200. GEC soc sci individuals and groups course.

221  Writing for Media  UGRD  5
Introduction to, and instruction and practice in newswriting, reporting, and editing for the news media taught in a laboratory setting.
Prereq: 101, 200 or JCom 101, 200, and major in Journal, or Comm (Strat Comm), or AgrComm or Media Prod minor. Not open to students with credit for JCom 221.

240  Introduction to Communication Technology  UGRD  5
Processes of communication technology, critical consumption, ethical issues, current problems of the markets, technologies and policies of online communication, the world wide web, and media.
2 2-hr cl. Not open to students with credit for JCom 240.

310  News Design  UGRD  5
Provides a basic overview of various forms of visual communication with an emphasis on print media. Explores design principles, perception, critical evaluation, ethics and creativity as they relate to visual media.
2 2-hr cl. Prereq: Journal or Comm major.

311  Visual Communication Design  UGRD  5
The examination of visual symbols, graphics, photographs, art, movies and video, and their impact on society.
2 cl, 2 2-hr labs. Prereq: 221 or 367 or JCom 221 or 367, and Journal or Comm major. Not open to students with credit for JCom 311.

320  Introduction to Interpersonal Communication  UGRD  5
Analysis of the role of interpersonal communication to begin relationships, achieve intimacy, sustain a certain relational status and terminate relationships.
2 2-hr cl. Not open for students with credit for JCom 320.

321  Principles of Effective Public Speaking  UGRD  5
Introductory 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.
1 2-hr rec. Not open to students with credit for JCom 321.

322  Strategic Communication Practices  UGRD  5
Designed to aid students in communicating in a business environment.
2 2-hr cl. Prereq: Journal or Comm major.

325  Introduction to Organizational Communication  UGRD  5
Communication plays a vital role in the success and failure of organizations. Addresses prior and current approaches to the study of organizational communication.
2 2-hr cl.

331  Business and Professional Speaking  UGRD  5
The purpose of this course is to train students in interpersonal and public speaking in business and professional contexts.
341 Policy Issues in Communication Technology  UGRD  5
Theoretic basis for understanding telecommunication and electronic media, mechanisms for the formulation and implementation of policy; social impact of media systems.
2-2 hr. cl. Prereq: Journal or Comm major. Not open to students with credit for JCom 341.

367 Persuasive Communication  UGRD  5
Principles of persuasion as reasoned discourse. 367H (honors) may be available.
Su, Au, Wi, Sp Qtrs. 2-2 hr. cl. Prereq: English 110, 110.01, 110.02, 110.03 or equiv, and soph standing or above. Not open to students with credit for JCom 367. GEC second writing course.

368 Intercultural Communication in Organizational Contexts  UGRD  5
An examination of the role of intercultural communication in organizational contexts and the attendant effects on the creation and transmission of cultural consciousness, knowledge, tradition, and practices.
2-2 hr. cl. Not open to students with credit for JCom 368.

420.01 Journalism Workshop: Lantern Gateway Workshop
Introduction to the basic principles and skills involved in operating as part of a news-gathering team.
Open to all majors and class ranks; no prerequisites. This course is graded S/U.

420.02 Journalism Workshop: Internet Journalism: A Survival Guide
Introduction to writing techniques used by online journalists.
Open to all majors and class ranks; no prerequisites. This course is graded S/U.

420.03 Journalism Workshop: Previews and Reviews Workshop
Introduction to the two basic journalistic forms associated with writing about cultural and entertainment events.
Open to all majors and class ranks; no prerequisites. This course is graded S/U.

421 Reporting and Writing Across News Platforms  UGRD  5
Designed to help students develop the fundamentals of news writing and reporting.
2-2 hr. cl. Prereq: Journal or Comm or AgriComm major or permission of instructor. Not open to students with credit for 421.01 or JCom 421.01.

422 News Media Presentation  UGRD  5
The goal of 422 is to help students become better writers, editors and visual communicators.
Prereq: 421 and Journal or Comm or AgriComm major or permission of instructor.

423 Lantern Practicum  UGRD  5
Gives students an opportunity to learn journalism by practicing it as members of the staff of the Lantern student daily newspaper and Web news site.
1-2 hr. cl. Prereq: Journal or Comm major or permission of instructor. Repeatable to a maximum of 10 cr. hrs.

424 Civic Journalism  UGRD  5
Examines the role of traditional practices of journalism in contributing to citizen apathy and disengagement, as well as what can be done to enhance citizen understanding, learning and active participation in democratic society.
2-2 hr. cl. Prereq: Journal or Comm major, grad standing or permission of instructor.

425 Media Management  UGRD  5
Introduction to media management and focuses on how issues of management apply across various media.
2-2 hr. cl.

426 Multimedia Journalism  UGRD  5
Overview of multimedia journalism, including relevant theories and practices, and hands-on instruction and experience creating an original news-oriented web site.

431 Strategic Communication Principles  UGRD  5
The role of strategic communications in business, including basic principles of integrated marketing, theory, and ethical standards.
2-2 hr. cl. Not open to students with credit for JCom 431. GEC soc sci individuals and groups course.

435 Nonverbal Communication  UGRD  5
Introduction to nonverbal communication, including discussion of its functions and applications in professional settings.

442 Media Violence  UGRD  5
Course examines the theoretical and empirical connections between media violence and society violence, including a discussion of approaches to controlling violence and mitigating effects.

449 Foundations of Survey Research  UGRD  5
This course introduces students to the principles, techniques and problems involved in conducting survey research.
2-2 hr. cl. Not open to students with credit for PolitiSc 449. Cross-listed with PolitiSc 449.

450 Principles of Human-Computer Interaction  UGRD  5
Introduces students to principles of HCI that are drawn from social, psychological and behavioral research and that helps designers create user-centered, interactive technologies.
Prereq: 240; Journal or Comm Major.

460 Communication Research Methods  UGRD  5
Overview of major empirical methods in media research. 460H (honors) may be available.
Prereq: Journal or Comm or AgriComm major; or Media Prod minor; Stat 135 or Stat 145 or permission of instructor. Not open to students with credit for 460 or 660.

460H Honors Communication Research Methods  UGRD  5
Honors introduction to methods of research in the scientific study of communication. Includes opportunities for active engagement in faculty research laboratories and programs.
Prereq: Honors standing or permission of instructor.

463 Communication Industry Research Methods  UGRD  5
Overview of major empirical methods in communication industry research.
Au, Wi Qtrs. Prereq: Comm or Journal major; or Media Prod minor; Stat 135 or Stat 145, or permission of instructor. Not open to students with credit for 460 or 663.

494 Group Studies  UGRD  1-5
Regular class meetings and group discussion of specified problems.
Prereq: Soph standing or above. Repeatable to a maximum of 20 cr. hrs.

500 Quantitative Reasoning for Journalism and Communication  UGRD  5
Development of skills for analyzing, evaluating, and reporting news stories with quantitative content.
2-2 hr. cl. Prereq: Journal or Comm major, or permission of instructor; Stat 135 or Stat 145. Not open to students with credit for JCom 500.

501 Mass Communication and Youth  UGRD  5
Introduction to theories and research on the uses and effects of media on children and adolescents, including discussion of interventions.
2-2 hr. cl. Not open to students with credit for JCom 501.

502 Crime and the News Media  UGRD  5
Study of the nature of news coverage of crime and criminal justice system, and the implications for individuals, social groups, and society.
2-2 hr. cl.

512 Communication, Images, and Action  UGRD  5
The interplay between interpersonal communication systems and technologies from a current as well as an historical perspective.
2-2 hr. cl. Not open to students with credit for JCom 512.

513 Video Games and the Individual  UGRD  5
Provides a broad overview of the effects of video game play on the individual. Students critique the literature on this topic and design their own study to test video game effects.
2-2 hr. cl.

531 Communication and Conflict Management  UGRD  5
An overview of the communication and conflict literature with emphasis on effective conflict management. 531H (honors) may be available.
2-2 hr. cl. Not open to students with credit for JCom 531.

545 Strategic Media Planning  UGRD  5
Introduction to media planning for students interested in careers in advertising, public relations and other forms of strategic communication.
2-2 hr. cl. Prereq: 431 or JCom 431 and Journal or Comm major, or permission of instructor.

597.01 Global Issues and Communication: Media and Terrorism  UGRD  5
Focuses on the portrayal of terrorism in the media and on how terrorists use the media to influence public opinion.
Prereq: Jr, Sr standing. GEC social diversity - international issues (Global) and contemporary world course.

602 Magazine Writing  UGRD  5
Non-fiction writing for magazines, commercial and industrial; emphasis on the non-technical full length magazine article.
2-2 hr. cl. Not open to students with credit for JCom 602.

604 Media Ethics  UGRD  5
Study of ethical theories and models as they apply to media products and practices; case studies, discussion and lectures.
2-2 hr. cl. Not open to students with credit for JCom 604.

605 Explanatory Reporting  UGRD  5
Focuses on the process of creating long-form journalism that attempts to describe and explain the background, process and consequences of complex policy issues facing contemporary society.
Prereq: Journal or Comm major, grad standing or permission of instructor.

606 Development of the Mass Media in America  UGRD  5
Major currents and trends basic in the shaping of the mass media; famous personalities, foundations, and evolution of a free, responsible press. 606H (honors) may be available.
2-2 hr. cl. Prereq: Journal or Comm major, grad standing, or permission of instructor. Not open to students with credit for JCom 606.

607 Mass Communication Law  UGRD  5
Study of theory, history, and case law related to freedom of expression. 607H (honors) may be available.
2-2 hr. cl. Prereq: Journal or Comm major, grad standing, or permission of instructor. Not open to students with credit for JCom 607.
Communication

611 Effective Communication for the Web UGRD 5
Instruction in user-centered web design from a communication perspective, emphasizing clarity, user-friendliness and usability.
2 2-hr cl. Prereq: 311 or equiv. Journal or Comm major.

613 Media Entertainment UGRD 5
Explores speculation, theory, and research regarding effects and appeal of media entertainment, emphasizing emotional reactions.

614 Issues and Images in Political Communication UGRD 5
Analysis of the roles played by the mass media, public leaders, and accidental circumstances in the development of issues and images in contemporary American political communication.
2 2-hr cl. Prereq: Journal or Comm major or permission of instructor. Not open to students with credit for JCom 614.

620 Public Opinion and Communication UGRD 5
Investigation of public opinion from social, political, and psychological perspectives, and study of the role communication (including the media) plays in the process. 620H (honors) may be available.
2 2-hr cl. Prereq: Journal or Comm major or permission of instructor. Not open to students with credit for JCom 620 or PolitSc 603.

621 Enterprise Reporting in Diverse Communities UGRD 5
Instruction and practice in specified topics pertaining to public affairs, such as government, courts, politics, finance, urban affairs, science, and culture.
2 2-hr cl, arr off-campus field experiences. Prereq: 421, 422, and Journal or AgrComm major or grad standing; or permission of instructor. Not open to students with credit for JCom 621. Repeatable to a maximum of 15 or hrs.

624 Communication in Personal Relationships UGRD 5
Advanced level survey of theory and research concerning the role of communication in the development, maintenance, and decay of interpersonal relationships.
2 2-hr cl. Prereq: Journal or Comm major, grad standing, or permission of instructor. Not open to students with credit for JCom 624.

628 Contemporary Persuasion Theory UGRD 5
Persuasive campaigns in mass audience settings; persuasion in interpersonal contexts, including organizations, family and personal relationships.
2 2-hr cl. Prereq: Journal or Comm major, grad standing, or permission of instructor. Not open to students with credit for JCom 628.

629 Language and Social Interaction UGRD 5
Examination of perspectives on and ways to analyze language use in everyday contexts, discourse in society, implications for communication theory, practice, and competencies.
2 2-hr cl. Not open to students with credit for JCom 629. GEC third writing course.

631 Communication in Decision Making UGRD 5
Decision-making as a process; comparisons between interpersonal, bargaining-negotiation contexts, and groups and organizations; descriptive and prescriptive models of decision-making in small groups and organizations.

632 Risk Communication UGRD 5
Students will learn how to plan, implement and evaluate a risk communication effort. Message design is an integral part of this class.
2 2-hr cl. Prereq: Journal or Comm major.

634 Creative Message Design UGRD 5
Message development for marketing communication - strategic communication writing.
2 2-hr cl. Prereq: Journal or Comm major, grad standing, or permission of instructor. Not open to students with credit for JCom 634.

635 Small Group Communication UGRD 5
Examination of communication in small groups; effective small group practice. Not open to students with credit for JCom 631. Repeatable to a maximum of 10 or hrs.

636 Health Communication in Interpersonal Contexts UGRD 5
Study of communication relevant to health care in various face-to-face contexts. Not open to students with credit for JCom 636.01.

636.02 Health Communication in Mass Mediated Contexts UGRD 5
Overview of theory and research related to the role of mass media as they affect the public's health behavior.
Not open to students with credit for JCom 636.02.

637 Public Communication Campaigns UGRD 5
Application of management techniques to public relations; public relations strategy; campaign development.
2 2-hr cl. Prereq: 431, Journal or Comm major, grad standing, or permission of instructor. Not open to students with credit for JCom 637.

638 Communication and E-Health UGRD 5
Focuses on the current and future uses of technology in health communication, with an emphasis on technology in both patient-provider relationships and health campaigns.

640 Science Communication UGRD 5
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. 640H (honors) may be available. Prereq: Jr or Sr standing.

642 Mass Communication and Society UGRD 5
Analysis of basic issues affecting media performance, especially social, cultural norms, organizational and occupational variables, and the assessment of the effects of the resulting performance.
2 2-hr cl. Prereq: Comm major or permission of instructor. Not open to students with credit for JCom 642.

643 International Communication and the World Press UGRD 5
Examination of international news communication systems and selected media concepts and the role they play in political, economic, and cultural environments.
2 2-hr cl. Not open to students with credit for JCom 643.

644 Advertising and Society UGRD 5
Examination of positive and negative contributions of advertising in the American mass media system to society from political, sociological, and economic perspectives.
2 2-hr cl. Not open to students with credit for JCom 644.

645 Stereotypes in Advertising, News and Entertainment TV UGRD 5
The purpose of this course is to expose students to the existence and impact of stereotypes in various forms of television.
2 2-hr cl.

646 Media Economics UGRD 5
Familiarizes the student with the basic concepts for understanding the economic operation of media organizations and industries.
2 2-hr cl. Prereq: Journal or Comm major; or grad standing; or permission of instructor. Not open to students with credit for JCom 646.

648.01 History of American Newspaper Comic Strips UGRD 5
History of American newspaper comic strips; assessment of their role and impact. Not open to students with credit for JCom 648.01.

648.02 History of American Newspaper Political Cartoons UGRD 5
Examination of the history, purpose, form, and spirit of American newspaper political cartoons. * Not open to students with credit for JCom 648.02.

650 Evaluation and Usability Testing UGRD 5
Introduction to the scientific methods necessary to evaluate existing communication systems, diagnose shortcomings in design and persuasively suggest improvements to a variety of audiences.
2 2-hr cl, 1 2-hr lab. Prereq: 450; Journal or Comm major.

653 Political Communication and e-Democracy UGRD 5
Designed to explore political uses of the Web and their impacts on political communication processes.

654 Social Implications of Communication Technology UGRD 5
Advanced study of a current topic in telecommunication and electronic media industry structures.
2 2-hr cl. Not open to students with credit for JCom 654.

655 Computer Interfaces and Human Identity UGRD 5
Surveys anthropomorphic computer phenomena such as agents, avatars and social simulation games and examines their relation to human identities including humanness, race, and gender.
2 2-hr cl. Prereq: Journal or Comm major, grad standing or permission of instructor.

656 Information Technology and Organizational Communication UGRD 5
Focus on the role of various technologies within organizations and for work team members.

657 Understanding Communication Networks UGRD 5
Introduction to the concepts and principles that underlie contemporary telecommunication networks with the opportunity to apply these concepts to the analyses of novel systems. Prereq: 240, Journal or Comm major.

659 Communication Systems and Society UGRD 5
Advanced study of a current topic in the relationship between telecommunication and electronic media systems and society.
2 2-hr cl. Prereq: Journal or Comm major, grad standing, or permission of instructor. Not open to students with credit for JCom 659.

661 Statistical Applications in Communication GRAD 5
Fundamental principles of statistics commonly used in communication research.
Prereq: Grad standing or permission of instructor. Not open to students with credit for JCom 662.

662 Communication and Gender UGRD 5
Examination of contemporary communication theory, method, and practice relevant to women's communication.
2 2-hr cl. Not open to students with credit for JCom 662.
665 Communication and Community  UGRD  5
A critical examination of communication linkages for building and maintaining communities. Not open to students with credit for JCom 666.

666 Communication and Popular Culture  UGRD  5
Communication causes and impacts of changing technological environment where traditional differences between cultural products folk, mass, popular, low, elite, high, knowledge, journalistic, informational are disappearing. 2 2-hr cl. Not open to students with credit for JCom 666.

668 Intercultural Communication in Organizational Contexts  UGRD  5
An examination on insights provided by recent communication theories about the challenges and difficulties in organizational communication resulting when people of different cultures interact. 2 2-hr cl. Prereq: Journal or Comm major, grad standing, or permission of instructor. Not open to students with credit for JCom 668.

669 Communication, Power, and Knowledge  UGRD  5
An analysis of communication breakdowns within the public sphere, focusing on the concept of distorted communication as it constitutes power and knowledge. 2 2-hr cl. Prereq: Journal or Comm major, grad standing, or permission of instructor. Not open to students with credit for JCom 669.

671 Qualitative Research in Communication Studies: Participant Observation  UGRD  5
Intensive focus on participant observation as it is practiced in communication studies with emphasis on methodological issues, design, and implementation. Prereq: Journal or Comm major, grad standing, or permission of instructor. Not open to students with credit for JCom 671.

672 Qualitative Interviewing as Communication Practice  UGRD  5
Theories and practices of mediated and face-to-face question-asking as communicative tool for understanding others’ views of events, information, policies, systems, technologies. Prereq: Journal or Comm major, grad standing, or permission of instructor. Not open to students with credit for JCom 672.

673 Qualitative Research in Communication Studies: Analyzing Texts and Documents  UGRD  5
Theory and practice of communicative analysis of social/cultural texts and documents and the records produced by systematic observing and interviewing procedures. 2 2-hr cl. Prereq: Journal or Comm major, grad standing, or permission of instructor. Not open to students with credit for JCom 673.

683 Internship in Journalism or Communication UGRD  1-5
On-the-job internships in communication practice or research conducted under supervision of internship coordinator through the undergraduate advising office. Su, Au, Wi, Sp Qtrs. Prereq: Permission of undergraduate advisor. Repeatable to a maximum of 15 cr hrs. No more than 5 cr hrs toward undergraduate major. This course is graded S/U.

690 Communication Co-operative Education UGRD  0-15
Experience
This opportunity is designed to allow students to participate in a full immersion professional experience in a career-related position. Arr. Prereq: Permission of instructor. This course is graded S/U.

693 Individual Studies  UGRD  1-5
Students make extensive and significant studies in the field of journalism or communication. Su, Au, Wi, Sp Qtrs. Prereq: Sr standing in Journal or Comm, or grad standing, and permission of instructor. No more than 5 cr hrs for undergrad and 6 cr hrs for grad students will count toward degree programs. Repeatable to a maximum of 15 cr hrs, including cr/hrs earned in 693 decimals. This course is graded S/U.

694 Group Studies  UGRD  1-15
Regular class meetings and group discussions of specified problems. Au, Wi, Sp Qtrs. Prereq: Journal or Comm major, grad standing, or permission of instructor. Repeatable to a maximum of 25 cr hrs.

697 Study at a Foreign Institution  UGRD  1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Arr cl. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs, including cr/hrs earned in JCom 697. This course is Progress (P) graded. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

698.01 Study Tour: Domestic UGRD  1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details. Prereq: Permission of instructor. Repeatable for different titled study tours only.

698.02 Study Tour: Foreign UGRD  6-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details. Prereq: Permission of instructor. Repeatable up to a maximum of 30 cr hrs.

699 Undergraduate Research in Communication  UGRD  1-15
This experience will give students exposure to research in communication by allowing students to becoming involved in faculty research as assistants. Prereq: permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

711 Advanced Design Applications in Human-Computer Interaction  GRAD  5
Designing sophisticated media environments that integrate multiple media formats; information architecture, user-centered design and usability testing. 2 2-hr cl. Prereq: Journal or Comm major, grad standing, or permission of instructor. Not open to students with credit for JCom 711.

713 Political Communication  GRAD  5
A graduate-level examination of the role of communication in American politics, acquainting the student with the literature on political communication and stimulating ideas for original research in the field of political communication. 2 2-hr cl. Prereq: Grad standing or permission of instructor. Not open to students with credit for JCom 713 or PolSci 713: Cross-listed in Political Science.

760 Communication Research Methods  GRAD  5
An overview of empirical research methods in communication. Au Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor. Not open to students with credit for JCom 760.

763 Qualitative Methodologies for Communication Research  GRAD  5
Graduate introduction to qualitative methodologies for empirical study of communication phenomena, emphasizing ethnographic participant observation, in-depth interviewing, focus groups, life narratives, text and discourse analysis. Sp Qtr. Prereq: Grad standing or permission of instructor. Not open to students with credit for JCom 763 or 861.

783H Honors Research  UGRD  3-15
A program of independent study for the student with special aptitudes; individual conferences and reports. Au, Wi, Sp Qtrs. Prereq: Sr standing in Journal or Comm with a grade of A in at least half of the Comm courses and an average of 8 in the remainder, and permission of instructor and the ASC Honors Committee. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

789 Survey Research Practicum  GRAD  5
Hands-on applications for students interested in the planning, implementation, and analysis of a scientific sample survey. 1 3-hr cl. Prereq: Admission to grad interdisciplinary specialization in survey research or permission of instructor. Not open to students with credit for 789 in JCom, AED/Econ, AgEcon, BusMktg, Econ, Educ/PL, Geog, PoliSci, Psych, Pub/Hlth, Pub/PoliM, Sociol, or Stat. Cross-listed in AED/Econ, AgEcon, BusMktg, Econ, Educ/PL, Geog, PoliSci, Psych, Pub/Hlth, Pub/PoliM, Sociol, and Stat.

790 Statistical Applications in Communication II  GRAD  5
Survey of research methods and "hands on" experience in conducting a research project. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 25 cr hrs.

794 Group Studies  UGRD  1-5
Group Studies. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

797 Interdepartmental Seminars  UGRD  3
Two or more departments may collaborate in presenting seminars in subjects of mutual interest to be announced. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 12 cr hrs.

801 Advanced Research Methods in Communication  GRAD  5
In-depth study of particular methods in the field of communication. Prereq: 606 or JCom 606 and grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs. Repeatable with different methods.

802 Literature and Journalism  GRAD  5
Integrated readings in literary journalism. 1 3.5-hr cl. Not open to students with credit for JCom 802.

805 Communication Law and Policy  GRAD  5
An overview of law and policy related to communication. 2 2-hr cl.

806 Contemporary Communication Theory  GRAD  5
An overview of contemporary approaches to the study of communication. Au Qtr. Prereq: Grad standing in Comm and permission of instructor. Not open to students with credit for JCom 806.

807 Foundations of Communication Theory  GRAD  5
An historical overview of the major theories and research that led to the development of the field of communication. Wi Qtr. 2 2-hr cl. Prereq: 806 or JCom 806 or permission of instructor. Not open to students with credit for JCom 807.

813 Public Opinion and Communication  GRAD  5
Discusses the central role of communication in the concept of public opinion. Reviews research on influence of communication on public opinion direction and quality. Prereq: Grad standing or permission of instructor. Not open to students with credit for JCom
Communication

820 Foundations of Interpersonal Communication GRAD 5
Survey of historical and current trends in interpersonal communication; examination of various approaches to communication research.
Prereq: 2-2 hr cl. Not open to students with credit for JCom 820.

830 Foundations of Organizational Communication GRAD 5
A survey course covering theory, methodological issues, environmental, cultural issues and structures in organizational communication.
Prereq: 820 or JCom 820 and standing or permission of instructor. Not open to students with credit for JCom 830.

840 Mass Communication and the Individual GRAD 5
Survey of communication theory and research in mass communication dealing with psychological aspects of mass communication.
Prereq: 806 and standing or permission of instructor. Not open to students with credit for JCom 840.

841 Mass Communication and the Social System GRAD 5
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 JCom 840.

850 Advanced Study in Communication Technology GRAD 5
Advanced Study in Communication Technology.
Prereq: 840 or JCom 840 and standing or permission of instructor. Not open to students with credit for JCom 850.

860 Seminar in Language and Social Interactions GRAD 5
Selected topics in language and social interaction.
Prereq: 806 or JCom 806 and standing or permission of instructor. Not open to students with credit for JCom 860.

870 Media, Campaigns, and Health GRAD 5
How mediated communication can influence human behavior and public policy in ways that can improve (or can negatively impact) human health and well-being. Not open to students with credit for JCom 870.

871 Health Communication in Interpersonal Settings GRAD 5
This course will introduce students to the research and theories comprising contemporary literature in health communication in interpersonal settings.
Prereq: Grad standing or permission of instructor.

883 Individual Studies in Communication GRAD 1-5
Graduate students may register for individual study in areas not normally covered by courses, or to supplement credits in existing 800-level courses.
Su, Au, Wi, Sp Qtrs. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

894 Group Studies GRAD 1-5
Group Studies.
Prereq: Grad standing with written permission of instructor. Repeatable to a maximum of 20 cr hrs.

899 Interdepartmental Seminar GRAD 3
Two or more departments may collaborate in presenting seminars on subjects of mutual interest; topics to be announced.

900 Communication Colloquium GRAD 1
Weekly presentation and discussion of current research by faculty and students.
Au, Wi, Sp Qtrs. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

927 Theory Construction in Communication GRAD 5
The formal principles of theory and model construction function as criteria for examining the strengths and weaknesses of communication research models.

930 Seminar in Interpersonal Communication GRAD 5
Seminar in Interpersonal Communication.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

940 Seminar in Mass Communication GRAD 5
Advanced seminar in current research on mass communication.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 20 cr hrs.

950 Communication and Diversity GRAD 5
The study of communication and issues of diversity in context or structure.
Prereq: Grad standing or permission of instructor.

970 Special Topics in Communication GRAD 5
Seminar in special topics in communication.
Repeatable to a maximum of 40 cr hrs, including cr hrs earned in JCom 970.

998 Thesis Research GRAD 1-18
Thesis research.
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

999 Research in Communication: Dissertation GRAD 1-18
Research for dissertation purposes only.
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

Comparative Studies

100 Introduction to the Humanities: Cross-Cultural Perspectives UGRD 5
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. 100H (honors) may be available.
GEC arts and humanities - international issues (Global) course.

170 Science and Religion UGRD 5
A philosophical examination of the relationship between science and religion; concentration on issues regarding the creation of the universe and the origins of life. Not open to students with credit for PHIL 170. Cross-listed in Philosophy: GEC arts and humanities - international issues (Global) course.

201 Literature and Society UGRD 5
Study of relationships among politics, society, and literature; analysis of social and political elements of literature and film from diverse cultures and historical periods.
201H (honors) may be available in some sections.
Prereq: English 110 or equiv. GEC arts and humanities - international issues (Global) course.

202.01 Religious Studies: Literature and Religion UGRD 5
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 110 or equiv. GEC arts and humanities - international issues (Global) course.

202.02 Religious Studies: Comparative Sacred Texts UGRD 5
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 110 or equiv. GEC arts and humanities - international issues (Global) course.

203 Literature and the Self UGRD 5
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. 203H (honors) may be available.
Prereq: English 110 or equiv. GEC arts and humanities - international issues (Global) course.

204 Literature, Science, and Technology UGRD 5
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. 204H (honors) may be available.
Prereq: English 110 or equiv. GEC arts and humanities - international issues (Global) course.

205 Literature and Ethnicity UGRD 5
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 110 or equiv. GEC arts and humanities - international issues (Global) course.

214 Introduction to Sexuality Studies UGRD 5
This course will provide an introduction to sexuality studies through an interdisciplinary approach. To apply the knowledge learned, this course requires a fieldwork component, 2-2 hr cl. Prereq: English 110 or equiv. Not open to students with credit for EduLAES 214. Cross-listed in Education: Physical Activity and Educational Services.

234 American Icons UGRD 5
Interdisciplinary methods in American studies; emphasis on the plurality of identities in American culture.
Prereq: English 110 or equiv. GEC arts and humanities - international issues (Global) course.

239 City and Country in America UGRD 5
Interdisciplinary perspectives on the development, accuracy, and influence of popular images and stereotypes of city and country.
Prereq: Soph standing and English 110 or equiv.

240H The Nature of Modernity: Key Ideas and Enduring Problems UGRD 5
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. GEC arts and humanities - international issues (Global) course.

241 Introduction to Asian American Studies UGRD 5
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 110 or equiv. GEC arts and humanities - international issues (Global) course.

242 Introduction to Latino/a Studies UGRD 5
Introduction to Latino/a studies; history, politics, and cultural production of Latino/a communities in the U.S. and its borders.
Prereq: English 110 or equiv. GEC arts and humanities - international issues (Global) course.
243 Interdisciplinary Approaches to Race and Ethnicity in the Americas

Introduction to race and ethnicity in the U.S.: how race and ethnicity have shaped American culture, social thought, social institutions and inter-group relations.
PreReq: English 110 or equiv. Not open to students with credit for AFAmAS 243. Cross-listed in African-American and African Studies. GEC social diversity in the US course.

264 Reading Popular Culture

Introduction to the analysis of popular culture texts, with special emphasis on the relationship between popular culture studies and literary studies.
PreReq: English 110 or equiv. Not open to students with credit for English 264. Cross-listed in English, GEC arts and hums cultures and ideas course.

270 Introduction to Comparative Religion

Introduction to the academic study of religion through comparison among major traditions (Judaism, Christianity, Islam, Hinduism, Buddhism, etc.) and smaller communities. 270H (honors) may be available.
PreReq: English 110 or equiv. Not open to students with credit for RelStds 270. GEC arts and hums cultures and ideas and social diversity - international issues (Global) course.

272 Science and Society

Critical analysis of the multiple relations of science to society, with emphasis on knowledge, power, authority, values, and ethics.
PreReq: English 110 or equiv. GEC arts and hums cultures and ideas and social diversity - international issues (Western) course.

273 Introduction to World Literature

Analysis of oral and written literatures of diverse cultures and historical periods.
PreReq: English 110 or equiv. GEC arts and hums lit and social diversity - international issues (Western) course.

274 Introduction to Comparative Cultural Studies

Introduction to interdisciplinary field of cultural studies; emphasis on relation of cultural production to power, knowledge, and authority, globally and locally.
PreReq: English 110 or equiv. GEC arts and hums cultures and ideas course.

275 Introduction to Visual Representation

Analysis of the use of visual representation to generate and transmit ideas, information, and knowledge in contemporary culture.
PreReq: English 110 or equiv. GEC arts and hums cultures and ideas course.

277 Religion and Environmentalism

Examines the complex intersections between religion and environmental movements in North America, beginning with early contact between Europeans and Native Americans.
Sp Qtr. PreReq: English 110 or equiv.

293 Individual Studies

Designed to give students an opportunity for personal study with a member of the faculty.
PreReq: Permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

294 Group Studies

Designed to give groups of students an opportunity to pursue special studies not otherwise offered. 294H (honors) may be available.
PreReq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

298.01 Study Tour: Domestic

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
PreReq: Permission of instructor. Repeatable for different titled study tours only.

298.02 Study Tour: Foreign

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
PreReq: Permission of instructor. Repeatable for different titled study tours only.

301 Love in World Literature

Representations of love in world literature; emphasis on mythological, psychological, and ideological aspects of selected representations in different cultures and time periods. 301H (honors) may be available.
PreReq: 5 cr hrs in literature and English 110 or equiv. GEC arts and hums lit and social diversity - international issues (Global) course.

305 Medicine and the Humanities

Humanistic, scientific, and clinical perspectives on medical issues; literary uses of medical themes; medicine as art and science.
PreReq: Soph standing and English 110 or equiv. GEC arts and hums cultures and ideas and social diversity - international issues (Western) course.

306 The Quest in World Literature

Motive of the quest in world literature; physical and mental journeys as metaphors of personal transformation and salvation.
PreReq: English 110 or equiv. GEC arts and hums lit and social diversity - international issues (Global) course.

308 Representations of the Experience of War

Representations of war in works of literature, religious texts, and film from diverse cultures and time periods.
PreReq: English 110 or equiv. GEC arts and hums lit and social diversity - international issues (Global) course.

314 Women in East Asian and Asian-American Literature

Critical analysis of East Asian and Asian-American women's experience, examining gender and sexual differences in the distribution of political power and discourse. 314H (honors) may be available.
PreReq: English 110 or equiv. GEC arts and hums lit and social diversity - international issues (Global) course.

321 The Religions of India

History and structure of South Asian religions with attention to myth, ritual, art, philosophy, and social stratification.
PreReq: 270 or RelStds 270; or 202.01 or 202.02 recommended. Not open to students with credit for RelStds 321.

322 Native American Religions

Comparative survey of indigenous religions of North, Central, and South America; and patterns and diversity in religious experience, cosmologies, myths, rituals, social organizations, and sacred roles.
PreReq: 270 or RelStds 270; CompStd 202.01 or 202.02 recommended. Not open to students with credit for RelStds 322.

323 The Buddhist Tradition

History and structure of Buddhism from founding to present in South, Southeast, and East Asia; emphasis on rituals, beliefs, and local and regional variations.
PreReq: 270 or RelStds 270; CompStd 202.01 or 202.02 recommended. Not open to students with credit for RelStds or EALL 323. Cross-listed in East Asian Languages and Literatures.

324 African Religions

Survey of African traditional religions and their interaction with Islam and Christianity in Africa and the diaspora; emphasis on cosmologies, myth, ritual, ethics, and witchcraft.
PreReq: 270 or RelStds 270; CompStd 202.01 or 202.02 recommended. Not open to students with credit for RelStds 324.

336 Cultural Studies of American Musics

Investigation of the social, political, and cultural contexts of the development of popular musics in the U.S.
PreReq: English 110 or equiv. GEC arts and hums VPA and social diversity in the US course.

337 Transnationalism and Culture in the Americas

Transnationalism as a central feature of cultural and artistic production in the Americas, focusing on the politics of language, race, citizenship, migration, and national belonging.
PreReq: English 110 or equiv. GEC arts and hums cultures and ideas and social diversity - international issues (Global) course.

345 South Asian American Religion and Culture

Historical overview and critical discussion of South Asian American identity; focus on religious identity, ethnicity, nationalism, globalism, gender.
PreReq: English 110 or equiv. GEC arts and hums cultures and ideas course.

357 Introduction to Globalization and Culture

History and contemporary dimensions of globalization, focusing on period preceding European hegemony, era of European colonialism, period of decolonization, and contemporary contexts.
Wi, Sp Qtrs. PreReq: 2nd level standing or permission of instructor.

358 Film and Literature as Narrative Art

Relationships between film and literature; emergence of cinematic art as a form of representation with emphasis on diverse cultural traditions. 358H (honors) may be available.
PreReq: 5 cr hrs in Literature or CompStd. GEC arts and hums VPA and social diversity - international issues (Western) course.

367.01 Second Writing Course: American Identity in the World

American culture viewed from inside and from the perspective of foreign cultures, as seen in literature, film, art, music, journalism, folklore, and popular culture. 367.01H (honors) may be available.
PreReq: English 110 or equiv, and soph standing. GEC second writing and arts and hums cultures and ideas and social diversity in the US course.

367.02 Second Writing Course: Science and Technology in American Culture

Role of science and technology in contemporary American society; their relationship to human values; sources of concern about their impact; evaluation of selected issues. 367.02H (honors) may be available.
PreReq: English 110 or equiv; Math Placement level R or above, or completion of or concurrent enrollment in GEC science sequence; and soph standing. GEC second writing and arts and hums cultures and ideas and social diversity in the US course.

367.03 Second Writing Course: Religious Diversity in America

Exploration of the concept of religious freedom and the position of minority religious groups in American society.
PreReq: English 110 or equiv, and soph standing. GEC second writing and arts and hums cultures and ideas and social diversity in the US course.

367.04 Second Writing Course: U.S. Latino/a Identity

Latino/a identity in the U.S.; emphasis on Latino/a cultural history and expression and on role of race, class, gender, and sexuality in identity construction.
PreReq: English 110 or equiv, and soph standing. GEC second writing and social diversity in the US course.
92 Comparative Studies

373 Translating Literatures and Cultures UGRD 5
Introduction to issues and problems inherent to translating literatures and cultures.
Prereq: English 110 or 110.01 or 110.02 or 110.03; minimum two quarters foreign language. GEC arts and hums cultures and ideas and social diversity - international issues (Global) course.

373E Translating Literatures and Cultures UGRD 5
Introduction to issues and problems inherent to translating literatures and cultures.
Prereq: English 110 or 110.01 or 110.02 or 110.03; minimum two quarters foreign language. GEC arts and hums cultures and ideas and social diversity - international issues (Global) course.

376 The Jewish Mystical Tradition UGRD 5
The history of Jewish mysticism from antiquity to the present, with emphasis on its implications for the comparative study of religious experience. 376H (honors) may be available.
Prereq: English 110 or equiv. Not open to students with credit for RelStds or Hebrew 376. Cross-listed in Hebrew. GEC arts and hums cultures and ideas and social diversity - international issues (Global) course.

377 Contemporary Folklore in the Arab World UGRD 5
Study of contemporary folklore of the Arab world, including verbal art, material culture, visual self-presentation, and performance.
Prereq: English 110 or equiv. Not open to students with credit for Arabic 377. Cross-listed in Arabic. GEC arts and hums cultures and ideas and social diversity - international issues (Global) course.

380 Approaches to Comparative Studies UGRD 5
Introduces comparative studies majors to theoretical tools, methods of investigation, and key concepts in comparative studies research and scholarship.
Prereq: English 110 or equiv, and CompStd major; or permission of dept. Required for CompStd majors.

470 Folkslore of the Americas UGRD 5
Comparative study of folklore and folk groups of the Americas; topics vary: folk narratives, beliefs, customs, practices of Latino/a, Asian, African, Native, and Anglo cultures.
Prereq: English 110 or equiv. Repeatable to a maximum of 15 cr hrs.

475 Studies in Ethnography UGRD 5
Explores the history, theory, and methods of ethnographic study in different contexts (e.g., religious, ethnic, occupational groups).
Prereq: English 110.01, 110.02, 110.03 or equiv. Repeatable to a maximum of 10 cr hrs.

489 Research Internship in Comparative Studies UGRD 1-5
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.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

498.01 Study Tour: Domestic UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only.

498.02 Study Tour: Foreign UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only.

508 Utopia and Anti-Utopia UGRD 5
Exploration and critique of utopian thinking in different historical and cultural contexts.
Prereq: English 110 or equiv, and one course in CompStd. Not open to students with credit for 208.

510 The 20th-Century Novel: Transnational Contexts UGRD 5
Analysis of 20th-century fiction from western and nonwestern traditions: issues include colonialism, post-colonialism, nationalism, capitalism, revolution, migration.

515 Gender, Sexuality, and Religion UGRD 5
Explores intersections of gender, sexuality and religion in comparative and cross-cultural contexts.

520 Theory and Method in the Study of Religion UGRD 5
Survey of contemporary theories and methods used in the academic study of religion.
Sp Qtr. Prereq: CompStd or RelStds 270 or equiv.

524H Varieties of Christianity UGRD 5
Explores various expressions of Christianity, historically and cross-culturally. Readings are from different disciplines, including anthropology, archaeology, religious studies, sociology. Au Qtr. Prereq: English 110 or 110H or equiv. CompStd 270 recommended.

525 Comparative Religious Movements in Global Context UGRD 5
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 or IntStds or grad standing or permission of instructor. Not open to students with credit for IntStds 525. Cross-listed in International Studies.

526 New Age and New Religious Movements UGRD 5
Study of new age and new religious movements in contemporary American culture.
Prereq: 5 cr hrs in ComSpStd or RelStds or grad standing.

531 The City and Culture UGRD 5
Introduction to the comparative and cross-cultural study of cities, urban culture, and urbanism.
Prereq: One course in CompStd or IntStds, or grad standing, or permission of instructor. Not open to students with credit for IntStds 531. Cross-listed in International Studies.

533 Gender, Sexuality, and Science UGRD 5
Examination of relations between gender and science; topics include gendering of "scientia" and "nature," biological theories of sexual inequality, feminist critiques of science and technology.
Prereq: One course in CompStd or WGSSt. Not open to students with credit for WGSSt 536. Cross-listed in WGSSt.

541 Myth and Ritual UGRD 5
Ritual, myth, and literature: structural and thematic relationships.
Prereq: 10 cr hrs in literature or grad standing or permission of instructor.

542 Native American Identity UGRD 5
Historical and contemporary issues of American Indian identity, primarily in U.S.; focus on American Indian authors, artists, and scholars.
Not open to students with credit for this topic under 651 or 694.

543 Studies in Asian American Literature and Culture UGRD 5
Focused study of a topic in Asian American literary and cultural studies. Repeatable to a maximum of 10 cr hrs. including cr hrs earned in English 587. Cross-listed with English 587.

544 Studies in Latino/a Literature and Culture UGRD 5
Focused study of a topic in Latino/a literary and cultural studies. Repeatable to a maximum of 10 cr hrs. including cr hrs earned in English 588. Cross-listed with English 588.

545 Intersections: Approaches to Race, Gender, Class, and Sexuality UGRD 5
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 AfrAmASt or CompStd or WGSSt or grad standing. Not open to students with credit for AfrAmASt 545 or WGSSt 545. Cross-listed in AfrAmASt and WGSSt.

550 Wexner Center Seminar UGRD 1-5
Seminar offered in conjunction with Wexner Center exhibitions, performance series, media series, or symposia; may be taught by visiting artists, performers, or critics.
Art: Repeatable to a maximum of 15 cr hrs. including cr hrs earned in HistArt 500. Cross-listed as HistArt 500.

573 World Literature: Theory and Practice UGRD 5
Discussion of world literatures in theoretical, historical, and cultural contexts, with particular attention to translation, language, nationalism, globalization, and internationalism.
Prereq: 273 or 373.

573E World Literature: Theory and Practice UGRD 5
Discussion of world literatures in theoretical, historical, and cultural contexts, with particular attention to translation, language, nationalism, globalization, and internationalism.
Prereq: 273 or 373.

585.01 Topics in Literary Studies UGRD 5
Reconsiders the "great debates" about literacy—oral v. written, etc.—through the critical study of literacy’s acquisition, practice or use, and consequences/concomitants.
Prereq: 10 credit hours of English or Comparative Studies courses at the 200 or 300-level or permission of instructor. Not open to students with credit for English 585.01. History will be cross-listing the 585.02 version of the class only. They will offer it as 585. English will cross-list both versions (585.01 and 585.02) of the class. Repeatable to a maximum of 10 cr hrs. Cross-listed with English 585.01.

585.02 History of Literary UGRD 5
This course seeks to understand the history of literacy by examining literacy’s contributions to making the modern world, and social changes its impacts on literacy.
Prereq: 10 credit hours of English or Comparative Studies courses at the 200 or 300-level or permission of instructor. Not open to students with credit for History 585 or English 585.02. History will be cross-listing the 585.02 version of the class only. They will offer it as 585. English will cross-list both versions (585.01 and 585.02) of the class. Cross-listed with History 585 and English 585.02.

597.01 Issues of the Contemporary World: Global Studies of Science and Technology UGRD 5
Explores relations among culture, science, and technology in changing global contexts.
Prereq: Jr or Sr standing: completion of GEC second writing course, quantitative and logical skills requirement, and natural science sequence; or permission of instructor; 367.02 recommended. Not open to students with credit for 597. GEC contemporary world course.

597.02 Issues of the Contemporary World: Global Culture UGRD 5
Examines contemporary global cultural flows, the concepts useful in analyzing them, and the questions they raise about power and cultural change.
Prereq: Jr or Sr standing. GEC contemporary world course.
598 Senior Seminar in Comparative Studies UGRD 5
Writing seminar based on students' independent research. 
Prereq: 398 and sr standing. GEC third writing course.

620 Approaches to the Study of Religion UGRD 5
Survey and comparison of concepts, categories, theories, and methods used by various disciplines in the study of religion. 
Prereq: 270 or RelStds 270 or English 280 or Hebrew 273 or Philos 270 or grad standing or permission of instructor. 270 recommended. Not open to students with credit for RelStds 620.

641 The Japanese Religious Tradition UGRD 5
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: Permission of instructor. Not open to students with credit for RelStds 641 or Japanese 641. Cross-listed in Japanese.

645 Studies in Korean-American Literature UGRD 5
Critical study of Korean-American literature and literary genres of the twentieth century, with particular attention to historical, social and cultural contexts. 
Prereq: 10 cr hrs in any literature or grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs, including cr hrs earned in English 681.01 or Korean 645. Cross-listed with English 681.01 and with Korean 645.

648 Studies in Orality and Literacy UGRD 5
Examination of major theories of writing and of oral composition and transmission, in juxtaposition to case material deriving from a variety of Middle Eastern cultures. 
Prereq: Permission of instructor. Not open to students with credit for NELC 648. Cross-listed in Near Eastern Languages and Cultures.

651 Topics in Comparative Studies UGRD 5
Critical study of selected themes and topics in a comparative and cross-cultural perspective; emphasis on issues of method, critical theory, representation, power, knowledge, and authority. 
Prereq: One course in CompStd or RelStds; or grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

660 Modernity: Key Issues and Concepts UGRD 5
Introduces key issues and concepts defining modernity, focusing on how modernity has shaped recent and contemporary politics and culture, as well as discussions of globalization. 
Prereq: Jr standing or permission of instructor.

665 Studies in Japanese-American Literature UGRD 5
Critical study of modern Japanese-American literature in historical and cultural context; topics vary: literature of the interment, gender and identity politics, genre studies, women's writing. 
Prereq: 10 cr hrs in any literature or grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs, including cr hrs earned in English 681.02 or Japanese 665. Cross-listed with English 681.02 and with Japanese 665.

672 Poetry and Politics in the 20th-Century Mediterranean UGRD 5
Exploration of several poets and poetic traditions around the Mediterranean in relation to modern political struggles: resistance to fascism; dilemmas of imperialism and underdevelopment. 
Prereq: 5 cr hrs in CompStd or grad standing or permission of instructor. Not open to students with credit for NELC 672. Cross-listed in Near Eastern Languages and Cultures.

677.01 Studies in World Folklore: Genres of Folk Literature UGRD 5
Historical and cross-cultural study of genre theory; comparative study of specific genres of folk literature, e.g., fairy tales, folk tales, legends, epics, and jokes. 
Prereq: English 270 or grad standing. Repeatable to a maximum of 10 cr hrs.

677.02 Studies in World Folklore: Themes in World Folklore UGRD 5
Cross-cultural; cross-genre study of folklore themes; e.g., folklore of sex, folklore of religion; multidisciplinary perspective employs anthropological, psychological, and literary theory. 
Prereq: English 270 or grad standing. Repeatable to a maximum of 10 cr hrs.

677.03 Studies in World Folklore: Folk Custom, Art, and Material Culture UGRD 5
Study of folk customs, arts, and material culture; theoretical emphasis on structural affinities of these with other folk forms, including verbal art, ritual, festival, folk religion. 
Prereq: English 270 or grad standing. Repeatable to a maximum of 10 cr hrs.

677.04 Studies in World Folklore: Comparative Folk Groups UGRD 5
Comparative study of ethnic, regional, religious, kin, occupational, age or sex groups; emphasis on range of historical and contemporary theoretical perspectives used to understand groups. 
Prereq: English 270 or grad standing. Repeatable to a maximum of 10 cr hrs.

678 Studies in Chinese-American Literature UGRD 5
Critical study of modern Chinese-American literature in historical and cultural context; topics vary: gender issues, genre studies, women's writing. 
Prereq: 10 cr hrs in any literature or grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs, including cr hrs earned in Chinese 678 or English 681.03. Cross-listed with Chinese 678 and with English 681.03.

693 Individual Studies UGRD 1-10
Designed to give able students an opportunity to pursue special studies not otherwise offered. 
Prereq: Jr standing and permission of chairperson. Not open to freshmen or sophomores. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

694 Group Studies UGRD 3-5
Special topics. Repeatable to a maximum of 15 cr hrs.

697 Study at a Foreign Institution UGRD 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. 
Su, Au, Wi, Sp. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This course is Progress (*P) graded. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

698.01 Study Tour: Domestic UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details. 
Prereq: Permission of instructor. Repeatable for different titled study tours only.

698.02 Study Tour: Foreign UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details. 
Prereq: Permission of instructor. Repeatable for different titled study tours only.

699 Undergraduate Research in Comparative Studies UGRD 1-15
Undergraduate research in variable topics. 
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

705 Introduction to Latino Studies: Methods and Approaches GRAD 5
Introduces graduate students to the broad themes, concepts, and questions raised in the interdisciplinary field of Latino studies. 
Prereq: Not available to students with credit for Spanish 705. Cross-listed in Spanish.

706 Complex Ethnography GRAD 5
Critical analysis of relationships among the researcher, object of research, framing knowledge, and political context of ethnographic work. 
2 2-hr cl. Prereq: Grad standing or permission of instructor.

710 Approaches to Comparative Cultural Studies I GRAD 5
Comparative studies of contextualization and comparison; exploration of issues and methods involved in situating and comparing authoritative discourses (literary, religious, scientific) and other cultural processes. 
Wi Qtr. Prereq: Grad standing or permission of instructor.

711 Approaches to Comparative Cultural Studies II GRAD 5
Contemporary practices of contextualization and comparison; exploration of issues and methods involved in situating and comparing authoritative discourses (literary, religious, scientific) and other cultural processes. 
Au Qtr. Prereq: Grad standing or permission of instructor.

715 Theorizing America GRAD 5
Interdisciplinary study of culture, identity, and representation in the U.S. 
Prereq: Grad standing or permission of instructor.

716 Theorizing Culture GRAD 5
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.

725 Theorizing Religion GRAD 5
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.

730 Theorizing Science and Technology GRAD 5
Introduction to comparative and cultural studies of science and technology. 
Prereq: Grad standing or permission of instructor.

739 Comparative Constitutional Politics GRAD 5
Compares constitutions and constitutionalism across cultures and through different disciplines with special attention to how people make claims to secure their rights and interests. 
Prereq: Grad standing or permission of instructor. Not open to students with credit for History 739. Cross-listed in History.

741 Theorizing Genre GRAD 5
Comparative studies of genre theory and specific genres (e.g., epic, novel, autobiography, film genres) in cultural context. 
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

752 Race and Citizenship: Formations in Critical Race Theory GRAD 5
Critical analysis of concepts of law, e.g., a value-free legal code, universality of legal concepts, equitable enforcement; emphasis on U.S. 
Prereq: Grad standing or permission of instructor.
94 Comparative Studies

760 Theorizing Performance GRAD 5
Advanced introduction to field of performance studies; theory and practice of expressive social behaviors, including theatre, dance, ritual, sports, and embodied practices of everyday life.
Prereq: Grad standing or permission of instructor.

770.01 Intro to Grad Study in Folklore: Genres and Interpretive Methods GRAD 5
First of a two-course sequence in current scholarship and methods necessary for advanced study in folklore. Introduction to the canonical folklore genres and practice and methods in the interpretation of folklore in context.
Prereq: Grad standing or permission of instructor. Advanced undergrads may be admitted with permission of instructor. Not open to students with credit for English 770.01. Cross-listed in English.

770.02 Intro to Grad Study in Folklore: Field Research GRAD 5
Second of a two-course sequence in current scholarship and methods necessary for advanced study in folklore. Introduction to ethnographic research design, participant observation and interview methods, ethics in human subject research, archiving of research materials, and ethnographic writing.
Prereq: Grad standing or permission of instructor. 770.01 or English 770.01 recommended. Not open to students with credit for English 770.02. Cross-listed in English.

770.03 Intro to Grad Study in Folklore: The Ethnography of Communication GRAD 5
Ethnographic approaches to social interaction and performance; the speech community; the communicative economy.
Prereq: Grad standing. Cross-listed in English.

781 Studies in Women's History GRAD 5
An intensive reading course designed to prepare graduate students in women's history in a comparative framework.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 20 cr hrs. Including or including hrs earned in History 781. Cross-listed in History.

783H Honors Research UGRD 5-10
Senior honors course leading to graduation with distinction; independent study for the student with special aptitude.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: 4th yr standing with a grade of A in at least half of the CompSci courses taken and an average of B in the remainder; permission of the instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 10 cr hrs. Failure to receive a mark of S in this course is a disqualification for special honors. This course is graded S/U.

790 Foundations of Contemporary Critical Theory GRAD 5
Interdisciplinary survey of the theoretical bases of major contemporary approaches to the study of literature; readings in Marx, Freud, Derrida, Cixous, and others.
Prereq: Jr or sr or grad standing. Cross-listed in English, French, German, Italian, and Spanish.

792 Interdepartmental Studies in the Humanities UGRD 3-5
Two or more departments present colloquia on subjects of mutual interest; topics to be announced.
Arr. Prereq: Grad standing or permission of instructor(s). Repeatable to a maximum of 15 cr hrs.

798 Seminar GRAD 3
Writing seminar for second-year students in the comparative studies graduate program.
Wi Qtr. 1 2-hr cl. Prereq: Grad standing in comp std.

820 Comparative Sacred Architecture GRAD 5
Explores the diversity of natural and built environments designed for various religious purposes in different cultural and historical contexts.

825 Sacred Biography and the Cult of the Saints GRAD 5
Issues and problems in the study of sacred biography and the cult of the saints in both Christian and cross-cultural contexts.

826 Religion and Sexuality GRAD 5
Relationships between religion and sexuality in a cross-cultural, comparative framework with attention to theoretical models as well as particular texts and traditions.

827 Religion and Politics GRAD 5
Explores relationships across political and religious institutions and practices; topics vary.
Repeatable to a maximum of 15 cr hrs.

830 Science and Difference GRAD 5
Explores scientific constructions of difference (racial, gender, sexual, cultural) and the consequences of difference for the making of science.

841 Women's Autobiographical Writing GRAD 5
Maps diverse modes and practices of women's life writing by considering both theoretical works and autobiographical writing.

845 Literature in Global Contexts GRAD 5
Discussion of literary texts, cultural-political documents, and theoretical discourses in global contexts. Repeatable to a maximum of 15 cr hrs.
203 Computational Thinking in Context: Interactive Animations and Games UGRD 4
Introduction to computational thinking, focusing on problem solving and programming concepts and skills needed to create interactive graphics, animations, and games; creativity and imagination encouraged. Au, Wi, Sp Qtrs. 1 1-hr lec, 3 1-hr lab. Recommended for students with little or no programming experience or who are not confident in their programming background.

204 Computational Thinking in Context: Digital Images and Sound UGRD 4
Introduction to computational thinking, focusing on problem solving and programming concepts and skills needed to manipulate digital images and sound; creativity and imagination encouraged. Au, Wi, Sp Qtrs. 2 1-hr lec, 2 1-hr lab. Recommended for students with little or no programming experience or who are not confident in their programming background.

205 Computational Thinking in Context: Science and Engineering UGRD 4
Introduction to computational thinking, focusing on problem solving and programming concepts and skills using examples from science and engineering. Au, Wi, Su Qtrs. Prereq: Math 151 or equivalent. Not open to students with credit for CSE 294P. Recommended for students with little or no computer programming experience. *Primarily targeted to undergraduate students majoring in science/engineering disciplines. *MATLAB is taught.

214 Data Structures for Information Systems UGRD 4
Subroutines and modular programming; searching; basic data structures; recursion; introduction to sequential files. Su, Au, Wi, Sp Qtrs. 3 cl, 1 1-hr lec, 3 3-hr hrs lab. Prereq: 201. Java is used.

215 Introduction to Object-Oriented Programming UGRD 4
Introduction to object-oriented programming; encapsulation using classes, inheritance, etc.; basic data structures. * Su, Au, Wi, Sp Qtrs. 3 cl, 1 1-hr lec, 2 2-hr lab. Prereq: 202 or equiv. Not open to Ctrltrfn majors. C++ is taught.

221 Software Development Using Components UGRD 4
Component-based software from client programmer's perspective; intellectual foundations of software engineering; mathematical modeling; specification of object-oriented components; layering; testing and debugging layered operations. Su, Au, Wi, Sp Qtrs. 3 cl, 1 1-hr lec, 1 1-hr lab. Prereq: Math 151 or 161/161H or 190H; 201 or 202 or 203 or 204 or EnGraph 167 or Engineer 192H or CSE Placement Level A. RESOLVE/C++ is taught.

222 Development of Software Components UGRD 4
Templates for generalization and decoupling; container components; component-based software from implementer's perspective; data representation using layers and using pointers. 222H (honors) may be available. Su, Au, Wi, Sp Qtrs. 3 cl, 1 1-hr lec, 1 1-hr lab. Prereq: 221. RESOLVE/C++ is used.

230 Introduction to C++ Programming UGRD 4
Introduction to programming in C++ and object-oriented programming; encapsulation using classes, inheritance, etc. Su, Au, Wi, Sp Qtrs. 3 cl, 1 3-hr lab. Prereq: 201, 202, or EnGraph 167 or equiv. Not open to Ctrltrfn majors.

294 Group Studies UGRD 1-5
This course is designed to give the student an opportunity to pursue special studies not otherwise offered. Su, Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 15 or hrs.

314 Business Programming with File Processing UGRD 4
Business data processing principles and programming: sequential file processing algorithms, sorting, data validation. COBOL is taught. Au, Wi Qtrs. 3 cl, Prereq: 214.

321 Case Studies in Component-Based Software UGRD 4
Case studies using tree and binary tree components and binary search trees; context-free grammars; tokenizing, parsing, and code generating components; sorting components and sorting algorithms. Su, Au, Wi, Sp Qtrs. 3 cl, 1 1-hr lec, 1 1-hr lab. Prereq: 222/222H or Prereq or concur: Math 366 or Math 345. RESOLVE/C++ is used.

360 Introduction to Computer Systems UGRD 4
Introduction to computer architecture at the machine language and assembler language level; assembler language programming and lab. Su, Au, Wi, Sp Qtrs. 3 cl, Prereq: 214 or 222/222H.

421 Software Development in Java UGRD 3
Introduction to professional software development in Java; tools for coding, testing, version control, documentation; language-specific best practices stemming from principles of component-based design. Prereq: 321.

459.11 Programming Languages for Programmers: The UNIX Programming Environment UGRD 1
Introduction to the UNIX programming environment including: shell programming (csh); regular expressions; makefiles; grep, sed, awk; and programming languages. Wi Qtr. 1 cl, Prereq: 321. This course is intended for experienced programmers who wish to learn an additional language. All are 1-hr lectures. Repeatable to a maximum of 2 or hrs. This course is graded S/U.

459.21 Programming Languages for Programmers: Programming in C UGRD 1
Programming in C. Au, Wi, Sp Qtrs. Prereq: 314 or 321. This course is intended for experienced programmers who wish to learn an additional language. All are 1-hr lectures. Repeatable to a maximum of 2 or hrs. This course is graded S/U.

459.22 Programming Languages for Programmers: Programming in C++ UGRD 1
Elementary language constructs of C++ for students well versed in programming. Su, Au, Wi, Sp Qtrs. Prereq: 321. This course is intended for experienced programmers who wish to learn an additional language. All are 1-hr lectures. This course is graded S/U.

459.23 Programming Languages for Programmers: Programming in JAVA UGRD 1
Elementary language constructs of JAVA for students who are well versed in programming. Su, Au, Wi, Sp Qtrs. 1 cl, Prereq: 321. This course is intended for experienced programmers who wish to learn an additional language. All are 1-hr lectures. This course is graded S/U.

459.24 Programming Languages for Programmers: Programming in C# UGRD 1
Elementary language constructs of C# for students who are well versed in programming. Wi Qtr. Prereq: 321. Not open to students with credit for 494R.

459.31 Programming Languages for Programmers: Programming in LISP UGRD 1
Programming in LISP. Sp Qtr. Prereq: 314 or 321. This course is intended for experienced programmers who wish to learn an additional language. All are 1-hr lectures. Repeatable to a maximum of 2 or hrs. This course is graded S/U.

459.41 Programming Languages for Programmers: Programming in COBOL UGRD 1
Programming in COBOL. Su Aqr Qtr. Prereq: 321. Not open to students with credit for 314. This course is intended for experienced programmers who wish to learn an additional language. All are 1-hr lectures. Repeatable to a maximum of 2 or hrs. This course is graded S/U.

459.51 Programming Languages for Programmers: Programming in Perl UGRD 1
Programming in Perl. Basic syntax of the Perl programming language; several common applications including text file processing. Sp Qtr. 1 cl, Prereq: 321. This course is intended for experienced programmers who wish to learn an additional language. All are 1-hr lectures. This course is graded S/U.

489 Professional Practice in Industry UGRD 2
Preparation and submission of a comprehensive report based on actual employment experience in a co-op job in industry. Su, Au, Wi, Sp Qtrs. Prereq: Admission to co-op program in CSE. Repeatable to a maximum of 6 or hrs. Cr hrs to be used as free electives only. This course is graded S/U.

493 Individual Studies UGRD 1-5
Planning, conducting, and reporting a special study appropriate to the needs of the student. Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 12 or hrs. This course is graded S/U.

494 Group Studies UGRD 1-5
Designed to give the student an opportunity to pursue special studies not otherwise offered. Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 or hrs. This course is graded S/U.

502 Object-Oriented Programming for Engineers and Scientists UGRD 3
Introduction to object-oriented programming for experienced procedural programmers, with applications from engineering and science; interfaces, classes, packages; implements and extends relationships; design patterns. Au Qtr. 3 cl, Prereq: Math 152 or equiv; EnGraph 167 or 202 or equiv; additional programming experience. Not open to students with credit for 321 or 694J. Java is taught. May not be used as a technical elective by CSE majors.

516 Information Systems Analysis and Design UGRD 4
Introduction to information systems development; tools of structured analysis; data flow diagrams, data dictionary, process descriptions; students develop user specifications in a term project. Su, Au, Wi, Sp Qtrs. 3 cl, 1 1-hr lab, Prereq: 314 and Math 366.

541 Elementary Numerical Methods UGRD 3
Survey of basic numerical methods; number systems and errors of finite representation, solution of a single non-linear equation, interpolation, numerical integration, and solution of linear systems. Su, Au, Wi, Sp Qtrs. 3 cl, Prereq: 221/221H or 230 or 502; Math 153.
96 Computer Science and Engineering

551 Introduction to Information Security  UGRD 3
Introduction to security of digital information including: threats, regulations, risk management, attack detection and response, cryptography, forensics, and technical training and certification.
Wi, Sp Qtrs. 3 cl. Prereq: 321 or 502 or AcctMIS 531 or equiv; and second writing course; or permission of instructor.

560 Systems Software Design, Development, and Documentation  UGRD 5
Software engineering as applied to various classical computer systems programs; assemblers, macroprocessors, loaders; major group project involving the design and implementation of systems software; communication skills emphasized.
Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 314 or 321 and 360 or ECE 265, and a second writing course.

570 File Design and Analysis  UGRD 3
Random file processing; file organization and access methods; time and space considerations.
Introduction to relational database systems.
* Au, Wi Qtrs. 3 cl. Prereq: 314 or 321, and Math 366.

581 Interactive Computer Graphics  UGRD 4
Introduction to interactive graphics programming. Graphics APIs, display hardware, graphics processing pipeline (geometry processing, rasterization, texture mapping, etc.), geometric modeling, image formats, color theories.
Au, Wi, Sp Qtrs. 3 cl. Prereq: 222 or 230 or 502.

601 Social and Ethical Issues in Computing  UGRD 1
Social, ethical, and legal issues facing computing professionals; ethical principles; discussion of case studies.
Wi, Sp Qtrs. 1 1.5-hr cl. Prereq: 560.

612 Introduction to Cognitive Science  UGRD 3
Cognitive science is an interdisciplinary study of the nature of human thought psychological, philosophical, linguistic, and artificial intelligence approaches to knowledge representation.
* Au, Wi, Sp Qtrs. 2 1.5-hr cl. Prereq: Permission of instructor and a total of 12 or hrs from at least two of the following areas: computer science, linguistics, philosophy, and psychology. Not open to students with credit for Linguist 612, Philos 612 or Psych 612. Cross-listed in Linguistics, Philosophy, and Psychology.

616 Object-Oriented Systems Analysis  UGRD 4
Information systems analysis; object-oriented analysis models and tools; use cases, system modeling using UML; requirements specification development; term project.
Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 670 and Math 366; or grad standing in CSE. Not open to students with credit for 516 or 694E.

621 Introduction to High-Performance Computing  UGRD 3
High-performance computer architecture, scientific/engineering computing, development of parallel programs, parallelization overheads; performance evaluation.
Au Qtr. 3 cl. Prereq: 541; Math 568 or Math 571 or Math 601. Course is well suited to grad students from science/engineering in addition to CSE students.

625 Introduction to Automata and Formal Languages  UGRD 3
Machine-based and grammatical models of computation: finite automata and regular languages, pushdown automata and context-free languages. 625H (honors) may be available.
Au, Wi, Sp Qtrs. 3 cl. Prereq: 321; Math 368 or Math 345.

630 Survey of Artificial Intelligence I: Basic Techniques  UGRD 3
A survey of the basic concepts and techniques, problem solving, and knowledge representation including an introduction to expert systems.
Au, Wi, Sp Qtrs. 3 cl. Prereq: 222/222H or 230 or 502; Math 366.

634 Computer Vision for Human-Computer Interaction  UGRD 3
Computer vision algorithms for use in human-computer interactive systems. Topics include image formation, image features, segmentation, shape analysis, object tracking, motion calculation, and applications.
Au Qtr. 3 cl. Prereq: 630 or ECE 352; Math 568 or 571; or permission of instructor.

640 Numerical Analysis  UGRD 3
Analysis of numerical methods for ordinary differential equations, boundary value, and characteristic value problems, splines, non-linear equations, approximation of functions; standard mathematical software libraries.
* Wi Qtr. 3 cl. Prereq: 642 or equiv; Math 255 or 415; and 541 or grad standing.

642 Numerical Linear Algebra  UGRD 3
Iterative methods for the solution of linear systems, computation of eigenvalues and eigenvectors, linear programming-simplex method, use of standard mathematical software libraries.
* Au Qtr. 3 cl. Prereq: 541; Math 568 or 571.

651 Network Security  UGRD 3
An introduction to network security; security threats, services, protocols, verification and design, architectures, testing advances; elements of cryptography; securing network systems and applications.
Sp Qtr. 3 cl. Prereq: 677.

652 Applied Information Security Project  UGRD 4
Team projects: solve information security challenges (network hardening, intrusion detection and vulnerability scanning, forensics) in virtual server environment; results communicated through report writing and presentation.
Au Qtr. Prereq: 560; 551 or 677; or grad standing.

655 Introduction to the Principles of Programming Languages  UGRD 4
Programming language concepts such as grammars and parse trees; interpretation versus compilation, binding, and scope rules; and language constructs for control and data abstraction.
Su, Au, Wi, Sp Qtrs. 3 cl. 1-1.5 hr lab. Prereq: 560 and 625.

660 Introduction to Operating Systems  UGRD 3
Operating system concepts: memory management, process management, and file management; sample operating systems.
Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 560 or ECE 662; Stat 427.

662 Operating Systems Laboratory  UGRD 3
Construction of operating system components: scheduling, context switching, process management, memory paging, memory management, interrupt processing.
Wi Qtr. 2 1.5 hr lab. Prereq: 459.21 and 680. Lab assignments are programmed in C.

668 Applied Component-Based Programming for Engineers and Scientists  UGRD 3
Application of component-based software engineering technology to design and implementation of software systems in engineering and science.
Wi Qtr. 3 cl. Prereq: 502 or 560. Not open to students with credit for 768 or ECE 768. Cross-listed in Electrical Engineering.

670 Introduction to Database Systems I  UGRD 3
Database systems use, logical database design, entity-relationship model, database normalization, query languages and SQL, relational algebra, and relational calculus; database design project.
Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 314 or 222 or 230 or 502; Math 366 or Math 345.

671 Introduction to Database Systems II  UGRD 3
Object-oriented and extended relational database systems; data warehousing; active databases; GUI interface to a relational database system; introduction to data and file storage.
Au, Wi, Sp Qtrs. 3 cl. Prereq: 670.

673 Database and Information Management for Manufacturing  UGRD 3
File and data management, information flow in manufacturing, handling of geometric data for CAD/CAM/CAE, and communication between different computer systems.
* Sp Qtr. Prereq: 221 or permission of instructor. Not open to CSE majors. Open to students in Manufacturing Systems and Engineering Program.

674 Introduction to Data Mining  UGRD 3
Introduction to the knowledge discovery process, key data mining techniques, efficient high performance mining algorithms, and exposure to applications of data mining.
Sp Qtr. 3 cl. Prereq: 670; 680; or permission of instructor.

675.01 Introduction to Computer Architecture  UGRD 3
Computer system components, instruction set design, hardwired control units, arithmetic algorithms/circuits, floating-point operations, introduction to memory and I/O interfaces.
Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 360 or ECE 265; Math 366; ECE 261. Not open to students with credit for 675 or 675.02. Intended for students with previous knowledge of Digital Logic Design.

675.02 Introduction to Computer Architecture  UGRD 4
Computer system components, instruction set design, hardwired control units, arithmetic algorithms/circuits, floating-point operations, introduction to memory and I/O interfaces.
Su, Au, Sp Qtrs. 4 cl. Prereq: 360 or ECE 265; Math 366. Not open to students with credit for 675 or 675.01. Intended for students without previous knowledge of Digital Logic Design.

676 Microcomputer Systems  UGRD 3
Bus structure; memory, interrupt, and I/O design; case studies on microprocessors and micro systems with emphasis on selection, evaluation, and applications based on their architectural features.
Sp Qtr. 3 cl. Prereq: 675 or ECE 662.

677 Introduction to Computer Networking  UGRD 3
Data communications, network architectures, communication protocols, data link control, medium access control; introduction to local area networks, metropolitan area networks, and wide area networks; introduction to Internet and TCP/IP.
Au, Wi, Sp Qtrs. 3 cl. Prereq: Physics 112 or 113; 360 or ECE 265; 459.21. Lab assignments are programmed in C.

678 Internetworking  UGRD 3
High-speed local area networks, metropolitan area networks, bridges, routers, gateways, TCP/IP; application services, network management.
Wi Qtr. 3 cl. Prereq: 680 and 677.

679 Introduction to Multimedia Networking  UGRD 3
Introduction to multimedia data types, multimedia compression technologies World-Wide-Web architectures, proxies, streaming video technologies, and network adaptation to multimedia.
Au Qtr. 3 cl. Prereq: 677.

680 Introduction to Analysis of Algorithms and Data Structures  UGRD 3
Performance analysis considerations in design of algorithms and data structures; asymptotic analysis, recurrence relations, probabilistic analysis, divide and conquer; searching, sorting, and graph processing algorithms. 680H (honors) may be available.
Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 560 or 668 or ECE 668; Stat 427; Math 566.

685 Discrete Mathematics  UGRD 3

693 Introduction to Computer Engineering  UGRD 3

694 Systems Programming  UGRD 3

696 Introduction to Computer Organization  UGRD 3

697 Digital Logic Design  UGRD 3

698 Analysis and Design of Computer Systems  UGRD 3

699 Project in Computer Engineering  UGRD 3
681 Introduction to Computer Graphics UGRD 4
Introduction to display hardware and applications, interactive techniques, 2D scan conversion, 2D and 3D transformations, clipping, 3D viewing, introduction to visible surface algorithms and illumination models. 
Au, Wi Otrs. 3 cl. Prereq: 560, 581; or grad standing.

682 Computer Animation UGRD 4
Survey of computer animation algorithms and techniques; interpolation, path following, quaternions, object deformations, forward/inverse kinematics, rigid body dynamics, particle systems, flocking, autonomous behavior, L-systems. Wi Qtr. 2 hr cl. Prereq: 541, 560, 581; or 681, 601. Not open to students with credit for 694F.

683 Computer Animation - Algorithms and Techniques UGRD 4
Survey of various algorithms and techniques used in computer animation, including interpolation-based techniques, forward and inverse kinematics, physics-based simulation, motion capture, and behavioral animation. Au Sp. Prereq: 541; 581 or 681; Math 586 or Math 571. Not open to students who have taken 694A. Multiple small programming projects using OpenGL. The credit hours for this course is set to 4 (instead of 3) due to the additional time it takes to complete work outside the designated class time.

693 Individual Studies UGRD 1-5
Designed to give the student an opportunity to pursue special studies not otherwise offered. Su, Au, Wi, Sp. Otrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

694 Group Studies UGRD 1-5
Designed to give the student an opportunity to pursue special studies not otherwise offered. Su, Au, Wi, Sp. Otrs. Arr. Repeatable to a maximum of 15 cr hrs.

699 Undergraduate Research in Computer Science and Engineering UGRD 1-5
Opportunity for undergraduate student to conduct research in Computer Science and Engineering. Su, Au, Wi, Sp. Otrs. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

721 Introduction to Parallel Computing UGRD 4
Principles and practice of parallel computing; design, implementation, and evaluation of parallel programs for shared-memory architectures, local-memory architectures, and vector processors. Wi Qtr. 3 cl, 1-3 hr lab. Prereq: 621. Lab assignments given.

723 Introduction to Cryptography UGRD 3
Symmetric-key encryption, cryptographic hash functions, message authentication, public-key cryptography, discrete logarithm-based cryptography, elliptic curve cryptography, digital signatures, elementary cryptographic protocols. Sp Qtr. Prereq: 625 or 651 or 690 or Math 573; Stat 427 or Math 530; or permission of instructor.

725 Computability and Unsolvability UGRD 3
Time and space measures; Turing machine variants and RAMs; universal Turing machines; undecidable language problems; development of efficient algorithms. Wi, Sp Otrs. 3 cl. Prereq: 625.

727 Computational Complexity UGRD 3
Time and space complexity classes and hierarchies; deterministic and nondeterministic log space; polynomial time; polynomial space; complete and provably hard problems; polynomial time. ** Au Qtr. 3 cl. Prereq: 725 and 780.

730 Survey of Artificial Intelligence II: Advanced Topics UGRD 3
A survey of advanced concepts, techniques, and applications of artificial intelligence, including knowledge-based systems, learning, natural language understanding, and vision. Au Qtr. 3 cl. Prereq: 630.

731 Knowledge-Based Systems UGRD 4
Theory and practice of expert systems and knowledge-based systems; use of current knowledge-based systems software tools. Sp Qtr. 3 cl, 1-3 hr lab. Prereq: 560, 601; 630 or grad standing.

732 Computational Linguistics UGRD 4
Computational techniques for understanding and producing natural language, investigating the structure and meaning of sentences and connected discourse. Symbolic and probabilistic techniques are discussed. * Sp Qtr. 3 cl. Prereq: 630, 625 or Linguist 648, 611. 625, 201, or permission of instructor. This course includes programming assignments. Students are expected to be proficient in at least one programming language in order to succeed in the course. Offered even numbered years.

733 Foundations of Spoken Language Processing UGRD 3
Fundamentals of automatic speech recognition and speech synthesis, lab projects concentrating on building systems to process speech. Sp Qtr. 2.5 hr cl. Prereq: 625 or Linguist 484; or 630, 730 or Stat 428. Offered in even-numbered years.

737 Proseminar in Cognitive Science UGRD 2
An in-depth examination of the interdisciplinary field of Cognitive Science; emphasizes fundamental issues of each discipline, provides illustrations of representative research being conducted at OSU. * Sp Qtr. 1.2 hr cl. Prereq: 612, Lingust 612, Psych 612, or Philos 612, or permission of instructor. Repeatable to a maximum of 4 cr hrs. Cross-listed in Industrial Systems Engineering Linguistics, Philosophy, Psychology, and Speech and Hearing Science.

739 Knowledge-Based Systems in Engineering UGRD 3
Application of knowledge-based system principles to engineering problems, including practical knowledge engineering, techniques for problem assessment, and implementation. * Sp Qtr. 2.5 hr cl. Prereq: 630 or permission of instructor. Cross-listed in Chemical, Civil Engineering and Nuclear Engineering.

741 Comparative Operating Systems UGRD 3
A careful examination of a number of representative computer operating systems. Su Qtr. 3 cl. Prereq: 660 or equiv.

755 Programming Languages UGRD 3
Procedural abstraction, data abstraction, control abstraction (nondeterminism, concurrency, etc.), operational semantics, denotational semantics, specification, and verification of programs. Wi, Sp Otrs. 3 cl. Prereq: 655 and Math 366.

765 Management Information Systems UGRD 3
Theory and practice of management information systems from the viewpoint of computer and information science; systems approach to management and organization; significance of information. * Wi Qtr. 3 cl. Prereq: 560 or equiv and sr or grad standing or permission of instructor.

758 Software Engineering Project UGRD 4
Principles and applications of programming team organization, cost estimation, scheduling, requirements analysis, design, documentation, programming-in-the-large, group reviews, testing, and debugging. Au, Sp. Otrs. 3 cl, 3 hr lab. Prereq: 757; 601.

760 Operating Systems UGRD 3
Advanced operating system concepts: process synchronization, process deadlock, security and access control, distributed operating system principles and prototypes. Wi, Au Qtrs. 3 cl Prereq: 660 or equiv.

762 Web-Services-Based Distributed Systems Project UGRD 4
Construction of a significant distributed software system using web services; team-based implementation of non-trivial algorithm(s) and realistic user interface. Sp Qtr. 3 cl. Prereq: 601; 660; 662 or 677 or 760. Lab assignments are programmed in C.

763 Introduction to Distributed Computing UGRD 3
Concepts and mechanisms in design of distributed systems; process synchronization, global state; reliability; distributed resource management; deadlock, performance evaluation; representative distributed operating systems. Sp Qtr. 3 cl. Prereq: 750.

765 Management Information Systems UGRD 3
Theory and practice of management information systems from the viewpoint of computer and information science; systems approach to management and organization; significance of information. * Wi Qtr. 3 cl. Prereq: Grad standing in CSE or permission of instructor.

767 Applied Use-Case-Driven Object-Oriented Analysis and Design for Engineers and Scientists UGRD 3
Case study using incremental and iterative use-case-driven process of building object-oriented scientific and engineering software systems; analysis, design, UML modeling, design patterns. * Sp Qtr. 3 cl. Prereq: 668 or ECE 668. Not open to students with credit for ECE 787. Cross-listed in Electrical and Computer Engineering. Odd years.

770 Database System Implementation UGRD 3
Fundamental design considerations, system principles and machine organizations of database systems; performance analysis of design alternatives, system configurations and hardware organizations; query and transaction processing. Wi Qtr. 3 cl. Prereq: 660, 670, 671 or grad standing in CSE.
772 Information System Project UGRD 4
Information system design and development principles: requirement analysis, database design methods and tools, process design, application development tools, testing, evaluation and documentation. Group term project.
Wi Qtr. 3 cl. Prereq: 560; 516 or 757; 601; 670.

775 Computer Architecture UGRD 3
Microprogramming, bit-slice logic, reduced instruction set computer architecture, advanced memory organizations, introduction to parallel computer architectures, and performance models/evaluation.
Au, Sp Qtrs. 3 cl. Prereq: 660; 675 or ECE 662.

776 Hardware/Software Interface Design Project UGRD 4
Principles and application of hardware and software design: design, programming, testing, and evaluation of an autonomous mobile robot system.
Sp Qtr. 3 cl. Prereq: 459.21; 601; 666; ECE 567 or 329; or permission of instructor.

777 Telecommunication Networks UGRD 3
Broadband integrated services digital networks, asynchronous transfer mode, gigabit networks, wireless networks, multimedia networks, all-optical networks, synchronous optical network.
Sp Qtr. 3 cl. Prereq: Offered.

778 Computer-Aided Design and Analysis of VLSI Circuits UGRD 4
VLSI design methodology; specification of VLSI circuits at various levels of abstraction; design, layout, and computer simulation of circuits; high-level synthesis; design projects.
Au Qtr. 3 cl. Prereq: 560; ECE 561; 601; 675 or ECE 662.

779 Introduction to Neural Networks UGRD 3
Wi Qtr. 3 cl. Prereq: 630 or ECE 600 or 662 or permission of instructor. Not open to students with credit for ECE 779. Cross-listed in Electrical and Computer Engineering.

780 Analysis of Algorithms UGRD 3
Algorithm design paradigms; mathematical analysis of algorithms; NP-completeness.
Au, Wi Qtrs. 3 cl. Prereq: 680 or grad standing and equiv of 680.

781 Introduction to 3D Image Generation UGRD 4
3D viewing algorithms, advanced illumination models, smooth shading, shadows, transparency, ray tracing, and color models.
Wi Qtr. 3 cl. Prereq: 581 or 681; 560 or grad standing. Lab assignments are programmed in C.

782 Advanced 3D Image Generation UGRD 3
Advanced topics in rendering 3D realistic imagery including texture mapping, sampling theory, advanced ray tracing, radiosity, 3D rendering hardware, introduction to surfaces, animation, and volume graphics.
Au Qtr. 3 cl. Prereq: 681. Lab assignments are programmed in C.

783H Honors Research UGRD 1-5
Supervised research and project work arranged individually for honors students.
Su, Au, Wi, Sp Qtr. Arr. Prereq: Honors standing; permission of instructor. Limitations on number of credit hours applicable toward degree are governed by departmental rules. Repeatable to a maximum of 12 or 18 hrs. This course is graded S/U.

784 Geometric Modeling UGRD 3
Common mathematical techniques for modeling geometric objects in computer graphics and CAD applications. Sample based modeling and hierarchical representations.
Sp Qtr. 3 cl. Prereq: 561 or permission of instructor. Lab assignments are programmed in C, C++.

786 Game Design and Development Project UGRD 4
Team-based project: conceptual design, technical design, and implementation of an interactive game, integrating custom code and tools; emphasizes teamwork, written and oral communication skills.
Sp Qtr. 2.1-5 hr cl. 12-2 hr lab. Prereq: 560; 581; 601; 630. Strong background in Graphics and Artificial Intelligence will be helpful; suggested courses 730, and 781 or 682.

788.01 Intermediate Studies in Computer and Information Science: Computational Complexity UGRD 1-5
Intermediate work in one of the specialized areas of computer and information science is offered. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 30 cr hrs.

788.02 Intermediate Studies in Computer and Information Science: Information Systems and Database Systems UGRD 1-5
Intermediate work in one of the specialized areas of computer and information science is offered. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 30 cr hrs.

788.03 Intermediate Studies in Computer and Information Science: Symbolic Computation UGRD 1-5
Intermediate work in one of the specialized areas of computer and information science is offered. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 30 cr hrs.

788.04 Intermediate Studies in Computer and Information Science: Artificial Intelligence UGRD 1-5
Intermediate work in one of the specialized areas of computer and information science is offered. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 30 cr hrs.

788.06 Intermediate Studies in Computer and Information Science: Operating Systems and Systems Programming UGRD 1-5
Intermediate work in one of the specialized areas of computer and information science is offered. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 30 cr hrs.

788.08 Intermediate Studies in Computer and Information Science: Computer Organization UGRD 1-5
Intermediate work in one of the specialized areas of computer and information science is offered. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 30 cr hrs.

788.09 Intermediate Studies in Computer and Information Science: Numerical Analysis UGRD 1-5
Intermediate work in one of the specialized areas of computer and information science is offered. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 30 cr hrs.

788.10 Intermediate Studies in Computer and Information Science: Human-Computer Interaction UGRD 1-5
Intermediate work in one of the specialized areas of computer and information science is offered. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 30 cr hrs.

788.11 Intermediate Studies in Computer and Information Science: Parallel and Distributed Computing UGRD 1-5
Intermediate work in one of the specialized areas of computer and information science is offered. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 30 cr hrs.

788.12 Intermediate Studies in Computer and Information Science: Software Engineering UGRD 1-5
Intermediate work in one of the specialized areas of computer and information science is offered. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 30 cr hrs.

Intermediate work in one of the specialized areas of computer and information science is offered. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 30 cr hrs.

790 Advanced Algorithms GRAD 3
Advanced graph algorithms, string algorithms, linear programming, matix operations, Fourier transforms, randomized algorithms, approximation algorithms, geometric algorithms. Prereq: 780 or permission of instructor.

790 Advanced Algorithms UGRD 3
Advanced graph algorithms, string algorithms, linear programming, matix operations, Fourier transforms, randomized algorithms, approximation algorithms, geometric algorithms. Prereq: 780 or permission of instructor.

793 Individual Studies UGRD 0-5
Designed to give the individual student an opportunity to pursue special studies not otherwise offered. Su, Au, Wi, Sp Qtr. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 24 cr hrs. Repeatable to a maximum of 12 cr hrs for undergraduate and 24 cr hrs for graduate students. This course is graded S/U.

794 Group Studies UGRD 1-5
Designed to give students an opportunity to pursue special studies not otherwise offered. Su, Au, Wi, Sp Qtr. Repeatable to a maximum of 15 cr hrs.

797 Interdepartmental Seminar UGRD 1-5
Two or more departments may collaborate in presenting seminars in subjects of mutual interest topics to be announced. ^ Repeatable by permission.
### Computer Science and Engineering

861 **Computer Communication Networks I**  
**GRAD 3**  
A foundational and analytical understanding of network architecture, error control, queuing analysis, and network dimensioning.  
Prereq: Math 530 or Stat 428 or Stat 520 or ECE 804 or permission of instructor. Not open to students with credit for ECE/CSE 894G. Cross-listed in Electrical and Computer Engineering.

862 **Computer Communication Networks II**  
**GRAD 3**  
Foundational understanding of network analysis, routing, control, multi-access, and their examples in the context of the existing communication networks.  
Sp Qtr. Prereq: 861 or permission of instructor. Not open to students with credit for ECE/CSE 894J. Cross-listed in Electrical and Computer Engineering.

875 **Advanced Computer Architecture**  
**GRAD 3**  
Advanced pipelining techniques, vector supercomputers, shared-memory and distributed-memory multiprocessors, massively parallel systems, multithreaded machines.  
Sp Qtr. 3 cl. Prereq: 721.

885 **Seminar on Research Topics in Computer and Information Science**  
**GRAD 1**  
Lectures on current research by faculty members in the department.  
Au Qtr. 2 cl. Prereq: 1st yr grad student in CSE. This course is graded S/U.

888.01 **Advanced Studies in Computer and Information Science: Computational Complexity**  
**GRAD 1-5**  
Advanced work in one of the specialized areas of computer and information science.  
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

888.02 **Advanced Studies in Computer and Information Science: Information Systems and Database Systems**  
**GRAD 1-5**  
Advanced work in one of the specialized areas of computer and information science.  
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

888.03 **Advanced Studies in Computer and Information Science: Symbolic Computation**  
**GRAD 1-5**  
Advanced work in one of the specialized areas of computer and information science.  
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

888.04 **Advanced Studies in Computer and Information Science: Artificial Intelligence**  
**GRAD 1-5**  
Advanced work in one of the specialized areas of computer and information science.  
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

888.06 **Advanced Studies in Computer and Information Science: Operating Systems and Systems Programming**  
**GRAD 1-5**  
Advanced work in one of the specialized areas of computer and information science.  
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

888.07 **Advanced Studies in Computer and Information Science: Programming Languages**  
**GRAD 1-5**  
Advanced work in one of the specialized areas of computer and information science.  
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

### Construction Systems Management

**205** **Introduction to Construction Management**  
**UGRD 4**  
Overview of residential, commercial, industrial, institutional, and transportation sectors of the construction industry and the role of the construction manager. Quantitative aspects are emphasized.  
Au, Wi, Sp Qtrs. 2 1.5-hr cl, 1 3-hr lab. Prereq: Math 148.

**240** **Basic Metal Fabrication for the Construction Industry**  
**UGRD 4**  
A study of the principles and practices in basic metal fabrication using current metallurgical and welding processes required in the construction industry.  
Au, Wi, Sp Qtrs. 2 1.5-hr cl, 2 2-hr labs. Not open to students with credit for AgSysMgt 240.

**241** **Construction Methods and Materials**  
**UGRD 4**  
Material selection and construction methods for residential and commercial construction.  
Au, Wi, Sp Qtrs. 2 cl, 2 2-hr labs. Not open to students with credit for AgSysMgt 241.

**293** **Individual Studies**  
**UGRD 1-5**  
Work on problems not in regular courses; practice in development, organization, solution and reporting on such problems.  
Su, Au, Wi, Sp Qtrs. Arr. Prereq: 2.50 cumulative gpa/hr, written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**294** **Group Studies**  
**UGRD 1-5**  
Basic group studies in Construction Systems Management.  
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

**305** **Professional Development I**  
**UGRD 4**  
Business communications and professional development in construction systems management including informative and persuasive writing, academic planning, project management, research techniques, teamwork, report writing and presentations.  
Au, Wi, Sp Qtrs. 4 cl. Prereq: English 110. Not open to students with credit for AgSysMgt 305.

**310** **Electrical and Lighting Systems for Buildings**  
**UGRD 4**  
Concepts of electricity and illumination applied to the design and installation of electrical and lighting systems in buildings including safety, code requirements and installation methods.  
Au, Wi, Sp Qtrs. 2 1.5-hr cl, 1 2-hr lab. Prereq: Physics 111. Not open to students with credit for AgSysMgt 310.

**345** **Mechanical Systems for Buildings**  
**UGRD 4**  
Fundamentals of HVAC, plumbing, lighting, fire protection and noise and vibration control and their impact on building design and construction.  
Au, Wi, Sp Qtrs. 3 cl, 1 2-hr lab. Prereq: Physics 111 or 131.
100 Construction Systems Management

440 Construction Surveying and Site Development UGRD 5
Principles of hydrology, soil mechanics, and surveying as applied to site development for residential and commercial construction.
Su, Au, Sp Qtrs. 2 cl. Prereq: 305, Physics 111 or 131, CSE 101 or 105 or 200 or Engineer 182 or 183, EnGraph 121 or 166 or Engineer 181.

441 Construction Drawings and Estimating UGRD 5
Reading and interpretation of construction drawings and specifications for buildings. Estimating the material requirements of building construction projects using commercially available estimating aids.
Au, Wi, Sp Qtrs. 3 cl. 2-2-hr lab. Prereq: 240, 241, 310, 345, and 440. Not open to students with credit for AgConSM 341.

489 Internship in Construction Systems Management UGRD 3
A pre-approved internship of planned and supervised work experiences which provide professional and technical growth in the construction industry.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: ConSysMt major, permission of internship coordinator, 15 cr hrs in ConSysMt. Repeatable to a maximum of 6 cr hrs. Quarter of enrollment will be assigned by internship coordinator in consultation with the student.

540 Estimating and Scheduling I UGRD 4
Principles of construction estimating and scheduling applied to commercial/residential construction including quantity take-offs, planning, material management, resource procurement from site work through rough finishes.
Au, Wi, Sp Qtrs. 3 cl. 2-2-hr lab. Prereq: 441.

541 Estimating and Scheduling II UGRD 4
Principles of construction estimating and scheduling applied to commercial/residential construction including quantity take-offs, planning, material management, resource procurement from rough finish through project completion.
Au, Wi, Sp Qtrs. Prereq: 540.

545 Structures for Construction Managers I UGRD 4
Principles of statics, material properties, structural analysis and design useful in understanding the design and managing the construction of steel and wood structures.
Au, Wi, Sp Qtrs. 4 cl. 1-2-hr lab. Prereq: 240, 241, Physics 111 or 131.

546 Structures for Construction Managers II UGRD 4
Continuation of 545 to include concrete and masonry structures and foundations.
Au, Wi, Sp Qtrs. 4 cl. 1-2-hr lab. Prereq: 545.

593 Individual Studies UGRD 1-5
Individual study of problems and topics not included in regular courses.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: 2.50 cumulative pt-hr ratio, ConSysMt major, 15 cr hrs in ConSysMt. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

594 Group Studies UGRD 1-5
Selected topics in Consumer Systems Management.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

590 Practicum in Fashion and Retail Studies UGRD 3-5
Observation and application of concepts and principles learned in Consumer and Family Resources course.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Stat 133 or 135 or 145; or AEDEcon 205; or permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

592 Field Experience-Financial Management UGRD 3-5
Observation and application of concepts and principles learned in Consumer and Family Resources course.
Su, Au, Wi, Sp Qtrs. 1.5-hr cl. Not open to students with credit for FmResM 595 or TxtlClo 595. This course is graded S/U.

598.02 Practicum in Fashion and Retail Studies UGRD 1-5
Research
Provides students with the opportunity to work individually with a faculty member on a research project.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Jr or sr standing and permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

593 Individual Studies UGRD 1-5
Problems in various phases of consumer sciences. 500H (honors) may be available.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs. 1 or more conf. This course is graded S/U.

595 Professional Development UGRD 2
The professional: performance, role in society, position secured, involvement in organizations, and continuing development.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: 260 or 263 and 340, and 3rd yr standing. Not open to students with credit for FmResM 595 or TxtlClo 595. This course is graded S/U.

594 Group Studies UGRD 1-5
Selected topics in Consumer Sciences.
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 10 cr hrs.

670 Green Building and Sustainable Construction UGRD 3
Introduction to major components of sustainable building design and construction as well as other environmental and economic issues of sustainable built environments.
Au, Wi, Sp Qtrs. Prereq: Junior, senior or grad standing.

683H Undergraduate Honors Program Research UGRD 1-10
Individually supervised research and project work for Honors program students. Student presentations and thesis writing included.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: FAES 590.01, enrollment in honors program and permission of honors project supervisor. Repeatable as 683H in combination with 293, 593 or 693. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

683 Individual Studies UGRD 1-5
Advanced individual study of problems and topics not included in regular courses.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: 2.50 cumulative pt-hr ratio, 15 cr hrs of 300 level or higher ConSysMt courses and written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

694 Group Studies UGRD 1-5
Advanced group studies of selected topics in Consumer Systems Management.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

Consumer Sciences

294 Group Studies UGRD 2-5
Selected topics in family resource management.
Prereq: Open to students who meet dept's stated prereq. Repeatable to a maximum of 10 cr hrs.

300 The Consumer Perspective UGRD 2
The impact of three markets - financial services, textiles and apparel, and hospitality/tourism industries - on individual/family well-being. Contrast between the consumer decision-maker and the business decision-maker.
Au, Wi, Sp Qtrs. 1.5-hr cl. Not open to students with credit for FmResM 310, HospMgt 310 or TxtlClo 300.

310 Consumer Service and Satisfaction UGRD 3
The product/service mix consumers experience when purchasing financial, hospitality, and textile/apparel services/products. The relationship between service quality and consumer satisfaction.
Su, Au, Wi, Sp Qtrs. 2 1.5-hr cl. Not open to students with credit for FmResM 310, HospMgt 310 or TxtlClo 310.

340 The Multicultural Consumer UGRD 5
Examination of multicultural diversity in the US with a focus on how demographic trends and cultural forces impact the economy, the workplace, consumption patterns and retailer/marketplace responses.
Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: Stat 133 or 135 or 145; or AEDEcon 205; or permission of instructor. Not open to students with credit for FmResM 340. BERILAR course. GEC soci sci human, natural, and economic resources course.

543 Consumer Decision Making UGRD 5
The process of decision making by consumers is analyzed and implications for consumers, sellers, and policy makers are derived.
Au, Wi, Sp Qtrs. 2 2-hr cl. Not open to students with credit for FmResM 543. Required for Consumer Affairs option.

589.02 Field Experience-Financial Management UGRD 3-5
Observation and application of concepts and principles learned in Consumer and Family Financial Services course work to a professional setting. Department application must be filed two quarters in advance.
Prereq: 110 earned cr hrs, 2.00 CPRH, 560, AccntMIS 211, 212 and written permission of Instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

683H Undergraduate Honors Program Research UGRD 1-10
Individually supervised research and project work for Honors program students. Student presentations and thesis writing included.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: FAES 590.01, enrollment in honors program and permission of honors project supervisor. Repeatable as 683H in combination with 293, 593 or 693. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

694 Group Studies UGRD 1-5
Advanced group studies of selected topics in Consumer Systems Management.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.
697 Study at a Foreign Institution UGRD 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Quarters. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This course is Progress (P) graded. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

698.01 Study Tour: Domestic UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only. This course is graded S/U.

698.02 Study Tour: Foreign UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only. This course is graded S/U.

699 Undergraduate Research in Consumer Sciences UGRD 0-15
Undergraduate research in areas of study related to the unit and the instructor’s research agenda. 699H (honors) may be available.
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

700 Introduction to Research in Consumer Sciences GRAD 3
Introduction to the research literature in consumer sciences; development of the principles of scholarly inquiry.
Au Qtr. 1 2.5-cr cl. Prereq: Grad standing or permission of instructor. Not open to students with credit for FmResM 738 or TxtlClo 777.01.

701 Individual and Family Behavior in the Market GRAD 4
Place
Students study consumer behavior in purchase of goods and services, with emphasis on applications to effective marketing management decisions from the consumer perspective.
Au Qtr. 1 3-hr cl. Prereq: Grad standing or permission of instructor.

702 Theories and Models in Consumer Sciences GRAD 4
Research
Survey of theories and models as the foundation for research in Consumer Sciences.
Wi Qtr. 1 3-cr cl. Prereq: Grad standing or permission of instructor.

703 The Global Consumer GRAD 4
Differences between consumers from different cultures/countries examined. The effect of such differences on consumers’ behavior is considered.
Sp Qtr. 2 1.5-cr cl. Prereq: Grad standing or permission of instructor.

739 Household Economic Status: Measurement and Analysis GRAD 4
Measurement and analysis of household economic status including key concepts, determinants, policy implications, and implications for research.
Au Qtr. 1 3-hr cl. Prereq: Grad standing. Not open to students with credit for FmResM 739.

740 Theories and Models of Family Resource Management GRAD 4
Management
Aspects of family life are examined from the perspective of family resource management theories; emphasis is placed on empirical implications of the theories.
Wi Qtr. 2 1.5-hr cl. Prereq: 739 or FmResM 739, and Econ 501 or 705 or equiv. Not open to students with credit for FmResM 740.

741 Managerial Concepts and Their Measurement GRAD 4
Tools and techniques which are applicable to resource allocation decisions in a specific household.
Sp Qtr. 2 2-Hr cl. Prereq: 739 or FmResM 739 and 740 or FmResM 740. Not open to students with credit for FmResM 741.

791 Research Practicum in Consumer Sciences 2-5
Supervised participation in research; involvement may include data collection and analysis or manuscript preparation; credit will be determined by involvement and level of responsibility.
Su, Au, Wi, Sp Quarters. Prereq: Grad standing, a research methods or statistics course, and permission of instructor. Supplements individual studies and facilitates students' ability to participate in research. Repeatable to a maximum of 20 cr hrs.

792 Teaching Practicum in Consumer Sciences 2-5
Supervised participation in college teaching; nature and degree of involvement are based on student's preparation; credit will be determined by involvement and level of responsibility.
Su, Au, Wi, Sp Quarters. Prereq: Grad standing, and permission of instructor. Supplements individual studies (FmResM 793) to facilitate students' ability to document their teaching experience. Repeatable to a maximum of 20 cr hrs.

793 Individual Studies 1-5
Problems in various phases of family resource management chosen for individual study.
Su, Au, Wi, Sp Quarters. 1 or more conf. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

797 Interdepartmental Seminar GRAD 2-4
Interdepartmental Seminar. Repeatable.
Consumer Sciences: Consumer & Family Financial Services

560 Family Financial Management III UGRD 5
Analyze and evaluate financial decisions by families at various points in family life cycle and apply economic principles to development of aids used by families facing financial decisions.
Au, Sp Qtrs. 2 2-hr cl. Prereq: 359 or FmResM 359. Open only to Consumer and Family Financial Services majors. Not open to students with credit for FmResM 560.

561 Retirement Planning and Employee Benefits UGRD 3
Evaluation of retirement plans and employee benefits with the consideration of the interwoven factors of Social Security, pension, private savings, and health insurance.
Au, Sp Qtrs. 3-1 hr cl. Prereq: 359 or FmResM 359. Not open to students with credit for FmResM 561.

567 Families in Business UGRD 3
Explore family business topics, including family dynamics, conflicts and relationships relative to business formation and growth, strategic management, professionalization, and succession.
Au, Sp Qtrs. 3 1-3 hr cl. Not open to students with credit for FmResM 567.

568 Intergenerational Resource Management UGRD 5
Key topics in planning for transfer of family estate, focusing on strategies that conserve family wealth while being consistent with family financial goals.
Wi, Sp Qtr. 2 1.5-hr cl. Prereq: 359 or FmResM 359. Not open to students with credit for FmResM 568.

611 Consumer Housing Problems UGRD 5
Production and allocation of housing and current housing problems. Includes service-learning experience related to data collection and analysis and neighborhood development.
* Sp Qtr. 2 2-hr cl. Prereq: ConSci 340 or FmResM 340 and Econ 200. Not open to students with credit for FmResM 611.

636 Group Leadership Practicum for Family Financial Management UGRD 5
Financial advising practicum. Students are group leaders for 360, conduct group sessions, assign tentative grades and write comments for presentations and reports.
Wi, Sp Qtr. 2 1-1.5 hr cl. Prereq: 260 or FmResM 260; FmResM 340 or ConSci 340; minimum of B+ in 360 or FmResM 360; permission of instructor. Not open to students with credit for FmResM 636.

644 Quantitative Methods in Consumer Affairs UGRD 5
Application of research methods and analysis of data to decision-making with respect to consumer affairs.
Wi, Sp Qtrs. 3 1-hr cl and 1 1/2-hr lab. Prereq: AEDEcon 205 or Stat 135 or 145, CSE 101 or 200 or 211, and 3rd year standing. Not open to students with credit for FmResM 644. Required for Consumer Services option.

660 Family Financial Management Application UGRD 5
Family financial management concepts are applied to evaluate financial goals and prepare a comprehensive financial plan for a family.
Wi, Sp Qtrs. 2 2-hr cl. Prereq: 359 or FmResM 359, 360 or FmResM 360 and 560 or FmResM 560; BusFin 420 or 420A. Open only to Consumer and Family Financial Services majors. Not open to students with credit for FmResM 660.

Consumer Sciences: Fashion and Retail Studies

200 Fashion, the Body, and Popular Culture UGRD 3
Fashion as it interfaces with the body and is manifested in popular culture, including television, film, advertising, magazines, literature, sports, dance, music, and comic art.
Au, Wi, Sp Qtrs. 2 1-1.5 hr cl. Not open to students with credit for FmResM 200.

270 Aesthetics of Appearance UGRD 3
The perception and presentation of the self through appearances. Considerations include aesthetic norms, color psychology, body image, personality expression, and context.
Au, Sp Qtrs. 2 1.5-hr cl and 1 2-hr lab. Not open to students with credit for FmResM 270.

271 Textiles UGRD 5
Fiber properties, yarn and fabric construction, color, and finishes as they relate to performance, care, and consumer satisfaction.
Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 2nd yr standing. Not open to students with credit for FmResM 271.

315 Interiors Product Development: Home Interiors UGRD 5
Evaluation, plan for use, and analysis of merchandising of interiors products for consumer use in home interiors.
Au Qtr. 2 1.5-hr cl, 2 2-hr lab. Prereq: 270 or FmResM 270. Not open to students with credit for FmResM 315.01 and 315.02 or 315.

370 Fashion Design and Illustration UGRD 5
Creative approach to the study of apparel design through fashion illustration using a variety of media, product development, and production specifications: student development portfolio.
Wi, Sp Qtrs. 1 2-hr cl, 2 2-hr labs. 2 hrs arr. Prereq: 270 or FmResM 270; 375 or TxtlClo 375. Not open to students with credit for TxtlClo 370. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

371 Textiles UGRD 5
Fiber properties, yarn and fabric construction, color, and finishes as they relate to performance, care, and consumer satisfaction.
Wi, Au, Sp Qtrs. 2 2-hr cl. Prereq: 2nd yr standing. Not open to students with credit for FmResM 371.

372 Appearance, Dress, and Cultural Diversity UGRD 5
A cross cultural study of the diversity and meaning of appearance and dress as manifestations of individual and group behavior, social organization, and cultural norms.
Wi, Sp Qtrs. 1.5-hr cl. Not open to students with credit for TxtlClo 372. GEC soc sci individuals and groups course. SS Admis Cond course.

374 Fashion Forecasting UGRD 3
An examination of fashion theories and the evolution of fashion in the 20th century applied to the merchandising of fashion.
Wi, Sp Qtrs. 2 1.5-hr cl. Prereq: 275 or TxtlClo 275. Not open to students with credit for TxtlClo 374 or 675.

375 Ready-to-Wear Analysis UGRD 3
Examination and evaluation of ready-to-wear apparel and its details for construction, style, quality, and fit.
Wi, Sp Qtrs. 2 1.5-hr cl. Prereq: 270 or TxtlClo 270 and 371 or TxtlClo 371. Not open to students with credit for TxtlClo 375. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

425.01 Interiors Product Development: Housing UGRD 3
Environmental Issues
Evaluation, plan for use and analysis of merchandising of products and designs of residential house structures.
* Sp Qtrs. 2 1.5-hr cl. Not open to students with credit for FmResM 425.01 or TxtlClo 425.01.

425.02 Interiors Product Development: Housing UGRD 2
Application
Application of evaluation and plan for use of products and designs used in residences. Students produce kitchen and bath designs.
Wi, Sp Qtrs. 2 2-hr cl. Prereq: 2 1.5-hr cl. Not open to students with credit for FmResM 425.02 or TxtlClo 425.02. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://register.osu.edu.

525 Retail Environments UGRD 5
Analysis of the influence of store environment characteristics on consumer behavior in various retail formats (i.e., in-store, internet, television, catalog).
Au, Wi, Sp Qtrs. 2 1.5-hr cl, 1 1-hr rec, 2 hrs arr. Prereq: 270, 372, ConSci 340. Not open to students with credit for FmResM 451 or 525. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://register.osu.edu.

571 Textile Product Quality Evaluation and Materials Sourcing UGRD 5
Parameters of textile quality, standards and specifications, interpretation of test data and evaluation of textiles, fabric sourcing.
Au, Sp Qtrs. 2 2-hr cl. Prereq: 371; Chem 102; Stat 133, 135, or 145; or permission of instructor.

576 Global Patterns and Issues in Textiles and Apparel Trade UGRD 3
International factors affecting the textiles and apparel industries and their impact on the economy and consumers.
Wi, Sp Qtrs. 2 1.5-hr cl. Prereq: 275 or TxtlClo 275, 371 or TxtlClo 371, or permission of Instructor. Not open to students with credit for TxtlClo 576.

577 Fashion and Retail Promotion UGRD 5
Contemporary models, concepts, and practices of image management, integrated marketing communications, media, and promotions from fashion industry perspectives.
Prereq: 275, 374, ConSci 543; 2nd level writing; or permission of Instructor.

589 Internship UGRD 15
One quarter supervised experience at a department approved intern site related to the student's selected option. Investigation and analysis of assigned problems.
Au, Sp, Wi Qtrs. Prereq: 2.5 cum-hr ratio, 4th yr standing, 995D, 16 hrs in major. Open to Fashion and Retail Studies majors only. No other courses may be taken nor any other jobs held during the quarter of internship. This course is graded S/U.

651 Residential Interiors: History of Design and Decoration UGRD 4
Analysis of furniture styles from antiquity through the present with emphasis on aesthetic, economic, and social implications as well as influencing philosophies.
* Wi Qtr. 3 1.5-hr cl. Not open to students with credit for FmResM 651 or TxtlClo 651. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://www.ureg.ohio-state.edu.
670 Computer-Aided Design in Apparel Product Development
Exploration of textile and apparel product development capabilities of computer-aided design and product specification systems used in industry; development of an apparel line. 
Au Qtr. 3 2-hr cl, 4 hr arr. Prereq: 270 or TxtlClo 270, 370 or TxtlClo 370, 375 or TxtlClo 375; Art Edu 252, and permission of instructor. Open to students in Product Dev & Eval option only. Not open to students with credit for TxtlClo 670. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

673 Product Data Management in Apparel Product Development
Exploration of software that facilitates apparel design from idea to manufacture through specifications, forms, and databases dealing with materials sourcing, grading, costing, construction, and labor. 
Sp Qtr. 3 2-hr labs, 4 hrs arr. Prereq: 270 or TxtlClo 270, 370 or TxtlClo 370, 371 or TxtlClo 371 or TxtlClo 375, 670 or TxtlClo 670, or permission of instructor. Open only to students in Product Development option. Not open to student with credit for TxtlClo 673. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

674 Twentieth Century Fashion
Chronological study of the rise of the twilight century fashion. Considers cultural and global forces related to development and changes in fashion and the fashion industry. 
Au, Wi Qtrs. 2 2-hr cl, Prereq: 371 or TxtlClo 371 and 3rd yr standing. Not open to students with credit for TxtlClo 672 or 674.

683 International Retailing
Study of retailers in several regions of world using expansion outside domestic market as strategy; social, legal and economic factors influencing internationalization. 
Au, Wi Qtrs. 2 2-hr cl. Prereq: 275, Acc/MIS 310 or 211, CSE 200; Math 130 or 148 or higher. Not open to students with credit for TxtlClo 683.

685.01 Merchandise Buying and Management
Retail buyer's role in merchandise management; decision-making, planning, control process, negotiating, buying and pricing. Analysis and synthesis of merchandising management practices and problems. 
Wi, Sp Qtrs. 2 2-hr cl. Prereq: 275, Acc/MIS 310 or 211, CSE 200, Math 130 or 148 or higher. Must be taken concurrently with 685.02.

685.02 Merchandise Buying and Management Technology
Use of industry technology/software for decision making, planning, and control of merchandise. 
Wi, Sp Qtrs. 1 cl. Prereq: 275, Acc/MIS 310 or 211, CSE 200, Math 130 or 148 or higher. Must be taken concurrently with 685.01. Not open to students with credit for TxtlClo 685.02.

690 Workshop: Clothing
Intensive study of a topic of common concern to the participants for 1 to 3 weeks. May be an off-campus or an on-campus full-time group meeting. 
Prereq: Written permission of instructor. Travel and subsistence costs for off-campus workshops will be borne by the student. Repeatable to a maximum of 12 or hrs. This course is graded S/U.

690 Workshop: Merchandising
Intensive study of a topic of common concern to the participants for 1 to 3 weeks. May be an off-campus or an on-campus full-time group meeting. 
Prereq: Written permission of instructor. Travel and subsistence costs for off-campus workshops will be borne by the student. Repeatable to a maximum of 12 or hrs. This course is graded S/U.

697 Study at a Foreign Institution
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. 
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 or hrs. This course is Progress (P) graded. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

698.01 Study Tour: Domestic
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details. 
Prereq: Permission of instructor. Repeatable for different titled study tours only. This course is graded S/U.

698.02 Study Tour: Foreign
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details. 
Prereq: Permission of instructor. Repeatable for different titled study tours only. This course is graded S/U.

698.03 Study Tour: New York
Concentrated on-site study of the fashion industry and apparel market with tours of laboratories designer's workshops, buying offices, and other related apparel/textile organizations. 
Sp Qtr. Prereq: Permission of instructor. Prereq: 19 or hrs of TxtlClo courses. Open only to TxtlClo majors. Repeatable to a maximum of 12 hrs. The workshop will occur during the week preceding the qtr the course is offered. Students are required to attend preparation meetings the qtr prior to the tour. Application deadline is first week of Wi Qtr. This course is graded S/U.

710 Aging and Design
Analysis and development of designs for products and environment related to residential spaces for older adults based on environmental adjustment theories. 
Au Qtr. 1 2.5-hr cl. Prereq: Grad standing or permission of instructor. Not open to students with credit for Afr/Rs M 720 or Afr/Med 720 or TxtlClo 720. Cross-listed in Allied Medicine.

722 Costume and Culture
National and regional dress in relation to culture, available resources, and technology. 
** Au Qtr. 2 3-hr cl. Prereq: 10 hrs at the 600 level and above, or written permission of instructor. Not open to students with credit for TxtlClo 772.

777.02 Research Methods
Introduction to methods currently in use in textiles, apparel, and merchandising research, with emphasis on the research process and proposal writing. 
Wi Qtr. Prereq: 777.01, or equiv with written permission of instructor. Not open to students with credit for TxtlClo 777.02.

793 Individual Studies
Problems in various phases of textiles and clothing related to individual's program. 
Su, Wi, Sp Qtrs. 1 or more conf. Prereq: Written permission of instructor. Repeatable to a maximum of 15 or hrs. This course is graded S/U.

870 Theories of Fashion
Theories underlying fashion change, and an analysis of fashion as a social and economic force. 
* Au Qtr. 1.25-hr cl. Prereq: Research methods or written permission of instructor; 12 or hrs at the 600 level and above. Not open to students with credit for TxtlClo 870.

872 History of American Dress: Critical Issues and Methods
An exploration of research in the History of American dress from the perspective of critical issues and methods. 
^ Sp Qtr. 1 hr cl. Prereq: permission of instructor. Not open to students with credit for TxtlClo 872.

874 Aesthetics: Appearance Management and Self Presentation
The aesthetics of dress as a medium of visual communication with analysis of appearance management strategies employed in the social presentation of self. 
Wi Qtr. 1.25-hr cl. Prereq: 1 course in social psychology and 1 course in art; 777.02 or TxtlClo 777.02. Not open to students with credit for TxtlClo 874.

875 Social Psychological Aspects of Clothing
A study of dress and adornment as they relate to human behavior. 
* Au Qtr. 2.1.5-hr cl or 1 2.5-hr cl. Prereq: 12 or hrs at the 600 level and above, 777.02 or TxtlClo 777.02 or written permission of instructor. Not open to students with credit for TxtlClo 875.

876 Textiles and Clothing Industries: Economic Appraisal
Impact of the textiles and clothing industries on the consumer and the economy. 
^ Wi Qtrs. 1 3-hr cl. Prereq: 576 or TxtlClo 576; Econ 201, or written permission of instructor. Not open to students with credit for TxtlClo 876.

878 History of Textiles
The development of textiles in prehistoric, ancient, medieval, and modern history, with special emphasis on Western European textiles. 
^ Sp Qtrs. 1 2.5-hr cl. hrs arr. Prereq: TxtlClo 672 or written permission of instructor. Not open to students with credit for TxtlClo 878.

879.02 Current Topics in Textiles and Clothing: Clothing
Analysis of current developments, issues, and trends in textiles, clothing, and merchandising; topics to be announced. 
^ Prereq: 12 or hrs at the 600 level and above, including research methods; or written permission of instructor. Repeatable to a maximum of 9 or hrs.

879.03 Current Topics in Textiles and Clothing: Merchandising
Analysis of current developments, issues, and trends in textiles, clothing, and merchandising; topics to be announced. 
Au, Sp Qtrs. Prereq: 12 or hrs at the 600 level and above, including research methods; or written permission of instructor. Repeatable to a maximum of 9 or hrs.

894 Group Studies
Selected topics in textiles and clothing. 
Prereq: Open to students who meet dept's stated prereq. Repeatable to a maximum of 10 or hrs.

993 Individual Studies
Problems in various phases of textiles and clothing related to individual's program. 
Su, Au, Wi, Sp Qtrs. 1 or more conf. Prereq: Written permission of instructor. Repeatable to a maximum of 15 or hrs. This course is graded S/U.

998 Research: Thesis
Research for master's thesis. 
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.
### Consumer Sciences: Hospitality Management

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Restrictions</th>
</tr>
</thead>
<tbody>
<tr>
<td>230</td>
<td>Introduction to Hospitality Management</td>
<td>UGRD 2</td>
<td>Overview of the hospitality-tourism industry. Introduction to and career exploration of various segments of the hospitality-tourism field.</td>
<td>Su, Wi, Sp Qtrs. Not open to students with credit for HospMgt 230.</td>
</tr>
<tr>
<td>350.01</td>
<td>Principles of Food Management: Hospitality Management</td>
<td>UGRD 5</td>
<td>Principles of food production management are presented. Scientific management principles involved in food management are discussed. Importance of food safety and changing food habits are presented. Principles of food management supported by real life commercial food service labs.</td>
<td>2 1.5-hr cl, 1-4 hr lab. Not open to students with credit for 350 or 350.02 or HospMgt 350.01.</td>
</tr>
<tr>
<td>350.02</td>
<td>Principles of Food Management: Dietetics and Family and Consumer Sciences Education</td>
<td>UGRD 4</td>
<td>Principles of food production management are presented. Scientific management principles involved in food management are discussed. Importance of food safety and changing food habits are presented. Principles of food management supported by real life commercial food service labs.</td>
<td>2 1.5-hr cl, 1-4 hr lab. Not open to students with credit for 350 or 350.01 or HospMgt 350.02.</td>
</tr>
<tr>
<td>370</td>
<td>Food and Beverage Management II: Menu Planning, Purchasing and Cost Controls</td>
<td>UGRD 5</td>
<td>A study of the impact of the menu, standardized recipe, forecast, and food purchasing on cost control and food quality. An overview of records related to cost control.</td>
<td>Au, Wi, Sp Qtrs. 2 1.5-hr cl. Prereq: HospMgt 350.01 or UGRD 350.01 and permission of instructor.</td>
</tr>
<tr>
<td>400</td>
<td>Beverage Management</td>
<td>UGRD 3</td>
<td>Discussion of the varieties, merchandising, and management control of alcoholic and non-alcoholic beverages served in the hospitality industry.</td>
<td>Au, Sp Qtrs. 2 1.5-hr cl. Prereq: HospMgt 230 or UGRD 400. Not open to students with credit for HospMgt 400 or HospMgt 400.</td>
</tr>
<tr>
<td>460</td>
<td>Personnel and Organization in Hospitality Management</td>
<td>UGRD 4</td>
<td>Principles of management applied to personnel in hospitality organizations.</td>
<td>Au, Wi Qtrs. 2 2-hr cl. Prereq: 230 or HospMgt 230. Not open to students with credit for HospMgt 350 or HospMgt 350.35.</td>
</tr>
<tr>
<td>551</td>
<td>Introduction to Employee Training in Foodservice Operations</td>
<td>UGRD 3</td>
<td>Planned experience under supervision in foodservice/restaurants.</td>
<td>Au, Wi, Sp Qtrs. 1 cl, 2 4.5-hr labs. Prereq: 230 or HospMgt 230, 350.01 or HospMgt 350 and 460. Open only to majors in hospitality management. Not open to students for credit for HospMgt 551. Required in major. Supervised experiential learning in a functioning work environment.</td>
</tr>
<tr>
<td>552</td>
<td>Introductory Internship: Lodging/Hotels</td>
<td>UGRD 3</td>
<td>Planned experience under supervision in lodging/hotel operations.</td>
<td>Su, Au, Wi, Sp Qtrs. 9 hrs wkly. Prereq: 230 or HospMgt 230, 350.01 or HospMgt 350 and 460. Open only to majors in hospitality management. Not open to students for credit for HospMgt 552. Required in major. Supervised experiential learning in a functioning work environment.</td>
</tr>
<tr>
<td>560</td>
<td>Hotel Systems I: Hotel Operations</td>
<td>UGRD 4</td>
<td>Introduction to the lodging industry and the hotel as a functioning system.</td>
<td>Au, Wi Qtrs. 2 2-hr cl. Prereq: 230 or HospMgt 230. Not open to students with credit for HumnNtr 560 or HospMgt 560.</td>
</tr>
<tr>
<td>561</td>
<td>Hotel Systems II: Hospitality Managerial Accounting</td>
<td>UGRD 4</td>
<td>An examination of the accounting and financial activities of a lodging establishment.</td>
<td>Wi, Sp Qtrs. 2 2-hr cl. Prereq: 560 or HospMgt 560, AcctMIS 310. Not open to students with credit for HospMgt 561 or HospMgt 561. The second in a two-course sequence.</td>
</tr>
<tr>
<td>570</td>
<td>Hospitality Management: Advanced Internship</td>
<td>UGRD 12</td>
<td>Planned experience in an entry-level supervisory role within the hospitality industry.</td>
<td>Su, Au, Wi, Sp Qtrs. Prereq: 551 or HospMgt 551 and 552 or HospMgt 552; permission of dept or instructor, 46th yr standing and 2.00 GPA. Not open to students with credit for HumnNtr 570 or HospMgt 570. Internship application must be filed in dept 2 qtr in advance.</td>
</tr>
</tbody>
</table>
### Consumer Sciences: Hospitality Management 105

#### 161 Dance and Theatre, 1945 to the Present  
**UGRD 5**  
Survey of contemporary practices in western dance and theatre from 1945 to the present, with emphasis on major stylistic trends, multicultural influences, and principal artists and their works. Su, Au, Wi. Sp Qtrs. 2 1.5-hr cl. 1 1-hr rec. Not open to students with credit for Arts/Col 161 or Theatre 161. Cross-listed in Theatre. GEC arts and hums VPA course. VPA Admis Cond course.

#### 200 Swan Lake to Hip Hop: Concert Dance History  
**UGRD 5**  
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. Wi, Su Qtrs. 3 1.5-hr cl. GEC arts and hums VPA course. VPA Admis Cond course.

#### 201.01 Introduction to Dance I: Modern Technique  
**UGRD 1-5**  
An introductory course in dance. VPA Admis Cond course. Repeatable to a maximum of 12 cr hrs.

#### 201.02 Introduction to Dance I: Ballet Technique  
**UGRD 1-5**  
An introductory course in dance. VPA Admis Cond course. Repeatable to a maximum of 12 cr hrs.

#### 201.03 Introduction to Dance I: Jazz  
**UGRD 1-5**  
An introductory course in dance. VPA Admis Cond course. Repeatable to a maximum of 12 cr hrs.

#### 201.05 Introduction to Dance I: Tap Technique  
**UGRD 1-5**  
An introductory course in dance. VPA Admis Cond course. Repeatable to a maximum of 12 cr hrs.

#### 201.06 Introduction to Dance I: Hip Hop Dance  
**UGRD 1-5**  
An introductory course in dance. 2 1.5-hr cl or 3 1.0-hr cl. VPA Admis Cond course. Repeatable to a maximum of 12 cr hrs.

#### 202.01 Introduction to Dance II: Modern Technique  
**UGRD 1-5**  
Continuation of 201. Prereq: 201.01 or permission of instructor. Repeatable to a maximum of 12 cr hrs.

#### 202.02 Introduction to Dance II: Ballet Technique  
**UGRD 1-5**  
Continuation of 201. Prereq: 201.02 or permission of instructor. Repeatable to a maximum of 12 cr hrs.

#### 202.03 Introduction to Dance II: Jazz  
**UGRD 1-5**  
Continuation of 201. Prereq: 201.03 or permission of instructor. Repeatable to a maximum of 12 cr hrs.

#### 202.04 Introduction to Dance II: Tap Technique  
**UGRD 1-5**  
Continuation of 201 and 202. Prereq: 202.02 or permission of instructor. Repeatable to a maximum of 12 cr hrs.

#### 211.01 Music Skills for Dance  
**UGRD 2**  
This course introduces the musical skills students will utilize throughout their careers as dancers. Au Qtr. Prereq: Qualifying audition or permission of instructor. Repeatable to a maximum of 6 cr hrs.

#### 211.03 Introduction to Dance Composition  
**UGRD 1-6**  
Introduction to Dance Composition. Sp Qtr. Arr. Prereq: Qualifying audition or permission of instructor. Repeatable to a maximum of 6 cr hrs. Including cr hrs earned in 211.03.

#### 211.04 Improvisation  
**UGRD 2**  
This course approaches improvisation in its broadest context. Improvisation teaches us to open ourselves to the unknown, to envision possibility and to recognize choices. Wi Qtr. Prereq: Qualifying audition or permission of instructor. Repeatable to a maximum of 6 cr hrs.

#### 260 Introduction to Dance and Technology  
**UGRD 3**  
Provides first year dance majors with foundation in technical skills of digital media that are directly applicable to the field of dance. Wi Qtr. 2 1.5-hr cl. Prereq: Admission to dance major or minor program.

#### 289.01 Field Experience: Introduction to Dance  
**UGRD 1-5**  
**Education**  
Survey of dance in public education: theoretical foundations and field-based experiences. Sp Qtr. Arr. Prereq: Qualifying audition or permission of instructor.

#### 289.02 Field Experience: Dance Education in Diverse Settings  
**UGRD 1-5**  
Survey of dance in diverse community settings: theoretical foundations and field-based experiences. Wi Qtr. Arr. Prereq: Qualifying audition or permission of instructor.

#### 289.03 Field Experience: Other Field Experience in Dance  
**UGRD 1-5**  
Directed field experience emphasizing appropriate teaching strategies for different educational and community settings. Su, Au, Wi. Sp Qtrs. Arr. for each cr hr 2 hrs/week in field placement. Prereq: Qualifying audition or permission of instructor. Repeatable to a maximum of 10 cr hrs.
106 Dance

290.01 Ethnic Dance Forms: Dance Forms of the African Diaspora UGRD 1-5
Folk forms as practiced by the African Diaspora.
Prereq: Qualifying audition or permission of instructor. Repeatable to a maximum of 6 cr hrs.
Including cr hrs earned in 190.01.

293 Individual Studies UGRD 1-5
Individually specified problems in the field of dance.
Su, Au, Wi, Sp Qtr. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

294 Group Studies UGRD 0-5
Group Studies.
Prereq: Permission of chairperson. Repeatable to a maximum of 15 cr hrs.

298 Dance Production UGRD 1-5
Production activities.
Wi, Sp Qtrs. Arr. Repeatable to a maximum of 15 cr hrs. Including cr hrs earned in 198.

299.04 Dance Performance: Student Choreographic UGRD 1-5
Projects
Student Choreographic Projects.
Open only to dance majors; others by special permission. Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

299.06 Dance Performance: Workshops UGRD 1-5
Workshops.
Open only to dance majors; others by special permission. Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

311.04 Dance Technique I: Modern Dance Technique UGRD 1-6
Part 1
Technique: modern dance and ballet level I.
Au Qtr. Arr. Prereq: Qualifying audition or permission of instructor. Open only to dance majors. Repeatable to a maximum of 9 cr hrs. Including cr hrs earned in 111.04.

311.05 Dance Technique I: Ballet Technique Part 1 UGRD 1-6
Technique: modern dance and ballet level I.
Au Qtr. Arr. Prereq: Qualifying audition or permission of instructor. Open only to dance majors. Repeatable to a maximum of 9 cr hrs. Including cr hrs earned in 111.05.

311.06 Dance Technique I: Modern Dance Technique UGRD 1-6
Part 2
Technique: modern dance and ballet level I, part 2.
Wi Qtr. Arr. Prereq: 311.04 or permission of instructor. Open only to dance majors. Repeatable to a maximum of 9 cr hrs. Including cr hrs earned in 111.06.

311.07 Dance Technique I: Ballet Technique Part 2 UGRD 1-6
Technique: modern dance and ballet level I, part 2.
Wi Qtr. Arr. Prereq: 311.05 or permission of instructor. Open only to dance majors. Repeatable to a maximum of 9 cr hrs. Including cr hrs earned in 111.07.

311.08 Dance Technique I: Modern Dance Technique UGRD 1-6
Part 3
Technique: modern dance and ballet level I, part 3.
Sp Qtr. Arr. Prereq: 311.06 or permission of instructor. Open only to dance majors. Repeatable to a maximum of 9 cr hrs. Including cr hrs earned in 111.08.

311.09 Dance Technique I: Ballet Technique Part 3 UGRD 1-6
Technique: modern dance and ballet level I, part 3.
Sp Qtr. Arr. Prereq: 311.07 or permission of instructor. Open only to dance majors. Repeatable to a maximum of 9 cr hrs. Including cr hrs earned in 111.09.

357 Dance in Popular Culture: Embodiment American UGRD 5
Identities, Ideas and Cultures
Popular dance in the United States, with an emphasis on how movement constructs identity and community.
Requires online component. GEC arts and hums cultures and ideas and social diversity in the US course.

367.01 Writing About Dance UGRD 1-5
Provides an opportunity to view, discuss, read, and write about contemporary dance through the practice of criticism. 367.01H may be available.
Au, Wi, Sp Qtrs. 2-2 hr cr. Prereq: English 110.xx or 111 or equiv. GEC second writing course.

367.01H Writing about Dance UGRD 1-5
Provides a rigorous opportunity to view, discuss, read, and write about contemporary dance and its history through the study and practice of criticism.
Wi Qtr. 2-2 hr cr. Prereq: Honors program or permission of department or instructor. English 110 or 111 or equiv. GEC second writing course.

400 Junior Advising Colloquium UGRD 1
The advising colloquium is the primary vehicle for mentorship and guidance for dance majors the junior year.
Au, Wi, Sp Qtrs. 3.5-5 hr mtgs per qtr. Only open to dance majors with jr standing. Repeatable to a maximum of 1 or 1 cr. This course is graded S/U.

411.04 Dance Technique II: Modern Dance Technique UGRD 1-6
Part 1
Technique: modern dance and ballet level II, part 1.
Au Qtr. Arr. Prereq: Qualifying audition or permission of instructor. Open only to dance majors. Repeatable to a maximum of 9 cr hrs. Including cr hrs earned in 214.04.

411.05 Dance Technique II: Ballet Technique Part 1 UGRD 1-6
Technique: modern dance and ballet level II, part 1.
Au Qtr. Arr. Prereq: Qualifying audition or permission of instructor. Open only to dance majors. Repeatable to a maximum of 9 cr hrs. Including cr hrs earned in 214.05.

411.06 Dance Technique II: Modern Dance Technique UGRD 1-6
Part 2
Technique: modern dance and ballet level II, part 2.
Wi Qtr. Arr. Prereq: 411.04 or permission of instructor. Open only to dance majors. Repeatable to a maximum of 9 cr hrs. Including cr hrs earned in 214.06.

411.07 Dance Technique II: Ballet Technique Part 2 UGRD 1-6
Technique: modern dance and ballet level II, part 2.
Wi Qtr. Arr. Prereq: 411.05 or permission of instructor. Open only to dance majors. Repeatable to a maximum of 9 cr hrs. Including cr hrs earned in 214.07.

411.08 Modern Dance Technique Part 3 UGRD 1-6
Technique: modern dance and ballet level III, part 1.
Au Qtr. Arr. Prereq: Qualifying audition or permission of instructor. Open only to dance majors. Repeatable to a maximum of 9 cr hrs. Including cr hrs earned in 214.08.

411.09 Dance Technique II: Ballet Technique Part 3 UGRD 1-6
Technique: modern dance and ballet level III, part 2.
Sp Qtr. Arr. Prereq: 411.07 or permission of instructor. Open only to dance majors. Repeatable to a maximum of 9 cr hrs. Including cr hrs earned in 214.09.

489 Internship in Dance UGRD 0-3
A cooperative education or internship assignment conducted under the supervision of a faculty member.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

511.04 Dance Technique III: Modern Dance Technique UGRD 1-6
Part 1
Technique: modern dance and ballet level III, part 1.
Au Qtr. Arr. Prereq: Qualifying audition or permission of instructor. Open only to dance majors. Repeatable to a maximum of 9 cr hrs. Including cr hrs earned in 314.04.

511.05 Dance Technique III: Ballet Technique Part 1 UGRD 1-6
Technique: modern dance and ballet level III, part 1.
Au Qtr. Arr. Prereq: Qualifying audition or permission of instructor. Open only to dance majors. Repeatable to a maximum of 9 cr hrs. Including cr hrs earned in 314.05.

511.06 Dance Technique III: Modern Dance Technique UGRD 1-6
Part 2
Technique: modern dance and ballet level III, part 2.
Wi Qtr. Arr. Prereq: 511.04 or permission of instructor. Open only to dance majors. Repeatable to a maximum of 9 cr hrs. Including cr hrs earned in 314.06.

511.07 Dance Technique III: Ballet Technique Part 2 UGRD 1-6
Technique: modern dance and ballet level III, part 2.
Wi Qtr. Arr. Prereq: 511.05 or permission of instructor. Open only to dance majors. Repeatable to a maximum of 9 cr hrs. Including cr hrs earned in 314.07.

511.08 Dance Technique III: Modern Dance Technique UGRD 1-6
Part 3
Technique: modern dance and ballet level III, part 3.
Sp Qtr. Arr. Prereq: 511.06 or permission of instructor. Open only to dance majors. Repeatable to a maximum of 9 cr hrs. Including cr hrs earned in 314.08.

511.09 Dance Technique III: Ballet Technique Part 3 UGRD 1-6
Technique: modern dance and ballet level III, part 3.
Sp Qtr. Arr. Prereq: 511.07 or permission of instructor. Open only to dance majors. Repeatable to a maximum of 9 cr hrs. Including cr hrs earned in 314.09.

600 Senior Advising Colloquium UGRD 1
The advising colloquium is the primary vehicle for mentorship and guidance for dance majors the senior year.
Au, Wi, Sp Qtrs. 3.5-5 hr mtgs per qtr. Only open to dance majors with sr standing. Repeatable to a maximum of 1 or 1 cr. This course is graded S/U.

601.01 Supplemental Studies in Dance: Modern Technique UGRD 1-5
Technique: modern dance and ballet level III, part 1.
Au Qtr. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

601.02 Supplemental Studies in Dance: Ballet Technique UGRD 1-5
Technique: modern dance and ballet level III, part 2.
Au Qtr. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

601.04 Supplemental Studies in Dance: Tap Dance UGRD 1-5
Technique: modern dance and ballet level III, part 3.
Au Qtr. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.
601.05 Supplemental Studies in Dance: Historical UGRD 1-5
Dance
Foundations in dance.
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.
601.06 Supplemental Studies in Dance: Jazz Dance UGRD 1-5
Foundations in dance.
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.
601.09 Supplemental Studies in Dance: Other UGRD 1-5
Foundations in dance.
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.
605 Dance Dynamics UGRD 3
Study of the dancer's dynamic energy.
Wi Qtr. 2 1.5-hr cl. Prereq: 645 or jr standing, or 845 and grad standing; or permission of instructor. Repeatable to a maximum of 6 cr hrs.
606 Space Design UGRD 3
The study of spatial forms in dance.
Su Qtr. 2 1.5-hr cl. Prereq: 620 and jr standing, or 820 and grad standing; or permission of instructor. Repeatable to a maximum of 6 cr hrs.
610 Issues in Videodance GRAD 3
An introduction to studies in dance on camera, exploring aspects of history, composition and technology as a foundation for videotape production.
Sp Qtr. 2 2-hr cl. Prereq: Dance major with jr standing or higher; or permission of instructor. Repeatable to a maximum of 6 cr hrs.
611.04 Dance Technique IV: Modern Dance Technique UGRD 1-6
Part 1
Technique: modern dance and ballet level IV, part 1.
Au Qtr. Prereq: Qualifying audition or permission of instructor. Open only to dance majors. Repeatable to a maximum of 9 cr hrs. Including cr hrs earned in 637.04.
611.05 Dance Technique IV: Ballet Technique Part 1 UGRD 1-6
Technique: modern dance and ballet level IV, part 1.
Au Qtr. Prereq: Qualifying audition or permission of instructor. Open only to dance majors. Repeatable to a maximum of 9 cr hrs. Including cr hrs earned in 637.05.
611.06 Dance Technique IV: Modern Dance Technique UGRD 1-6
Part 2
Technique: modern dance and ballet level IV, part 2.
Wi Qtr. Prereq: 611.04 or permission of instructor. Open only to dance majors. Repeatable to a maximum of 9 cr hrs. Including cr hrs earned in 637.06.
611.07 Dance Technique IV: Ballet Technique Part 2 UGRD 1-6
Technique: modern dance and ballet level IV, part 2.
Wi Qtr. Prereq: 611.05 or permission of instructor. Open only to dance majors. Repeatable to a maximum of 9 cr hrs. Including cr hrs earned in 637.07.
611.08 Dance Technique IV: Modern Dance Technique UGRD 1-6
Part 3
Technique: modern dance and ballet level IV, part 3.
Sp Qtr. Prereq: 611.06 or permission of instructor. Open only to dance majors. Repeatable to a maximum of 9 cr hrs. Including cr hrs earned in 637.08.
611.09 Dance Technique IV: Ballet Technique Part 3 UGRD 1-6
Technique: modern dance and ballet level IV, part 3.
Sp Qtr. Prereq: 611.07 or permission of instructor. Open only to dance majors. Repeatable to a maximum of 9 cr hrs. Including cr hrs earned in 637.09.
620 Dance Notation I UGRD 3
Basic principles of Labanotation; work in theory, readings, and writing using motif descriptions.
Sp Qtr. Prereq: 1 yr as dance major or permission of instructor.
621 Dance Notation II UGRD 3
Continuation of 620; emphasis on Labanotation.
Au Qtr. Prereq: 620 or permission of instructor.
622 Dance Notation III UGRD 3
Continuation of 621; emphasis on reading dance.
Wi Qtr. Prereq: 621 or permission of instructor. E622 may be available for honors embedded experience.
623 Advanced Notation UGRD 3
Advanced Labanotation.
Au, Wi Qtrs. Prereq: 622 or equiv with written permission of instructor. Repeatable to a maximum of 9 cr hrs.
624 Directing from Score UGRD 4
Methods of teaching and coaching a dance learned from a Labanotation score.
Sp Qtr. 1.5-hr cl. Prereq: 623. Repeatable to a maximum of 18 cr hrs.
632 Sound Design for Dance UGRD 2
This course will focus on how Music/Sound design techniques are used in composing for dance.
Wi, Sp Qtrs. Prereq: Open to dance majors and minors, or with permission of instructor. Repeatable to a maximum of 4 cr hrs.
633 Lighting for Dance UGRD 1-5
A study of stage lighting for dance; lectures, readings, and discussions.
Au, Wi, Sp Qtrs. Prereq: 198 or equiv. Repeatable to a maximum of 15 cr hrs.
634 Costume Design and Construction for Dance GRAD 3
Introduction to the art of costume design and costume construction specifically for dance. Repeatable to a maximum of 9 cr hrs.
645 Foundations in Dance Composition I UGRD 1-5
Foundations in Dance Composition I.
Au Qtr. Prereq: 111.03 or 311.03 or equiv. Open only to dance majors or by permission of instructor. Repeatable to a maximum of 12 cr hrs.
646 Foundations in Dance Composition II UGRD 1-5
Foundations in Dance Composition II.
Wi Qtr. Prereq: 645. Open only to dance majors. Repeatable to a maximum of 12 cr hrs.
648 Music and Choreography UGRD 5
Study of music suitable for choreographic purposes and the various approaches to the use of music in dance composition.
Sp Qtr. Prereq: Major in Dance.
651.01 Repertory: Existing Work UGRD 1-5
Experience in learning a dance.
Sp Qtr. Prereq: Qualifying audition or permission of instructor. Open only to dance majors. Repeatable to a maximum of 12 cr hrs.
651.02 Repertory: New Work UGRD 1-5
Experience in learning a dance.
Au Qtr. Prereq: Qualifying audition or permission of instructor. Open only to dance majors. Repeatable to a maximum of 12 cr hrs.
658 Early Ballet History UGRD 3
Survey of the history of ballet from the Renaissance to the later part of the 18th century.
Au, Sp Qtrs.
659 Modern Dance and Ballet in the US and Europe from the Twentieth Century to the Present UGRD 5
Rigorous survey of European and American concert dance from the early 20th century to the present.
Wi Qtr. 4 cl.
660.11 Dance and Technology: Digital Video Editing UGRD 3
Addressing practical skills in desktop non-linear digital video editing with particular attention to motion and action editing in dance.
Sp Qtr. 2 2-hr cl. Prereq: 260 or grad standing or permission of instructor. Repeatable to a maximum of 6 cr hrs.
660.12 Dance and Technology: Advanced Digital Video UGRD 3
Editing
Addressing in-depth skills in desktop non-linear digital video editing with particular attention to dance.
Au Qtr. 2 2-hr cl. Prereq: 660.11 or permission of instructor. Repeatable to a maximum of 6 cr hrs.
660.21 Dance and Technology: Media in Performance UGRD 3
Exploring the unique characteristics of performance that integrates movement and digital media through hands-on creative and technological projects.
Au Qtr. 2 2-hr cl. Prereq: Jr standing and 546.
661 Video Documentation of Dance UGRD 3
Introduction to the practice of videotaping live dance in rehearsal and performance situations.
Sp Qtr. 2 2-hr cl, additional hrs of fieldwork. Prereq: Dance major or minor with jr standing or above, or permission of instructor.
671.10 Somatic Practices: Kinesiology for Dance UGRD 3
Exploration of the skeleton and muscles for mechanical efficiency in movement, including principles of stability and motion as they relate to dance.
Sp Qtr. 2 1.5-hr cl, 1 lab. Prereq: Soph standing and EEOB 235 recommended. Not open to students with credit for 671.
671.20 Somatic Practices: Pilates Matwork UGRD 2
An integrated system of movement, breath, and experiential anatomical awareness that increases core strength, flexibility, and efficiency of movement.
Su, Au, Wi, Sp Qtrs. 2 1.5-hr cl. Repeatable to a maximum of 6 cr hrs.
671.21 Somatic Practices: Pilates Reformer UGRD 2
Improve neuro-skeletal performance, strength, flexibility; focusing on core; use of apparatus extends range from basic matwork.
Su, Au, Wi, Sp Qtrs. 2 1.5-hr cl. Prereq: 671.20 or permission of instructor. Repeatable to a maximum of 6 cr hrs.
671.22 Somatic Practices: Pilates Intermediate Reformer UGRD 2
Continuation of Pilates Reformer Dance 671.21, with more advanced sequences.
Su, Au, Wi, Sp Qtrs. 3 1.5-hr cl. Prereq: 671.21 or permission of instructor. Repeatable to a maximum of 6 cr hrs.
108  Dance

671.30 Somatic Practices: Floor Work  UGRD  2
Develop basic technical skills for dance and movement arts by isolating actions while lying on
the floor; includes anatomical study.
Su, Au, Wi, Sp Qtrs. 2 1.5-hr cl. Repeatable to a maximum of 6 cr hrs.

671.31 Somatic Practices: Yoga  UGRD  2
The practice of the course is designed to improve movement possibilities for dancers and
movement practitioners by concentrating on physical postures, breathing, and meditation.
Su, Au, Wi, Sp Qtrs. 3 1.5-hr cl. Repeatable to a maximum of 12 cr hrs.

671.32 Somatic Practices: Bartenieff Fundamentals  UGRD  2
Focuses on the process of extending the quality and range of the dancer's movement options
based on the work of Irmgard Bartenieff.
Su, Au, Wi, Sp Qtrs. 2 1.5-hr cl. Repeatable to a maximum of 6 hr hrs.

671.33 The Alexander Technique  UGRD  3
Familiarizes students with the Alexander Technique, specifically, but not limited to, performers.
Sp Qtr. Repeatable to a maximum of 12 cr hrs.

685  Experiencing Music Through Eurhythms  GRAD  3
To develop musical skills through listening, moving, rhythmic reading, class discussion,
improvisation, analysis and playing instruments.
Repeatable to a maximum of 9 cr hrs.

687.01 Dance for Children: Fundamentals of Children's  UGRD  5
Dance
Foundation for teaching dance to children.
Wi Qtr. 3 1.5-hr cl. Prereq: 289.01 and 289.02, or permission of instructor.

687.02 Dance for Children: Children's Dance in Educational Settings
Foundation for teaching dance to children.
Sp Qtr. 3 1.5-hr cl. Prereq: 214.08 and 287.01, or permission of dance ed coordinator.

688  Methods and Materials of Teaching Modern Dance  UGRD  3-5
Foundations for teaching: laboratory problems, lectures, readings, and discussions.
Au Qtr. Arr. Prereq: 214.08 or permission of instructor.

689  Directed Teaching Experience in Dance  UGRD  1-5
Directed to aid prospective teachers of dance in their development of essential teaching skills
in a variety of settings.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

690.04 Dance Performance: Student Choreographic Projects  UGRD  1-5
Prereq: Permission of chairperson. Open only to dance majors; others by permission of
chairperson. Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

690.06 Dance Performance: Workshops  UGRD  1-5
Prereq: Permission of chairperson. Open only to dance majors; others by permission of
chairperson. Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

691  Dance Practicum I  UGRD  1-5
Special applied projects for upper level dance majors.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of chairperson. Repeatable to a maximum of 30 cr hrs.

692  Workshop in Dance  UGRD  1-15
Concentrated study of dance and related areas; nature of workshop depends upon selected
emphasis.
* Su, Au, Wi, Sp Qtrs. Prereq: Written permission of workshop director. Repeatable to a
maximum of 15 cr hrs.

693.01 Individual Studies: Choreography  UGRD  1-20
Investigation of selected professional problems.
Prereq: 648. Repeatable to a maximum of 20 hr hrs in any combination of decimal subdivisions for undergrad or to a maximum of 30 cr hrs in any combination of decimal subdivisions for grad cr. Open only to dance majors. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

693.02 Individual Studies: Laban Studies  UGRD  1-20
Investigation of selected professional problems.
Prereq: Written permission of dance adviser or chairperson. Repeatable to a maximum of 20 cr hrs in any combination of decimal subdivisions for undergrad or and to a maximum of 30 cr hrs in any combination of decimal subdivisions for grad cr. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

693.03 Individual Studies: Research  UGRD  1-20
Investigation of selected professional problems.
Prereq: Written permission of dance adviser or chairperson. Repeatable to a maximum of 20 cr hrs in any combination of decimal subdivisions for undergrad or and to a maximum of 30 cr hrs in any combination of decimal subdivisions for grad cr. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

693.04 Individual Studies: Production  UGRD  1-20
Investigation of selected professional problems.
Prereq: Written permission of dance adviser or chairperson. Repeatable to a maximum of 20 cr hrs in any combination of decimal subdivisions for undergrad or and to a maximum of 30 cr hrs in any combination of decimal subdivisions for grad cr. Open only to dance majors. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

693.05 Individual Studies: Other  UGRD  1-20
Investigation of selected professional problems.
Prereq: Permission of chairperson. Repeatable to a maximum of 20 cr hrs in any combination of
decimal subdivisions for undergrad or and to a maximum of 30 cr hrs in any combination of
decimal subdivisions for grad cr. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

694  Group Studies  UGRD  1-5
Group Studies.
Prereq: Permission of chairperson. Repeatable to a maximum of 25 cr hrs.

699  Undergraduate Scholarship: Research and Creative Activity
This course is for undergraduate dance major students who are interested in pursuing a
scholarly activity under the guidance of an advisor. 699H (honors) may be available.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.
This course is graded S/U.

707  Laban Movement Analysis  GRAD  5
An examination of body articulation, spatial design, and qualities of movement in dance through
Laban-based theories.
Wi Qtr. 3 1.5-hr cl. Prereq: Dance major or permission of instructor. Repeatable to a maximum of
10 cr hrs.

711.04 Dance Technique V: Modern Dance Technique Part 1  UGRD  2
Technique: modern dance and ballet level V, part 1.
Au Qtr. Prereq: 611.08 or permission of instructor. Open only to dance majors. Repeatable to a
maximum of 12 cr hrs.

711.05 Dance Technique V: Ballet Technique Part 1  UGRD  2
Technique: modern dance and ballet level V, part 1.
Wi Qtr. Prereq: 611.05 or permission of instructor. Open only to dance majors. Repeatable to a
maximum of 12 cr hrs.

711.06 Dance Technique V: Modern Dance Technique Part 2  UGRD  2
Technique: modern dance and ballet level V, part 2.
Au Qtr. Prereq: 711.04 or permission of instructor. Open only to dance majors. Repeatable to a
maximum of 12 cr hrs.

711.07 Dance Technique V: Ballet Technique Part 2  UGRD  2
Technique: modern dance and ballet level V, part 2.
Wi Qtr. Prereq: 711.05 or permission of instructor. Open only to dance majors. Repeatable to a
maximum of 12 cr hrs.

711.08 Dance Technique V: Modern Dance Technique Part 3  UGRD  2
Technique: modern dance and ballet level V, part 3.
Sp Qtr. Prereq: 711.06 or permission of instructor. Open only to dance majors. Repeatable to a
maximum of 12 cr hrs.

711.09 Dance Technique V: Ballet Technique Part 3  UGRD  2
Technique: modern dance and ballet level V, part 3.
Sp Qtr. Prereq: 711.07 or permission of instructor. Open only to dance majors. Repeatable to a
maximum of 12 cr hrs.

748  Dance Theater Choreography and Performance  GRAD  3
Study of contemporary and historical dance theater choreography and performance practices
as a focus for student creative process.
Au Qtr. 2 1.5-hr cl. Prereq: Grad standing or permission of instructor.

749  Group Forms  GRAD  3
Composing group dances and exploring compositional devices and craft unique to group
choreography.
Sp Qtr. 3 1.5-hr cl. Prereq: 847 for grad students and 648 for undergraduate students; or
permission of instructor. Repeatable to a maximum of 6 cr hrs.

750  Choreography Workshop  UGRD  1-5
Choreographing and producing a dance in a performance setting.
Au, Wi, Sp Qtrs. Arr. Prereq: Grad standing or permission of instructor. Repeatable to a
maximum of 13 cr hrs.

753  Dance Criticism and Aesthetics  GRAD  3
Critical and aesthetic analysis of dance through the practices of discussion, viewing, reading
and writing.
Au Qtr. 3 1.5-hr cl. Prereq: Jr standing or above.

757  Dance in a Time of Turbulence: Ballet and Modern Dance 18th-20th Century  UGRD  5
Developments in western theatrical dance from the late eighteenth century until the end of
World War I.
Au Qtr. Prereq: Jr dance major or minor with permission of instructor; or grad standing.
759 Postmodernism in Dance

An inquiry into aesthetic points of view, beliefs, and assumptions inherent in dance practices and dance criticism from the 1960's to the present.

Wi Qtr. 2 1.5-hr cl. Prereq: 161, 200, 257, or 659; or ArtsCol 161; or Theatre 161; or permission of instructor.

760.01 New Ground I

Introduction to creative concepts in interactive performance; drawing from theories and practices in dance, theatre, architecture, art, computer science, research artistic practices in body/technology continuum.

Wi Qtr. 2 2-hr labs plus 8-15 hrs outside rehearsal. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

760.02 New Ground II

Application of foundation work from New Ground I in a creative laboratory; exploration of collaborative design for performance production in non-traditional environments.

Sp Qtr. 2 2-hr labs plus 8-15 hrs outside rehearsal. Prereq: 760.01 or permission of instructor. Repeatable to a maximum of 10 cr hrs.

760.03 New Ground III

The study of interactive installations and performance in the creation of technologically mediated environments.

Au Qtr. 2 2-hr labs plus 8-15 hrs outside rehearsal. Prereq: 760.02 or permission of instructor. Repeatable to a maximum of 10 cr hrs.

783H Honors Research

A program of research and/or dance investigation for each student with individual conferences resulting in an honors thesis or honors project.

Au, Wi, Sp Qtr. Arr. Prereq: 4th yr standing with a g.p.a. ratio of 3.50 in dance, permission of the instructor under whose supervision the work is to be completed, and the Honors Committee of either the College of the Arts or the College of Education. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

786 Student Teaching in Dance in Elementary Education

Observation, participation, and teaching in a public school; seminars and individual conferences.

Au, Wi, Sp Qtr. Arr. Prereq: 689 and permission of dance ed coordinator. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

787 Student Teaching in Dance in Secondary Education

Observation, participation, and teaching in a public school; seminars and individual conferences.

Au, Wi, Sp Qtr. Arr. Prereq: 689 and permission of dance ed coordinator. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

788 Student Teaching Seminar

Forum for discussing pedagogical issues and concerns encountered during the student teaching residency.

Au, Wi, Sp Qtr. 1.5-hr cl. Prereq: 289.01, 289.02, 687.01, 687.02, 688, and 689. Repeatable to a maximum of 2 cr hrs.

801.22 Seminar in Body-Mind Approaches

Introduction to body/mind practices as applied to dance, emphasis on Laban Movement Analysis.

Wi Qtr. 1.5-hr cl. Not open to students with 15 cr hrs in 801. Repeatable to a maximum of 8 hrs. Including cr hrs earned in 803 and 804.

801.30 Seminar in Dance History: The Black Continuum in American Dance

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 day.

Wi Qtr. 1.5-hr cl. Prereq: Grad standing or permission of instructor. Not open to students with 15 hrs in 801.

801.31 Current Issues in Dance and Performance Art

Discussion of current trends in dance and performance art in the context of contemporary issues in society and the arts.

Au Qtr. 2 1-hr cl. Prereq: 851.01, 659, 699.04 or 699.06, 759, 845, 846, and 847; or equivs. Not open to students with 15 hrs in 801. Repeatable to a maximum of 4 cr hrs.

801.51 Resources Seminar

Designed to meet the needs of graduate students entering the MA and MFA degree programs in dance.

Au Qtr. 1 cl. Not open to students with 15 cr hrs in 801. Repeatable to a maximum of 4 cr hrs.

801.61 Graduate Teaching Seminar

Introduces students to various theoretical and methodological approaches to dance pedagogy, as well as a range of topics about teaching in higher education.

Sp Qtr. Prereq: Grad standing in dance or permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

801.71 Performance Technique

An interdisciplinary seminar exploring the creative and practical aspects of performance through exercises, readings, and discussion.

Wi Qtr. 2 1.5-hr cl. Prereq: Grad standing in dance, theatre, or vocal performance; or permission of instructor. Not open to students with 15 cr hrs in 801. Repeatable to a maximum of 4 cr hrs.

801.81 Grant Writing Seminar

Creation of grant applications for the arts.

Wi Qtr. 1-hr cl. Prereq: Grad standing or permission of instructor. Not open to students with 15 cr hrs in 801.

801.91 Applied Technologies for Dance

Technology literacy for dancers introducing practical and creative applications of multimedia tools and fundamental computing skills.

Au Qtr. 2 2-hr cl. Prereq: Grad standing. Not open to students with 15 cr hrs in 801. Open only to grad students in the department of dance.

802 Choreographic Projects

Advanced choreographic projects.

Su, Au, Wi, Sp Qtr. Prereq: To a maximum of 25 cr hrs.

820 Labanotation I

Five-week study of motif writing/description and five-week elementary course in Labanotation.

Au Qtr. 3 1.5-hr cl.

821 Labanotation II

Continuation of 820.

Wi Qtr. 3.5 hr cl. Prereq: 820 or permission of instructor.

822 Labanotation III

Continuation of 821.

Sp Qtr. 3.5 hr cl. Prereq: 821 or permission of instructor.

823 Labanotation IV

Reading, analysis, and writing of complex movement ideas.

Au Qtr. 1.5 hr cl. Prereq: 821 or equiv. Repeatable to a maximum of 20 cr hrs.

845 Issues of Choreography I

Investigation of the choreographic process; emphasis on the dynamics of movement.

Wi Qtr. 2 1.5-hr cl. Prereq: Admission to grad program in dance or permission of instructor. Repeatable to a maximum of 6 cr hrs.

846 Issues of Choreography II

Continued investigation of the choreographic process; emphasis on structure.

Au Qtr. 3.5 hr cl. Prereq: 845 or permission of instructor. Repeatable to a maximum of 8 cr hrs.

847 Issues of Choreography III

Continued investigation of the choreographic process; emphasis on choreographic invention, structure, and context.

Au Qtr. 2 1.5-hr cl. Prereq: 846 or permission of instructor. Repeatable to a maximum of 6 cr hrs.

851 Graduate Performance Seminar

Rehearsal and performance of repertory designed for graduate students pursuing an MFA in Performance.

Au, Wi, Sp Qtr. 1.5-hr cl. Prereq: Admission to grad program in dance or permission of instructor. Repeatable to a maximum of 15 cr hrs.

860.01 Theories of Performance: The Body

Cross-disciplinary seminar in critical theory considering the body as flesh and bone and as a discursive entity.

Sp Qtr. 1 3-hr cl.

880 Research Methods in Dance

Introduction to a variety of methods appropriate to research in dance.

Wi Qtr. Prereq: Grad standing or permission of instructor. Required for all MA candidates in dance; MFA candidates who write a thesis.

983.01 Individual Studies in Dance: Choreography

Investigation of selected professional problems.

Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs in any combination of 30 cr hrs. This course is graded S/U.

983.02 Individual Studies in Dance: Laban Studies

Investigation of selected professional problems.

Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs in any combination of 30 cr hrs. This course is graded S/U.

983.03 Individual Studies in Dance: Research

Investigation of selected professional problems.

Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs in any combination of 30 cr hrs. This course is graded S/U.

983.04 Individual Studies in Dance: Production

Investigation of selected professional problems.

Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs in any combination of 30 cr hrs. This course is graded S/U.
100 Dental Hygiene Survey UGRD 1
Introduction to the University and the Dental Hygiene Program. University policies, procedures and resources; student rights and responsibilities; academic requirements; career and professional issues. Su, Au, Wi, Sp Qtrs. Repeatable. Prereq: Enrollment in DHY or permission of instructor. Not open to students with credit for other University survey courses numbered 100.

201 Oral Anatomy and Tooth Morphology UGRD 4
Morphology and physiology of human teeth and surrounding structures. Au Qtr. 2 cl. 1 recitation, 3 lab hrs. Prereq: DentHyg soph standing.

210 Human Nutrition and Oral Health UGRD 5
Introduction to the science of nutrition and dietetics as it pertains to general and oral health; emphasis on dental/nutritional assessment and nutritional education techniques. Prereq: Chem 101 or 121; 102 or 122; Biology 101 or 113; admission to DentHyg major.

223.01 Dental Hygiene Therapy I: Introduction to Periodontology UGRD 3
Understanding of the periodontium in relation to the etiology of periodontal disease, the formation of deposits on teeth and the recognition, classification, and prevention of periodontal disease. 3 cl. Prereq: 201, 295.

223.02 Dental Hygiene Therapy I: Pre-Clinic Laboratory UGRD 4
Introduces the dental hygiene student to procedures and techniques necessary to function as a co-therapist in providing initial dental hygiene therapy. 4-3 hr labs. Prereq: 201, 295.

224.01 Dental Hygiene Therapy II: Topics in Preventive Care for Dental Hygienists UGRD 2
Introduction and development of knowledge in appropriate use of preventive materials and techniques to arrest and control oral disease. 2 cl. Prereq: C- or higher in 223.01; Psych 100.

224.02 Dental Hygiene Therapy II: Transition to Clinical Care UGRD 4
Clinical application of the principles and technical procedures of client/patient management in the practice of dental hygiene. 1 cl, 4-3 hr lab or clinic. Prereq: 263, 264, C- or higher in 223.01 and 223.02; Psych 100; Anatomy, Preparatory or concur: Physical.

225 Dental Hygiene Elective Clinic I UGRD 1
An elective extension of Initial clinical experience in patient care. Emphasizing and reinforcing patient assessment and instrumentation. Su Qtr. 10 3-hr clinics. Prereq: 224.02. This course is graded S/U.

233 Oral Histology and Embryology UGRD 2
A study of the microscopic anatomy of the teeth and surrounding structures; the development of the teeth, oral cavity, and face.
Wi Qtr. 2 cl. Prereq: DentHyg 1st yr standing. Biology, Anatomy.

240 Introduction to General Pathology UGRD 2
An introduction to the basic principles of pathology and mechanisms of disease; the pathophysiology of common problems involving the various organ systems with emphasis on clinical manifestations.
Sp Qtr. 2 1-hr cl. Prereq: 233 and pre enr or concur: EEOB 232.

263 Oral Radiography UGRD 2
The theory and technical procedures of oral radiography. Wi Qtr. 2 cl. DentHyg 201 and soph standing.

264 Oral Radiography Laboratory UGRD 1
Oral radiography for dental hygienists. Wi Qtr. 3-hr lab. Prereq: DentHyg 201 and soph standing.

273 Dental Materials Laboratory UGRD 2
A study of the composition, chemical and physical properties, manipulation, and uses of various materials employed in the practice of dentistry.
Sp Qtr. 2 3-hr labs. Prereq: DentHyg 1st yr standing and Chem 102 or Chem 122. Not open to students with credit for 372.

295 Introduction to Dental Hygiene UGRD 1
Introduction to the historical, professional, legal, and ethical aspects of dental hygiene.
Au Qtr. 1 cl. Prereq: Dent Hyg soph standing.

301 Local Anesthesia UGRD 1
Survey of commonly used dental office techniques for managing patient anxiety and pain. Topics include local anesthesia and behavioral management of patients. Wi Qtr. Prereq: 201, 321.01.

321.01 Dental Hygiene Therapy III: Intermediate Clinical Dental Hygiene Therapies UGRD 3
Dental hygiene seminar and application of periodontal therapies and adjunctive procedures for clinical dental hygiene treatment, including ethics, medical emergencies, OSHA, Dental Implants, Root Planing/Curettage. 3 cl. Prereq: 224.01, 224.02, 240, 250, and 273.

321.02 Dental Hygiene Therapy III: Clinical Dental Hygiene Therapies UGRD 3
Ongoing clinical experience with emphasis on development of fundamental clinical skills. 1 cl, 9 hrs clinic. Prereq: 224.01, 224.02, 240, 250, and 273.

321.02 Dental Hygiene Therapy IV: Supportive Periodontal Therapy UGRD 2
Prepares the student to provide long term monitoring and supportive therapy for periodontally compromised patients in dental practice settings. 2 cl. Prereq: 321.01, 321.02, 322.01, 321.03, 330, 338, 341, 380.

322.02 Dental Hygiene Therapy IV: Clinic UGRD 3
Continuation of clinical development in total patient care. Additional patient treatment modalities are included. 1 cl, 9 hrs clinic. Prereq: 321.01, 321.02, 321.03, 330, 338, 341, 380.

323.02 Dental Hygiene Therapy V: Outcomes of Patient Care UGRD 1
Case presentation and literature review are used to develop analytical skills to examine outcomes of patient care. Students prepare case analysis for peer and faculty evaluation.
1 cl. Prereq: 301, 322.01, 322.02, 383.

323.02 Dental Hygiene Therapy V: Clinic UGRD 3
Ongoing clinical experience with emphasis on application of clinical techniques on a variety of patients.
1 cl, 9 hrs clinic. Prereq: 301, 322.01, 322.02.

325 Dental Hygiene Elective Clinic II UGRD 1
An elective extension of the clinical experience in patient care. Emphasizing refining skills taught in previous clinical courses. Su Qtr. 10 3-hr clinics. Prereq: 323.02. This course is graded S/U.

330 Care for Patients with Special Needs UGRD 2
Development of background to facilitate recognition of the special-needs patient and techniques in dental hygiene care for this population.
Sp Qtr. 1 2-hr cl. Prereq: DentHyg j standing or permission of instructor.

331 Pharmacology UGRD 3
A study of pharmacology including the biochemical basis of drugs used in dentistry which have implications for dental patients and the application of pharmacological agents for specific usage.
Wi Qtr. 3 cl. Prereq: 225.01, 240, and EEOB 232.

333 Introduction to Teaching Dental Hygiene UGRD 1
Introduction to the fundamentals of teaching and learning in a dental hygiene curriculum. Sp Qtr. 1 cl. Prereq: 224.01, 224.02.

334 Didactic Teaching within the Dental Hygiene Profession UGRD 4
Didactic teaching roles and strategies utilized by dental hygiene professionals in academic setting; underlying theory of learning and teaching.
Sp Qtr. Prereq: Enrollment in DHY major.
111 Dental Hygiene

Dental Hygiene 111

Continuation of clinical patient care with emphasis on time management. Patient care parameters are expanded.
Su Qtr. 1 hr clinic. Prereq: 323.01, 323.02, 362, 373.

412.01 Dental Hygiene Therapy VII: Analysis and Interpretation of Research in Oral Health Care
UGRD 2
Analysis of current oral health research with emphasis on interpretation of research findings and strength of evidence.
Au Qtr. 1 2-hr cl. Prereq: 383.

412.02 Dental Hygiene Therapy VII: Clinical
UGRD 3
A final clinical experience incorporating all previously acquired knowledge, techniques, and procedures.
Wi Qtr. 1 9 hrs clinic. Prereq: 411.02.

413 Dental Hygiene Therapy VIII
UGRD 1
Clinical application and evaluation of results of dental hygiene therapy. A continuation of previous clinic courses.
Sp Qtr. 1 cl or 1 3-hr clinic. Prereq: 412.01, 412.02.

420 Oral Radiography and Interpretation
UGRD 1
Interpretation of radiographic normal anatomic structures and pathologic entities; radiation hygiene.
Wi Qtr. 1 cl. Prereq: 263 or Dent 545 and DentHyg 264, DentHyg sr standing. Not open to students with credit for 320.

450 Expanded Functions Clinic II
UGRD 2
A continuation of 352.
Au Qtr. 6 clinic hrs. Prereq: 352.

451 Expanded Functions Clinic III
UGRD 2
A continuation of 450.
Wi Qtr. 6 clinic hrs. Prereq: 450.

452 Expanded Functions Seminar
UGRD 2
Seminar on current expanded functions practice management techniques and current law in Ohio including practical experiences in preparation for Ohio Expanded Functions Qualifying Examination.
Sp Qtr. 1 cl. 1 2-hr lab. Prereq: 451.

461 Nitrous Oxide Sedation
UGRD 1
Review of dental office techniques and behavioral management of patients with anxiety and pain; use of nitrous oxide sedation for anxiety and pain management.
Wi Qtr. Prereq: 201 and 301.

485 Current Concepts in the Practice of Dental Hygiene
UGRD 2
Seminar designed to assist students with legal, ethical, and philosophical concerns of the dental hygienist as a contemporary health care professional.
Sp Qtr. 2 hrs lecture. Prereq: 3rd yr standing in BSDH program. GEC course.

486 Practicum in Dental Hygiene
UGRD 1-6
Supervised practice outside the traditional clinic in a setting similar to the one in which the dental hygiene student may practice, teach, or conduct research upon graduation.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Sr standing in DentHyg. Repeatable to a maximum of 6 or hrs.
This course is graded S/U.

488 Integrated Clinical Dental Hygiene Science Review I
UGRD 1
Integration and review of all areas of dental hygiene related to dental hygiene practice. Application of analytical skills to case analysis.
Au Qtr. 1 cl. Prereq: 383, 323.01, 323.02.

489 Integrated Clinical Dental Hygiene Science Review II
UGRD 1
Continuation of 488.
Wi Qtr. 1 cl. Prereq: 488, 411.02, 412.01.

521 Current Periodontal Treatment Issues
UGRD 3
Current concepts in etiology, risk factors, assessment, treatment planning, implementation and evaluation of contemporary periodontal treatment modalities and maintenance therapy; investigation of periodontal literature.
Au Qtr. 3-hr cl. Prereq: Enrollment in Dental Hygiene Baccalaureate Degree Completion Program.

693 Individual Studies in Dental Hygiene
UGRD 1-5
Advanced studies in any relevant area of dental hygiene.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission. Repeatable to a maximum of 15 or hrs.
This course is graded S/U.

694 Group Studies in Dental Hygiene
UGRD 1-5
Group studies in special dental hygiene areas.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission. Repeatable to a maximum of 15 or hrs.

Dentistry

335 Clinical Teaching Methodology
UGRD 4
Preparation for teaching dental hygiene in the laboratory, pre-clinic and clinic settings. Au Qtr. Prereq: Enrollment in DHy major.

336 Dental Health Education Within Dental Hygiene Practice
UGRD 4
Provides the dental hygienist with advanced skills to help patients achieve good oral health. Lecture and discussion with emphasis on clinical application and evaluation.
Wi Qtr. Prereq: Jr or sr standing in Dental Hygiene. Distance Learning Course (Web taught).

338 Pediatric Dentistry
UGRD 2
Lectures, laboratory, and clinical exercises to prepare students to provide for the pediatric patient.
Au Qtr. 3 cl, 2 lab hrs. Prereq: Jr standing.

340 General Pathology, Pharmacology and Medicine for Dental Hygiene
UGRD 4
Review of common medical conditions affecting adult dental patients including implications for dental hygiene practice; attention to pathophysiology and clinical medicine of multiple organ systems.
Au Qtr. Prereq: 224.02.

341 Introduction to Oral Diagnosis
UGRD 2
Introduction to the diagnostic process; pathogenesis, and symptomatology and treatment of oral disease.
Au Qtr. 2 cl. Prereq: 240.

345 Dental Hygiene Special Needs Clinic
UGRD 1
Clinical application of the philosophy and techniques of dental hygiene therapy with emphasis on recognizing special needs and providing appropriate treatment options for patients with special needs.
Au, Wi, Sp Qtrs. 3 hrs clinic. Prereq: 321.02. Repeatable to a maximum of 3 or hrs.

351 Restorative Dentistry II
UGRD 5
Theory and technical procedures in restoration with compound cavity preparations (amalgam, alloy filled restorations) and procedures utilized by advanced qualified personnel in basic and advanced restorative dentistry.
Su Qtr. 3 cl, 6 lab hrs. Prereq: Successful completion of 250.

352 Expanded Functions Clinic I
UGRD 2
Clinical application of expanded function duties permitted by law.
Su Qtr. 6 clinic hrs. Prereq or conc: 351.

373 Dental Materials for Dental Hygienists
UGRD 2
A study of the composition, chemical and physical properties, manipulation, and various materials employed in the practice of dentistry.
Sp Qtr. 1 2-hr cl. Prereq: 273.

380 Community Dental Health
UGRD 2
Development of the knowledge, attitudes, skills and behaviors necessary to promote dental health and prevent dental disease through organized community efforts.
Au Qtr. 2 cl. Prereq: 295.

380E Community Dental Health
UGRD 2
Development of the knowledge, attitudes, skills and behaviors necessary to promote dental health and prevent dental disease through organized community efforts.
Au Qtr. 2 cl. Prereq: 295.

383 Introduction to Research and Statistical Methods
UGRD 5
Methods utilized in community health research, including study design, sampling, data collection, and the use of statistical tools in the interpretation of quantitative data.
Sp Qtr. 4 1-hr cl, 1 2-hr lab; or computer lab. Prereq: DentHyg jr standing. GEC data analysis course.

384 Dental Hygiene Care for the Mentally Retarded and Developmentally Disabled
UGRD 1-5
Various handicapping conditions and any oral manifestations; management techniques and practice in a clinical setting; comprehensive on-going follow-up in the group home setting.
Au, Wi, Sp Qtrs. 1 cl and arr. Prereq: 223, DentHyg 2nd yr standing, and permission of instructor.

401 Leadership, Management, and Business Concepts in Dental Hygiene Care Delivery
UGRD 2
Economic, management and employment issues dental practices. Development of skills needed to integrate and manage current standards of dental hygiene care within existing practices and alternative career settings.
Prereq: Admission to Dental Hygiene Baccalaureate Degree Completion Program. Not open to students with credit for 401.

405 Dental Hygiene Career Management
UGRD 3
Economic, management and employment issues; development of skills to integrate and manage current standards of dental hygiene care within existing practices and alternative career settings.
Prereq: Admission to Dental Hygiene Baccalaureate Degree Completion Program. Not open to students with credit for 401.

411.01 Dental Hygiene Therapy VI: Advanced Topics in Periodontology
UGRD 2
A continuation of 321.03; includes the most recent advances in periodontal therapy, case studies and a review of the literature.
2 cl. Prereq: 323.01, 323.02, 362, 373. Prereq: 321.03.
112 Dentistry

413 Integrated Basic Science Review DENT 2
Review and apply basic science concepts in context of clinical experiences.
Sp Qtr. Prereq: Dent 2nd yr standing. This course is graded S/U.

415.01 Introduction to Clinical Dentistry: Lecture DENT 3
Didactic introduction to aspects of patient care that will allow students to effectively observe and assist with treatment.
Au Qtr.

415.02 Introduction to Clinical Dentistry: Laboratory DENT 1
Laboratory and clinical introduction to essential aspects of patient care.
Au Qtr. This course is graded S/U.

416 Introduction to Clinical Dentistry DENT 2
The second in a series of courses which focus on acquisition of knowledge and skills that are basic to providing clinical dentistry treatment.
Wi Qtr. 1 cl, 2 clinic. This course is graded S/U.

417 Oral Anatomy DENT 3
Anatomy of the oral region, dental morphology with laboratory experience.
Au Qtr. 2 cl, 3 lab hrs. Prereq: Dent 1st yr standing.

423 Clinical Evaluative Sciences I DENT 2
Introduction to clinical evaluative sciences. Use of evidence in decision making and applying critical thinking based on objective criteria to the evaluation of clinical practice.
Wi Qtr. 2 cl. Prereq: Dent 1st yr standing.

424 Clinical Evaluative Sciences II DENT 2
Methodological and diagnostic tools applicable to evaluation of oral health care for populations and individual patients. Use of systematic measures for quantifying care quality.
Sp Qtr. 2 cl. Prereq: Dent 1st yr standing.

425 Introduction to Practice Management DENT 1
Introduction to basic concepts of finance and business management as related to dental practice management.
Au Qtr. 1 cl.

427 Introduction to Clinical Dentistry DENT 2
The continuation of a series of courses which focus on acquisition of knowledge and skills that are basic to providing clinical treatment.
Sp Qtr. 2 cl. Prereq: Dent 1st yr standing.

430 Restorative Dentistry DENT 3
Overview of disease processes and procedures performed by general dentists and factors that determine appropriate treatment.
Au Qtr. 2 cl, 3 lab hrs. Prereq: Dent 1st yr standing.

432 Restorative Dentistry DENT 3
Principles and techniques for inlay, MOD onlay, and complete veneer crown preparation.
Wi Qtr. 1 cl, 6 lab hrs. Prereq: Dent 1st yr standing.

433 Restorative Dentistry DENT 2
Introduction to occlusion, emphasizing form and function; the occlusal role of posterior teeth in mandibular movement is stressed. Includes waxing exercises.
Wi Qtr. 1 cl, 3 lab hrs. Prereq: Dent 1st yr standing.

434 Restorative Dentistry DENT 3
Continuation of 432.
Sp Qtr. 1 cl, 6 lab hrs. Prereq: Dent 1st yr standing.

482 Removable Complete Prosthodontics DENT 2
Fabrication of complete dentures: impression making, cast mounting, arranging artificial teeth, processing acrylic resin and finishing, polishing, and completing dentures.
Au Qtr. Prereq: Dent 2nd yr standing.

489.01 Removable Partial Prosthodontics: Lecture DENT 1
An introduction to the principles of design and construction of removable partial dentures.
Wi Qtr. 1 cl. Prereq: Dent 2nd yr standing.

489.02 Removable Partial Prosthodontics: Laboratory DENT 1
Laboratory.
Wi Qtr. 4 lab hrs. Prereq: Dent 2nd yr standing.

500 Community Based Dental Education DENT 2
Clinical experience at external clinic sites.
Su Qtr. 6 clinic hrs. Prereq: Dent 4th yr standing. Community based.

501 Community Based Dental Education DENT 2
Clinical experience at external clinical sites.
Au Qtr. 6 clinic hrs. Prereq: Dent 4th yr standing. Community based.

502 Community Based Dental Education DENT 2
Clinical experience at external sites.
Wi Qtr. 6 clinic hrs. Prereq: Dent 4th yr standing. Community based.

503 Community Based Dental Education DENT 2
Clinical experience at external clinical sites.
Sp Qtr. 6 clinic hrs. Prereq: Dent 4th yr standing. Community based.

505 Fundamental Principles of Oral Surgery DENT 2
Basic principles of oral surgery; patient evaluation and management, surgical instrumentation theory and technique for infection control, teeth extraction, and restorative preparation.
Sp Qtr. 1 cl. Prereq: Dent 2nd yr standing.

507 Cultural Competency DENT 1
Information important in caring for patients with diverse ethnic, racial and cultural backgrounds.
Sp Qtr. 1 cl.

510 Oral Biology DENT 4
Wi Qtr. 4 cl. Prereq: Dent 1st yr standing.

514 Oral Biology DENT 4
Integrated craniofacial biology: oral structure and function and wound healing.
Sp Qtr. 4 cl. Prereq: Dent 1st yr standing.

516 Oral Microbiology DENT 2
Microbiology of the oral cavity and its relationship to caries, pulpal and periapical infections and periodontal disease.
Au Qtr. 2 cl. Prereq: Dent 2nd yr standing.

522 Clinical Geriatric Dentistry DENT 1
Delivery of clinical dental care to elderly populations at nursing homes and geriatric clinics.
Su, Au, Wi, Sp Qtrs. 1 day per week.

531 Restorative Dentistry DENT 2
Theory, principles, and procedures for tooth preparations to receive posterior metal ceramic crowns; includes the fabrication of a metal ceramic fixed partial denture.
Su Qtr. 1 cl, 3 lab hrs. Prereq: Dent 2nd yr standing.

532 Restorative Dentistry DENT 2
Functional and cosmetic aspects of anterior teeth; continuing of the study of mandibular movement.
Sp Qtr. 1 cl, 3 lab hrs. Prereq: Dent 2nd yr standing.

533 Restorative Dentistry DENT 2
Operative Dentistry I.
Wi Qtr. 1 cl, 3 lab hrs. Prereq: Dent 1st yr standing.

534 Restorative Dentistry DENT 2
Operative Dentistry II.
Sp Qtr. 1 cl, 3 lab hrs. Prereq: Dent 1st yr standing.

535 Restorative Dentistry DENT 3
Theory, principles, and techniques for anterior tooth preparations to receive aesthetic crowns and fixed partial dentures.
Au Qtr. 2 cl, 2-4 lab hrs. Prereq: Dent 2nd yr standing.

536.01 Restorative Dentistry I DENT 2
Theory and technique for the restoration of endodontically treated teeth.
Su Qtr. 4 lecture/lab hrs. Prereq: Dent 2nd yr standing.

536.02 Restorative Dentistry II DENT 1
Theory and technique for fabricating metal and ceramic restorations.
Su Qtr. 3 lecture/lab hrs. Prereq: Dent 3rd yr standing.

537 Restorative Dentistry DENT 1
Theory, principles, and techniques for restoring atypically damaged single teeth with directly placed and cast materials.
Wi Qtr. 1 cl, 3 lab hrs. Prereq: Dent 2nd yr standing.

538 Restorative Dentistry DENT 2
Complex esthetic restorations, diagnosis, treatment planning and care delivery including diastema closures, resin and porcelain veneers, ceramic and composite inlays, intracoronal restorations, onlays.
Au Qtr. Prereq: Dent 3rd yr standing.

539 Operative Dentistry DENT 1
Competency exam in operative dentistry techniques.
Sp Qtr. Arr clinic. Prereq: Dent 2nd yr standing.

540 Restorative Dentistry DENT 2
A continuation of Dent 535.
Sp Qtr. 1 cl, 3 lab hrs. Prereq: Dent 2nd yr standing. This course is Progress (P) graded. This is the last course in a Progress series with Dent 535.

544 Physical Evaluation DENT 2
Basic and current concepts in dental management of ambulatory patients with compromised medical systems; diagnosis and management of common dental office emergencies.
Sp Qtr. 2 cl. Prereq: Dent 2nd yr standing.

545 Diagnostic Sciences I DENT 2
Dental radiology.
Su Qtr. 2 cl. Prereq: Dent 2nd yr standing.

548 Diagnostic Sciences II DENT 3
Oral diagnosis, radiology, and pathology; radiographic techniques and interpretation; clinical appearance and diagnosis of normal and non-normal oral anatomy.
Wi Qtr. 3 cl. Prereq: Dent 2nd yr standing.
551 Pediatric Dentistry  DENT  2
Introduction to pediatric dentistry emphasizing prevention, diagnosis and treatment of dental caries and pulp therapy. Laboratory techniques required for sealants, restorations and pulpotomy.
Wi Qtr. 1 cl, 4 lab hrs. Prereq: Dent 2nd yr standing.

564 Periodontology  DENT  3
Diagnosis etiology and activity of periodontal diseases; biology and pathophysiology of the disease process.
Au Qtr. 3 cl. Prereq: Dent 2nd yr standing.

565 Periodontology  DENT  3
Examination treatment planning and instrumentation of the periodontal diseased patient; clinical and interdisciplinary management of periodontal diseases.
Sp Qtr. 2 cl, 6-3 hr clinics. Prereq: Dent 2nd yr standing.

567 Endodontics  DENT  1
Basic techniques and procedures used in the treatment of pulpless teeth.
Wi Qtr. 1 cl. Prereq: Dent 2nd yr standing.

568 Endodontics  DENT  1
Laboratory experience in endodontics.
Su Qtr. Arr. Prereq: Dent 3rd yr standing. This course is graded S/U.

569 Endodontics  DENT  1
The rationale and prognosis of endodontic procedures; application of treatment techniques peculiar to endodontics, including radiography, intracanal preparations, and root fillings.
Sp Qtr. 1 cl. Prereq: Dent 3rd yr standing.

571 Pharmacology  DENT  3
Pharmacology for dental students I.
Wi Qtr. 3 cl. Prereq: Dent 2nd yr standing.

572 Pharmacology for Dental Students  DENT  3
Pharmacology for dental students II.
Sp Qtr. 3 cl. Prereq: Dent 2nd yr standing.

579 Local Anesthesiology  DENT  1
The theory, chemistry, and techniques of local anesthesia for dental procedures.
Wi Qtr. 1 cl. Prereq: Dent 2nd yr standing.

587 Removable Partial Prosthodontics  DENT  3
Removable Partial Dentures II.
Su, Sp Qtr's. Prereq: Dent 3rd yr standing.

589 Removable Partial Prosthodontics  DENT  1
The advanced principles and design of removable partial dentures and their clinical applications
Su Qtr. 1 cl. Prereq: Dent 3rd yr standing.

593 Individual Studies  DENT  1-12
Individual studies in any of the recognized fields of dentistry.
Su, Au, Wi, Sp Qtr's. Repeatable. This course is letter graded.

600 Early Clinic Experience  DENT  2
Early clinic experience including observation, assisting and limited care delivery.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

603 Temporomandibular Disorders  DENT  1
Overview of non-dental pain in head and face emphasizing temporomandibular disorders. Includes pain neurophysiology, management principles, working diagnosis and initial management or referral.
Wi Qtr. 1 cl. Prereq: Dent 3rd yr standing.

604 Physiology for Dental Students I  DENT  4
General physiology for dental students one.
Au Qtr. 4 cl. Prereq: Dent 2nd year standing. Taught in conjunction with general physiology for dental students two.

605 Physiology for Dental Students II  DENT  4
General physiology for dental students two.
Wi Qtr. 4 cl. Prereq: Dent 2nd year standing. Taken in conjunction with general physiology one.

606 Biochemistry for Dental Students I  DENT  4
General biochemistry for dental students one.
Au Qtr. Prereq: Dent 1st year standing.

607 Biochemistry for Dental Students II  DENT  4
Survey of biochemistry for dental students two.
Wi Qtr. Prereq: Dent 1st year standing. Survey of Biochemistry for DDS program students.
Second course in a series.

612 Dental Pharmacology  DENT  1
Focus on pharmaceutical agents that are used in the practice of dentistry and agents that may interact with drugs or procedures used in clinical practice.
Prereq: Dent 3rd year standing.

616 Clinical Primary Care Dentistry  DENT  7
Clinical experience in primary care dentistry including diagnosis, prognosis, treatment planning, care delivery and evaluation.
Su Qtr. 4 clinic hrs/credit hr. Prereq: Dent 3rd yr standing. This course is Progress ("P") graded. Credit will be awarded upon completion of 617.

617 Clinical Primary Care Dentistry  DENT  8
Clinical experience in primary care dentistry including diagnosis, prognosis, treatment planning, care delivery and evaluation.
Au Qtr. 4 clinic hrs/credit hr. Prereq: Dent 3rd yr standing. This course is Progress ("P") graded. Continuation of 616.

618 Clinical Primary Care Dentistry  DENT  8
Clinical experience in primary care dentistry including diagnosis, prognosis, treatment planning, care delivery and evaluation.
Wi Qtr. 4 clinic hrs/credit hr. Prereq: Dent 3rd yr standing.

619 Clinical Primary Care Dentistry  DENT  8
Clinical experience in primary care dentistry including diagnosis, prognosis, treatment planning, care delivery and evaluation.
Sp Qtr. 4 clinic hrs/credit hr. Prereq: Dent 3rd yr standing.

620 Orientation to Clinical Dentistry  DENT  1-10
Interdisciplinary orientation and direct guidance to clinical practice including clinical policies; procedures; time, patient, and treatment management through individual conferences, classroom presentations, and clinical practice.
Su, Au, Wi, Sp Qtr's. Prereq: Dent 3rd yr standing. Repeatable to a maximum of 18 cr hrs.

621 Dental Ethics  DENT  1
Advanced study and critical analysis of the ethical issues associated with the day to day practice of the profession.
Au, Wi, Sp Qtrs. 3-3 hr cl. Prereq: Dent 3rd yr standing.

623 Community Dentistry  DENT  1
Dental care for the special-needs patient: understanding of the total patient situation, mobility, psychosocial, medical issues, and interpersonal relations.
Sp Qtr. 1 cl. Prereq: Dent 3rd yr standing.

625 Practice Management I  DENT  1
Dental practice planning and development. Personnel, time and information management.
Wi Qtr. 1 cl.

626 Practice Management II  DENT  1
Accounting and financial planning as related to dental practice management.
Sp Qtr. 1 cl.

627 Practice Management III  DENT  1
Legal issues related to dental practice management. Practice purchase and associateships.
Su Qtr. 1 cl.

629 Dental Materials  DENT  1
Topics include: requirements of ideal materials, sources for evaluation, comparison of testing procedures, clinical evidence and criteria, evaluation of dental laboratories, material selection.
Au Qtr. 1 cl. Prereq: Dent 4th yr standing. This course is graded S/U.

630 Restorative Dentistry  DENT  3
Techniques for collecting information necessary to diagnose accurately and plan complex prosthodontic care; integrates theory into clinical practice.
Sp Qtr. Prereq: Dent 2nd yr standing.

631 Restorative Dentistry  DENT  1
Restorative clinical requirements and procedures plus information on tooth isolation, pulp protection, laboratory prescriptions and protocol, and pulpal response to restorative procedures.
Au Qtr. 1 cl. Prereq: Dent 3rd yr standing.

632 Restorative Dentistry  DENT  1
Comprehensive diagnosis and treatment planning for restorative and prosthetic dentistry.
Au Qtr. 1 cl. Prereq: Dent 3rd yr standing.

633 Restorative Dentistry  DENT  1
Clinically applied principles for restorative and fixed prosthodontics; includes fluid control, soft-tissue management, electro surgery, posts and cores, crowns, and fixed partial dentures.
Wi Qtr. 1 cl. Prereq: Dent 3rd yr standing. This course is Progress ("P") graded.

634 Restorative Dentistry  DENT  1
Complex prostho and endodontic treatment considerations, presents treatment considerations for patients with temporomandibular disorders, removable partial dentures, and worn dentitions.
Sp Qtr. 1 cl. Prereq: Dent 3rd yr standing.

635 Restorative Dentistry  DENT  1
Preparation of the restorations for endodontically treated teeth.
Prereq: Dent 3rd year standing.

638 Restorative Dentistry  DENT  2
This course will enable the participant to recognize the need to restore dentition utilizing contemporary dental implants.
Au Qtr. 2 cl. This course is Progress ("P") graded. A "P" mark as defined by the College of Dentistry may be used.

640 Clinical Restorative Dentistry  DENT  2
Competency examination for Dent III students.
Sp Qtr. 6 clinic hrs. This course is graded S/U.

644 Internal Medicine I  DENT  1
Second part of an Internal Medicine series for DDS program students. Topics covered include a general survey of Internal Medicine focused on issues related to treatment of dental patients.
Prereq: Dent 2nd year standing.
114 Dentistry

645 Diagnostic Sciences III  DENT 2
Provides etiology, pathogenesis, clinical and microscopic features, and management of mucous membrane disorders, microbial disease, reactive lesions, AIDS, and salivary gland disease.
Su Qtr. 2 cl. Prereq: Dent 3rd yr standing.

646 Microbiology and Immunology  DENT 5
Medical Microbiology and Immunology and their clinical application to dental practice.
Su Qtr. Prereq: Dent 2nd yr standing or permission of instructor.

647 Immunology  DENT 2
Basic immunology and its clinical application to dental practice.
Su Qtr. 2 cl. Prereq: Dent 2nd yr standing or permission of instructor.

648 Diagnostic Sciences IV  DENT 2
Oral pathology, study of clinical appearance epidemiology, etiology, diagnosis, and histopathology of common and rare lesions of oral hard and soft tissues.
Au Qtr. 2 cl. Prereq: 514, Pathol 655, and Dent 3rd yr standing.

651.01 Pediatric Dentistry Lecture  DENT 3
Treatment planning for pediatric dentistry. Includes discussion of child development, behavioral management, developmental disabilities, space maintenance, periodontal conditions, trauma.
Au Qtr. 3 cl. Prereq: Dent 3rd yr standing.

652.02 Clinical Pediatric Dentistry  DENT 1
Clinical experience in pediatric dentistry.
Su, Au, Wi, Sp Qtrs. 4 clinic hrs. This course is graded S/U.

655 General Pathology  DENT 4
Survey of General Pathology for Dental Students.
Au Qtr. Dent 2 class standing.

656 Orthodontics  DENT 5
Orthodontic diagnosis and treatment goals.
Au Qtr. 4 cl. Prereq: Dent 2nd yr standing.

658 Clinical Orthodontics I  DENT 3
Clinical orthodontic course entailing the provision of limited tooth movement.
Au, Wi Qtrs. Prereq: Dent 4th yr standing. This course is graded S/U.

659.02 Orthodontic Case Presentation  DENT 1
Students present completed orthodontic treatment cases in a seminar setting.
Au Qtr. 1 cl. Prereq: Dent 4th yr standing.

660 Clinical Periodontics  DENT 1
Clinical rotation in graduate periodontics. Assist and observe patient treatment and participate in small group seminars.
Sp Qtr. This course is graded S/U.

664 Periodontology  DENT 2
Advanced treatment modalities for the management of periodontal diseases with emphasis on surgical corrective techniques; current developments in clinical periodontics.
Su Qtr. 2 cl. Prereq: Dent 3rd yr standing.

666 Clinical Periodontology  DENT 1
Periodontology clinical diagnostic exam and dental prophylaxis (scaling) exam.
Sp Qtr. Arr. Prereq: Dent 3rd yr standing.

668 Clinical Endodontics I  DENT 1
Clinic.
Wi Qtr. 2 clinic hrs. Prereq: Dent 3rd yr standing. This course is Progress (‘P’) graded. This course is offered in a series with 669. A ‘P’ mark as defined by the College of Dentistry may be used.

669 Clinical Endodontics  DENT 3
Experience in endodontic procedures performed by the general dentist. Includes case procedure requirements and competency evaluation.
Prereq: Dent 3rd yr standing. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

672 Pharmacology  DENT 1
Review of autonomic pharmacology, psychopharmacology including antipsychotics and antidepressants, anti-Parkinson’s therapy, and the principles, mechanisms, classifications, uses of antibiotic, and chemotherapeutic agents.
Au Qtr. 1 cl. Prereq: Dent 3rd yr standing.

684 Removable Complete Prosthodontics  DENT 2
Block assignment of integrated didactic, laboratory, and clinical removable prosthetic instruction. Laboratory competency examination of Dent III students’ ability to provide complete prosthetic treatment.
Wi Qtr. 36-hr block. Prereq: Dent 2nd yr standing.

685 Complete Denture Clinical Procedures  DENT 1
Complete denture clinical procedures.
Su Qtr. Prereq: Dent 3rd yr student.

690 Introduction to Clinical Dentistry V  DENT 2
Introduction to aspects of patient care that will allow students to effectively observe and assist with treatment.
Wi Qtr. Prereq: Dent 2nd yr standing. This course is graded S/U.

691 Introduction to Clinical Dentistry VI  DENT 2
Introduction to aspects of patient care that will allow students to effectively observe and assist with treatment.
Sp Qtr. Prereq: Dent 2nd yr standing. This course is graded S/U.

700 Special Problems: Advanced Oral Surgery and Anesthesia  GRAD 1-15
Diagnosis and treatment of surgical conditions of the teeth and contiguous structures; advanced techniques in surgery and local and general anesthesia.
Au, Wi, Sp Qtrs. Arr. Repeatable. This course is graded S/U.

700.01 Special Problems: Advanced Oral Surgery and Anesthesia  GRAD 1-15
Diagnosis and treatment of periodontal disease; correlation between the disease of the periodontium and probable systemic diseases, and management of diseases of a purely dental origin.
Prereq: Dent postgrad or grad standing. Repeatable.

700.02 Special Problems: Advanced Orthodontics  GRAD 1-15
Applied osteotomy and myology in cephalometric roentgenographic interpretations; review of orthodontic growth and development factors in normal occlusion; correction of malocclusions and dentofacial malformations.
Prereq: Dent postgrad or grad standing. Repeatable.

700.03 Special Problems: Advanced Periodontology  GRAD 1-15
Diagnosis and treatment of periodontal disease; correlation between the disease of the periodontium and probable systemic diseases, and management of diseases of a purely dental origin.
Prereq: Dent postgrad or grad standing. Repeatable.

700.04 Special Problems: Advanced Prosthodontics  GRAD 1-15
The diagnosis, treatment, and replacement of missing or lost teeth and parts of the mouth by prosthetic appliances; complete removable partial or fixed restorations.
Prereq: Dent postgrad or grad standing. Repeatable.

700.05 Special Problems: Advanced Oral Pathology and Diagnosis  GRAD 1-15
The internrelationships of gross microscopic and clinical pathology; current advances in the field of oral pathology and diagnosis.
Prereq: Dent postgrad or grad standing. Repeatable.

700.06 Special Problems: Advanced Dental Materials  GRAD 1-15
The science of dental materials.
Prereq: Dent postgrad or grad standing. Repeatable.

700.09 Special Problems: Advanced Oral Histology and Embryology  GRAD 1-15
The principles of histology and embryology applied to the structures in the oral region—their development, morphology, functions, and clinical relationships.
Prereq: Dent postgrad or grad standing. Repeatable.

700.10 Special Problems: Advanced Operative  GRAD 1-15
Clinical problems in operative dentistry and their correlation with problems in related fields of dentistry; special emphasis on preventive dentistry.
Prereq: Dent postgrad or grad standing. Repeatable.

700.11 Special Problems: Pediatrics for Dental Residents  GRAD 2
The Pediatrics curriculum reviews common medical conditions affecting children including dental treatment implications. Modules on history/physical examination, laboratory medicine and emergency medicine are included.
Su Qtr. 2 cl. Prereq: Dent postgrad or grad standing. Prereq: DDS or DMD. Repeatable to a maximum of 25 cr hrs.

701 Advanced Clinical Oral Maxillofacial Surgery  DENT 8
Clinical experience in removal of teeth, biopsies, minor prosthodontic, and post operative patient care.
Su Qtr. 60 clinic hour block. Prereq: Dent 4th yr standing. This course is graded S/U.

702 Oral Surgery Clinic  DENT 1
Oral Surgery Clinic experience for DDS program students in their fourth year.
Sp Qtr. 30 clinic hours. Prereq: Dent 4th yr standing. This course is graded S/U.

704 Advanced Oral and Maxillofacial Surgery  DENT 2
Areas of oral and maxillofacial surgeries; dentofacial deformities; trauma; reconstructive surgery; cysts and tumors; TMJ; head and neck infections; and advanced dentofacial surgery techniques.
Au Qtr. 2 cl. Prereq: Dent 4th yr standing.

708.02 Clinic: University Hospital  DENT 1
Defines the role of the hospital in the treatment of dental patients and provides experience in the hospital so the dentist can contribute to total patient care.
In-patient and out-patient general anesthesia, operating room, emergency room, out-patient dentistry, clinics, hospital pathology service, medicine and surgery conferences, ward rounds, laboratory services, oral surgery rounds.
Su, Au, Wi, Sp Qtrs. 4-hr clinic. Prereq: Dent 3rd yr standing. This course is graded S/U.

708.03 Clinic: Children's Hospital  DENT 1
Defines the role of the hospital in the treatment of dental patients and provides experience in the hospital so the dentist can contribute to total patient care.
Operating room, emergency room, out-patient dentistry, out-patient clinics, observation in general anesthesia, medical and surgical conferences, ward rounds, laboratory services.
Su, Au, Wi, Sp Qtrs. 4-hr clinic. Prereq: Dent 3rd yr standing. This course is graded S/U.
Clinical experience in primary care dentistry including diagnosis, prognosis, treatment planning, care delivery and evaluation.

Su Qtr. 4 clinic hrs/credit hr. Prereq: Dent 4th yr standing.

717 Clinical Primary Care Dentistry DENT 6
Clinical experience in primary care dentistry including diagnosis, prognosis, treatment planning, care delivery and evaluation.

Au Qtr. 4 clinic hrs/credit hr. Prereq: Dent 4th yr standing.

718 Clinical Primary Care Dentistry DENT 6
Clinical experience in primary care dentistry including diagnosis, prognosis, treatment planning, care delivery and evaluation.

Au Qtr. 2 clinic hrs/credit hr. Prereq: Dent 4th yr standing.

719 Clinical Primary Care Dentistry DENT 10
Clinical experience in primary care dentistry including diagnosis, prognosis, treatment planning, care delivery and evaluation.

Sp Qtr. 2 clinic hrs/credit hr. Prereq: Dent 4th yr standing.

724 Neurophysiology GRAD 3
Interdisciplinary approach to the physiology and neurobiology of the nervous system.

Au Qtr. Prereq: Permission of instructor. Not open to students with credit for NeuroSci 724 or NeuroGSP 724. Cross-listed in Neuroscience Department and Neuroscience Graduate Studies Program.

725 Structure and Function of the Nervous System GRAD 6
Interdisciplinary approach to the anatomy, neurobiology, physiology and biochemistry of the nervous system.

Wi Qtr. Prereq: Permission of instructor. Not open to students with credit for NeuroSci 725 or NeuroGSP 725. Cross-listed in Neuroscience Department and Neuroscience Graduate Studies Program.

730 Integrated Clinical Sciences Review DENT 2
Integration and review of all areas of dentistry related to general practice.

Su Qtr. Prereq: Dent 4th yr standing.

734 Clinical Restorative Dentistry DENT 2
Clinical competency examinations; examinations of senior students' ability to perform efficient, high-quality routine dentistry.

Wi Qtr. 2 hrs clinical. Prereq: Dent 4th yr standing.

742 Oral Pathology DENT 1
A review of common oral lesions with emphasis on cause, clinical appearance, signs, symptoms, diagnosis, treatment and management.

Su Qtr. 1 cl. Prereq: Dent 4th yr standing.

744 Clinical Oral Pathology DENT 2
Review of common oral and paranasal diseases, with emphasis on clinical aspects, diagnosis, and management of various lesions.

Au Qtr. 1-2 hr d. Prereq: Dent 4th yr standing.

747 Clinical Oral Radiology I DENT 1
Clinical Oral Radiology I.

Au Qtr. 2 clinic hrs. Prereq: Dent 3rd yr standing.

748 Clinical Oral Radiology II DENT 1
A continuation of 747.

Wi Qtr. 2 clinic hrs. Prereq: Dent 3rd yr standing.

749 Clinical Oral Radiology III DENT 1
A continuation of 748.

Sp Qtr. 2 clinic hrs. Prereq: Dent 3rd yr standing.

756 Orthodontics II DENT 2
Orthodontic treatment methods.

Wi Qtr. 2 cl. Prereq: Dent 2nd yr standing.

788 Clinical Endodontics III DENT 2
Clinical.

Au Qtr. 4 clinic hrs. Prereq: Dent 4th yr standing. This course is Progress (P)-graded. This course is offered in a series with 769. A 'P' mark as defined by the College of Dentistry may be used.

769 Clinical Endodontics I DENT 3
Experience in endodontic procedures performed by the general dentist. Includes case/procedure requirements and competency evaluation.

Prereq: Dent 4th yr standing. Repeatable to a maximum of 6 hrs.

771 Pharmacology DENT 1
Pharmacology of drugs used primarily for medical conditions including cardiac glycosides, anti-arrhythmics, calcium channel blockers, anti-anginals, anti-hypertensives, anti-coagulants, anti-neoplastics, and gastrointestinal medications.

Su Qtr. 1 cl. Prereq: Dent 4th yr standing.

776 Clinical Periodontology DENT 1
Periodontology written periodontal exam and clinical exam of diagnostic findings, scaling and root planing.

Au Qtr. Prereq: Dent 4th yr standing.
792.19 Special Lectures in Dentistry: General Dentistry GRAD 1-5
Lectures in special phases of dentistry -- general principles of general dental practice primary oral healthcare, and related aspects, including practice management, etc. 1-5 hrs seminar and/or variable each qtr. Prereq: DDS degree or equiv and permission of instructor. Repeatable. Introduction to the principles of dental specialties in general practice for the graduate in general dentistry.

792.20 Special Lectures in Dentistry: Hospital Dentistry GRAD 1-5
Lectures in special phases of dentistry -- general principles of general hospital dental practice and care of the medical patient. 1-5 seminars. Prereq: DDS or equiv and permission of instructor. Repeatable. Introduction to the principles of interrelationships of medicine and dentistry and the application of these in general practice.

792.21 Special Lectures in Dentistry: Legal Issues in Developing and Managing a Dental Practice GRAD 2
This course outlines and discusses legal issues that a dental professional will be confronted with in dental practice.

792.22 Special Lectures in Dentistry: Surgical Orthodontics GRAD 2
To provide the didactic component of the dentofacial deformities program and a prerequisite for participating in the clinical component of interdisciplinary management of patients.

792.23 Special Lectures in Dentistry: Craniofacial Anomalies GRAD 2
Involves presentations of topics on the development, treatment, and management of patients with craniofacial anomalies.

793.01 Individual Studies: Oral Surgery and Anesthesia GRAD 1-5
Individual assignments in each specialty of dentistry; students will elect to work in desired subjects after a conference with the instructor in charge. Prereq: Permission of instructor. Repeatable. This course is graded S/U.

793.02 Individual Studies: Orthodontics GRAD 1-5
Individual assignments in each specialty of dentistry; students will elect to work in desired subjects after a conference with the instructor in charge. Prereq: Permission of instructor. Repeatable. This course is graded S/U.

793.03 Individual Studies: Periodontics GRAD 1-5
Individual assignments in each specialty of dentistry; students will elect to work in desired subjects after a conference with the instructor in charge. Prereq: Permission of instructor. Repeatable. This course is letter graded.

793.04 Individual Studies: Prosthodontics GRAD 1-5
Individual assignments in each specialty of dentistry; students will elect to work in desired subjects after a conference with the instructor in charge. Prereq: Permission of instructor. Repeatable. This course is graded S/U.

793.05 Individual Studies: Oral Pathology GRAD 1-5
Individual assignments in each specialty of dentistry; students will elect to work in desired subjects after a conference with the instructor in charge. Prereq: Permission of instructor. Repeatable. This course is graded S/U.

793.06 Individual Studies: Endodontics GRAD 1-5
Individual assignments in each specialty of dentistry; students will elect to work in desired subjects after a conference with the instructor in charge. Prereq: Permission of instructor. Repeatable. This course is graded S/U.

793.07 Individual Studies: Pedodontics GRAD 1-5
Individual assignments in each specialty of dentistry; students will elect to work in desired subjects after a conference with the instructor in charge. Prereq: Permission of instructor. Repeatable. This course is graded S/U.

793.08 Individual Studies: Operative Dentistry GRAD 1-5
Individual assignments in each specialty of dentistry; students will elect to work in desired subjects after a conference with the instructor in charge. Prereq: Permission of instructor. Repeatable. This course is graded S/U.

793.09 Individual Studies: Oral Diagnosis GRAD 1-5
Individual assignments in each specialty of dentistry; students will elect to work in desired subjects after a conference with the instructor in charge. Prereq: Permission of instructor. Repeatable. This course is graded S/U.

793.10 Individual Studies: Fixed Partial Prosthodontics GRAD 1-5
Individual assignments in each specialty of dentistry; students will elect to work in desired subjects after a conference with the instructor in charge. Prereq: Permission of instructor. Repeatable. This course is graded S/U.

793.11 Individual Studies: Oral Radiography GRAD 1-5
Individual assignments in each specialty of dentistry; students will elect to work in desired subjects after a conference with the instructor in charge. Prereq: Permission of instructor. Repeatable. This course is graded S/U.

793.12 Individual Studies: Oral Biology Laboratory Rotation GRAD 1-5
Research activities and training in the laboratory of a program faculty member. Prereq: Permission of instructor. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

793.13 Individual Studies: General Dentistry GRAD 1-5
Individual assignments in each specialty of dentistry; students will elect to work in desired subjects after a conference with the instructor in charge. 1-5 seminar and discussion hrs; self-paced work. Prereq: DDS degree or equiv, third qtr of post-graduate yr or second post-graduate yr, and permission of instructor. Self-directed course for the upper-level first-yr resident and second-yr resident to pursue areas of interest. Repeatable. This course is graded S/U.

793.14 Individual Studies: Hospital Dentistry GRAD 1-5
Individual assignments in each specialty of dentistry; students will elect to work in desired subjects after a conference with the instructor in charge. 1-5 seminar and discussion hrs, self-paced work. Prereq: DDS or equiv, third qtr of first-post-graduate yr or second post-graduate yr and permission of instructor. Self-directed course for upper level first-year resident and second-year resident to pursue areas of interest. Repeatable. This course is graded S/U.

794.01 Group Studies: Oral Surgery and Anesthesia DENT 3-5
Group studies on special problems in each specialty of dentistry. Prereq: Permission of instructor. Repeatable.

794.02 Group Studies: Orthodontics DENT 3-5
Group studies on special problems in each specialty of dentistry. Prereq: Permission of instructor. Repeatable.

794.03 Group Studies: Periodontics DENT 3-5
Group studies on special problems in each specialty of dentistry. Prereq: Permission of instructor. Repeatable.

794.04 Group Studies: Prosthodontics DENT 3-5
Group studies on special problems in each specialty of dentistry. Prereq: Permission of instructor. Repeatable.

794.05 Group Studies: Oral Pathology DENT 3-5
Group studies on special problems in each specialty of dentistry. Prereq: Permission of instructor. Repeatable.

794.06 Group Studies: Endodontics DENT 3-5
Group studies on special problems in each specialty of dentistry. Prereq: Permission of instructor. Repeatable.

794.07 Group Studies: Pedodontics DENT 3-5
Group studies on special problems in each specialty of dentistry. Prereq: Permission of instructor. Repeatable.

794.08 Group Studies: Operative Dentistry DENT 3-5
Group studies on special problems in each specialty of dentistry. Prereq: Permission of instructor. Repeatable.

794.09 Group Studies: Oral Diagnosis DENT 3-5
Group studies on special problems in each specialty of dentistry. Prereq: Permission of instructor. Repeatable.

794.10 Group Studies: Fixed Partial Prosthodontics DENT 3-5
Group studies on special problems in each specialty of dentistry. Prereq: Permission of instructor. Repeatable.

794.11 Group Studies: Oral Radiography DENT 3-5
Group studies on special problems in each specialty of dentistry. Prereq: Permission of instructor. Repeatable.

795.01 Seminars in Dentistry: Oral Surgery and Anesthesia GRAD 1-5
Discussion of advances in dental science and review of original literature. Prereq: Dent grad standing.

795.02 Seminars in Dentistry: Orthodontics GRAD 1-5
Discussion of advances in dental science and review of original literature. Prereq: Dent grad standing.

795.03 Seminars in Dentistry: Periodontics GRAD 1-5
Discussion of advances in dental science and review of original literature. Prereq: Dent grad standing.

795.04 Seminars in Dentistry: Prosthodontics GRAD 1-5
Discussion of advances in dental science and review of original literature. Prereq: Dent grad standing.

795.05 Seminars in Dentistry: Oral Pathology GRAD 1-5
Discussion of advances in dental science and review of original literature. Prereq: Dent grad standing.
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**795.06 Seminars in Dentistry: Endodontics**
**GRAD 1-5**
Discussion of advances in dental science and review of original literature. Prereq: Dent grad standing.

**795.07 Seminars in Dentistry: Pedodontics**
**GRAD 1-5**
Discussion of advances in dental science and review of original literature. Prereq: Dent grad standing.

**795.08 Seminars in Dentistry: Operative Dentistry**
**GRAD 1-5**
Discussion of advances in dental science and review of original literature. Prereq: Dent grad standing.

**795.12 Seminars in Dentistry: General Dentistry**
**GRAD 1-5**
Discussion of advances in dental science and review of the original literature that will focus on general community based dental practice and the role of dental specialties. 1-5 hrs of seminar, variable with each qtr. Prereq: DDS or equiv and permission of instructor. Seminar for presentation and discussion of research work and demonstration of advanced techniques.

**795.13 Seminars in Dentistry: Hospital Dentistry**
**GRAD 1-5**
The focus in this area will be hospital and institutional based general dental practice. Prereq: Dent grad standing.

**796.01 Specialty Seminars in Dentistry: Oral Surgery and Anesthesia**
**GRAD 1-5**
Seminars in each of the specialty areas of dentistry for discussion of pertinent literature, presentation, and discussion of research work and demonstration of advanced techniques. Prereq: Permission of instructor. Repeatable.

**796.02 Specialty Seminars in Dentistry: Orthodontics**
**GRAD 1-5**
Seminars in each of the specialty areas of dentistry for discussion of pertinent literature, presentation, and discussion of research work and demonstration of advanced techniques. Prereq: Permission of instructor. Repeatable.

**796.03 Specialty Seminars in Dentistry: Periodontics**
**GRAD 1-5**
Seminars in each of the specialty areas of dentistry for discussion of pertinent literature, presentation, and discussion of research work and demonstration of advanced techniques. Prereq: Permission of instructor. Repeatable.

**796.04 Specialty Seminars in Dentistry: Prosthodontics**
**GRAD 1-5**
Seminars in each of the specialty areas of dentistry for discussion of pertinent literature, presentation, and discussion of research work and demonstration of advanced techniques. Prereq: Permission of instructor. Repeatable.

**796.05 Specialty Seminars in Dentistry: Oral Pathology**
**GRAD 1-5**
Seminars in each of the specialty areas of dentistry for discussion of pertinent literature, presentation, and discussion of research work and demonstration of advanced techniques. Prereq: Permission of instructor. Repeatable.

**796.06 Specialty Seminars in Dentistry: Endodontology**
**GRAD 1-5**
Seminars in each of the specialty areas of dentistry for discussion of pertinent literature, presentation, and discussion of research work and demonstration of advanced techniques. Prereq: Permission of instructor. Repeatable.

**796.07 Specialty Seminars in Dentistry: Pedodontics**
**GRAD 1-5**
Seminars in each of the specialty areas of dentistry for discussion of pertinent literature, presentation, and discussion of research work and demonstration of advanced techniques. Prereq: Permission of instructor. Repeatable.

**796.08 Specialty Seminars in Dentistry: Operative Dentistry**
**GRAD 1-5**
Seminars in each of the specialty areas of dentistry for discussion of pertinent literature, presentation, and discussion of research work and demonstration of advanced techniques. Prereq: Permission of instructor. Repeatable.

**796.10 Specialty Seminars in Dentistry: Fixed Partial Prosthodontics**
**GRAD 1-5**
Seminars in each of the specialty areas of dentistry for discussion of pertinent literature, presentation, and discussion of research work and demonstration of advanced techniques. Prereq: Permission of instructor. Repeatable.

**796.12 Specialty Seminars in Dentistry: Oral Biology Seminar**
**GRAD 1**
Student presentations of recent research findings, both original and from the literature. Prereq: Permission of instructor. Repeatable to a maximum of 2 cr hrs.

**796.13 Specialty Seminars in Dentistry: Advanced General Dentistry**
**GRAD 1-5**
Seminars in each of the specialty areas of dentistry for discussion of pertinent literature, presentation, and discussion of research work and demonstration of advanced techniques. 1-5 hrs seminar, variable with each qtr. Prereq: Permission of instructor and DDS or equiv. Repeatable. Seminar for presentation and discussion of clinical cases and advanced techniques with analysis and discussion of relevant literature.

**796.14 Specialty Seminars in Dentistry: Hospital Dentistry**
**GRAD 1-5**
Seminars in each of the specialty areas of dentistry for discussion of pertinent literature, presentation, and discussion of research work and demonstration of advanced techniques. 1-5 seminar hrs, variable each qtr. Prereq: Permission of instructor and DDS or equiv. Seminar for presentation and discussion of clinical cases and advanced techniques with analysis and discussion of the literature in medicine and dentistry. Repeatable.

**798.01 Advanced Clinical Practice in Dentistry: Oral Surgery and Anesthesia**
**DENT 3-10**
Broad exposure to advanced principles and practices in each specialty of dentistry. Prereq: Permission of instructor. Repeatable to maximum of 120 or hrs.

**798.02 Advanced Clinical Practice in Dentistry: Orthodontics**
**DENT 3-10**
Broad exposure to advanced principles and practices in each specialty of dentistry. Prereq: Orthodontic graduate program. Repeatable to maximum of 120 or hrs.

**798.03 Advanced Clinical Practice in Dentistry: Periodontics**
**DENT 3-10**
Broad exposure to advanced principles and practices in each specialty of dentistry. Prereq: Permission of instructor. Repeatable to maximum of 120 or hrs.

**798.04 Advanced Clinical Practice in Dentistry: Prosthodontics**
**DENT 3-10**
Broad exposure to advanced principles and practices in each specialty of dentistry. Prereq: Permission of instructor. Repeatable to maximum of 120 or hrs.

**798.05 Advanced Clinical Practice in Dentistry: Oral Pathology**
**DENT 3-10**
Broad exposure to advanced principles and practices in each specialty of dentistry. Prereq: Permission of instructor. Repeatable to maximum of 120 or hrs.

**798.06 Advanced Clinical Practice in Dentistry: Endodontics**
**DENT 3-10**
Broad exposure to advanced principles and practices in each specialty of dentistry. Prereq: Permission of instructor. Repeatable to maximum of 120 or hrs.

**798.07 Advanced Clinical Practice in Dentistry: Pedodontics**
**DENT 3-10**
Broad exposure to advanced principles and practices in each specialty of dentistry. Prereq: Permission of instructor. Repeatable to maximum of 120 or hrs.

**798.08 Advanced Clinical Practice in Dentistry: Operative Dentistry**
**DENT 3-10**
Broad exposure to advanced principles and practices in each specialty of dentistry. Prereq: Permission of instructor. Repeatable to maximum of 120 or hrs.

**798.10 Advanced Clinical Practice in Dentistry: Fixed Partial Prosthodontics**
**DENT 3-10**
Broad exposure to advanced principles and practices in each specialty of dentistry. Prereq: Permission of instructor. Repeatable to maximum of 120 or hrs.

**798.12 Advanced Clinical Practice in Dentistry: General Dentistry**
**DENT 3-10**
Broad exposure to advanced principles and practices in each specialty of dentistry. The focus in this area will be general community based dental practice. 30 or more hrs of clinical practice time. Prereq: Permission of instructor and DDS or equiv. Repeatable to a maximum of 120 or hrs. Clinical practice of application of specialty and general practice principles.

**798.13 Advanced Clinical Practice in Dentistry: Hospital Dentistry**
**DENT 3-10**
Broad exposure to advanced principles and practices in each specialty of dentistry. To focus in this area will be hospital and institutional based general practice. 35 or more hrs of clinical practice time. Prereq: Permission of instructor and DDS or equiv. Repeatable to maximum of 120 or hrs. Clinical practice of application of specialty and general dental and medical principles in general hospital practice.

**800 Statistical Inferences and its Application to Dentistry**
**GRAD 3**
Conceptual foundation of statistics related to basic, clinical and behavioral dental sciences. Su Qtr. Prereq: DDS degree or permission of instructor.

**801 Epidemiology of Oral Disease**
**GRAD 2**
Principles and techniques used to assess oral disease in human populations. Au Qtr. Prereq: 800 or permission of instructor.

**802 Introduction to Dental Research Designs**
**GRAD 3**
Conceptual and technical problems in the development and implementation of clinical, behavioral and basic science research projects related to dentistry. Wi Qtr. 2.1-5 cr hrs. Prereq: 800 or permission of instructor.

**803 Biology of Oral Wound Repair**
**GRAD 3**
Cell and molecular events of oral wound repair. Focus on biology of hard and soft tissues of oral cavity as related to advanced clinical dentistry. Sp Qtr. 2.1-5 cr hrs. Prereq: DDS degree or equiv.
118 Dentistry

805 Orofacial Pain Management
Review of common non-dental conditions producing chronic pain in the head and neck region. Neuropathology of pain, diagnosis and treatment are stressed. Sp Qtr. 3 hr. Prereq: DDS or MD degree.

884 Current Issues in Oral Biology
Overview of current areas of oral health research. Su, Au, Wi, Sp Qtrs. 3 hrs. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs. This course will cover multiple topics of current oral health concern.

984 Group Studies
Advanced group studies in dentistry. Su, Au, Wi, Sp Qtrs. 3 hrs. Prereq: Permission of instructor. Repeatable.

993 Individual Studies
Advanced individual studies in dentistry. Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable. This course is graded SU.

999 Research in Dentistry
Research for thesis purposes only. Su, Au, Wi, Sp Qtrs. This course is graded SU. Repeatable.

Dutch

571 Basic Dutch for Reading
Fundamentals of grammar for reading purposes; applicable to students in humanities, sciences social sciences, and professional schools.
* 5 cl. Prereq: Grad standing or permission of instructor.

572 Dutch for Research
Continuation of the principles learned in 571; applied readings in students’ disciplines; emphasis on close translation, grammatical analysis, and vocabulary building.
* 3 cl. Prereq: 571 or equiv or permission of instructor.

Earth Sciences

100 Planet Earth: How it Works
The materials of the Earth's crust, the processes that produce and modify them, and the development of the Earth and its life forms through time.
Su, Au, Wi, Sp Qtrs. 4 cl, 1-2 hr lab; or 2-2.5 hr cl. Not open to students with credit for GeoSci 100. Not intended for ASC BS students. This course is available for EM credit. GEC B.A. phys sci course. B.A. phys sci sequence with 108, 110, 203, 204, 205, 210 or ENR 101 or GeolSci 120. NS Admis Cond course.

105 Geology and the National Parks
Geologic processes, materials, and history revealed in geologic settings of the National Parks.
Su, Wi Qtrs. 4 cl. Not open to students with credit for 100, or GeoSci 100. Not intended for ASC BS students. GEC B.A. phys sci course. B.A. phys sci sequence with 108, 110, 203, 205, 210. NS Admis Cond course.

107 Field-based Introduction to Oceanography
Origin, development, and structure of ocean basins and their contents; contemporary oceanic processes of geologic significance.
Su Qtr. 1 week, full-time at Stone Lab. Prereq: Permission of instructor. Not open to students with credit for GeoSci 107. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://ieregistrar.osu.edu.

108 Gems and Precious Stones
General introduction to gems and precious stones, including the origin of gems, identification techniques, and the history of important gems. 108H (honors) may be available.
Au, Sp Qtrs. 4 cl, 1 rec. Not open to students with credit for GeoSci 108. Not intended for ASC BS students. GEC phys sci course. B.A. phys sci sequence with 100, 105.

108H Gems and Precious Stones
General introduction to gems and precious stones, including the origin of gems, identification techniques, and the history of important gems.
Sp Qtr. 4 cl, 1 hr lab. Prereq: Honors program or permission of department or instructor. Not open to students with credit for GeoSci 108. Not intended for ASC BS students. GEC phys sci course. B.A. phys sci sequence with 100, 105.

110 History of Life on Earth-Global Change in the Biosphere
3.5 billion years of biosphere global change; introduction to major evolutionary and extinction events; processes responsible for change; and biosphere, and lithosphere interactions. 110H (honors) may be available.
Sp Qtr. 4 cl, 1 lab/discussion. Prereq: 100 or 105 or Biology 102 or 114 or Astron 143. Not open to students with credit for GeoSci 110. This course is available for EM credit. NS Admis Cond course.

120 The Dynamic Earth
Minerals, rocks, and their origin; land forms and how they are produced; structural features of the Earth’s crust. 121H (honors) may be available.
Su, Au, Wi, Sp Qtrs. 4 cl, 1-2 hr lab; or 2-2.5 hr cl, 1 hr lab. Prereq: Math 104. Not open to students with credit for GeoSci 121. This course is available for EM credit. GEC phys sci course. B.A. phys sci sequence with 122, 203, 204, 205, 210, 210; B.S. phys sci sequence with 122, NS Admis Cond course.

122 Earth Through Time
Origin and evolution of Earth, including its physical, chemical and biological components; principles of geologic inference and their application to interpreting Earth. 122H (honors) may be available.
Au, Wi, Sp Qtrs. 4 cl, 1-2 hr lab; or 2-2.5 hr cl, 1-2 hr lab. Prereq: 121 or GeoSci 121. Not open to students with credit for GeoSci 122. Recommended second course in GeoSci for science majors. GEC phys sci course. B.A. and B.S. phys sci sequence with 121, NS Admis Cond course.

151 Natural Disasters: Earthquakes, Volcanic Eruptions and Related Hazards
Occurrence and causes of disasters, volcanoes and related hazards, and impact on climate, society, and history.
Sp Qtr. 2-2.5 hr cl. Not open to students with credit for Enr 155. Cross-listed with Enr 155. GEC B.A. phys sci course. B.A. phys sci sequence with 203 and 210.

203 Environmental Geoscience
Concepts and challenges of geological hazards and resources, environmental pollution and health, regional and long-range planning, and global change and sustainability.
Su, Au, Wi, Sp Qtrs. 4 cl, 1-2 hr lab; or 2-2.5 hr cl, 1-2 hr lab. Prereq: 105 or 121 or 155 or GeoSci 100 or 105 or 121 or 155. Not open to students with credit for GeoSci 203. GEC phys sci course. B.A. phys sci sequence with 100, 105, 121 and 155. NS Admis Cond course.

204 Exploring Water Issues
Water on Earth, human impacts, and scientific and technological issues related to water resource development and conservation.
Wi Qtr. 5 cl. Prereq: 100 or 105 or 121 or GeoSci 100, 105, 121, or Chem 101; or permission of instructor. Not open to students with credit for GeoSci 204. GEC phys sci course. B.A. phys sci sequence with 100 and 121. NS Admis Cond course.

205 The Planets
Comparison of the geological processes of Earth to the planets and moons in the solar system with particular attention to surface environments.
Sp Qtr. 5 cl. Prereq: 100 or 105 or 121 or 151 or GeoSci 100, 105, 121 or permission of instructor. Not open to students with credit for GeoSci 205. GEC phys sci course. B.A. phys sci sequence with 100, 105, 121 or 151.

206 Principles of Oceanography
The origin, development, and structure of ocean basins and their contents; contemporary oceanic processes of geologic significance.
Au, Wi, Sp Qtrs. 4 cl, 1-2 hr lab; or 2-2.5 hr cl, 1-2 hr lab. Prereq: 100 or 105 or 121 or GeoSci 100 or 105 or 121. Not open to students with credit for GeoSci 206. GEC phys sci course. B.A. phys sci sequence with 100, 105, 121. NS Admis Cond course.

210 Energy, Mineral Resources, and Society
Geologic origin, world distribution, and uses of mineral resources critical to society; topics include mineral and fossil fuels, metallic ores, and industrial minerals.
Su, Wi Qtrs. 5 cl. Prereq: 100 or 105 or 121 or GeoSci 100 or 105 or 121 or 155. GEC phys sci course. B.A. phys sci sequence with 100, 105, 121 or 155. NS Admis Cond course.

211 Introduction to Earth Materials
A study of the common minerals and rocks, their associations, occurrences, identifying properties, and origin.
Sp Qtr. 3-4 hr labs. Prereq: 121 or GeoSci 121 and Chem 121. Not open to students with credit for GeoSci 212.

220H Contemporary Topics in Geological Sciences
Geological processes and their underlying principles; diverse issues of current interest; modern investigative techniques introduced in laboratory. 2 cl, 1-3 hr lab, 1-2 hr recitation, 1-4 day field trip. 2-3.5 hr field trips. Prereq: Introductory geological sciences; and honors student or permission of instructor. Not open to students with credit for GeoSci 220H.

245 Introductory Data Analysis for Earth and Environmental Sciences
Data analysis using cooperative learning environment; topics include data visualization, error analysis, error propagation, probability distributions, hypothesis testing, ANOVA, linear regression, and spatial statistics.
Wi Qtr. 2-2.5 hr cl, 1-2 hr lab. Prereq: Math 152, or written permission of instructor. Not open to students with credit for GeoSci 245. GEC data analysis course.

294 Group Studies
Group study of special topics in various fields of the geological sciences. 294H (honors) may be available.

310 Earth Systems Data Collection and Analysis
Designed to provide an introduction to the basic competencies in observation of earth systems, image interpretation, and software integration.
Au Qtr. 3 cl, 1-3 hr lab. Prereq: GEC data analysis course; open standing and above. Not open to students with credit for GeoSci 310.
315 Evolution: Contemporary and Interdisciplinary Perspectives UGRD 5
Develop an understanding of the interplay among different disciplinary approaches to evolutionary studies.
Sp Qtr. 2 2-hr cl. Prereq; one Biology, one Anthrop or one EarthSci course. Not open to students with credit for Anthro 315. Cross-listed in Anthropology.

410 Water in the Basin Hydrologic Cycle UGRD 5
The occurrence and transfer of water in the hydrologic cycle, common measurement approaches, and the importance of water in geological processes and as a resource.
Wi Qtr. 3 1-hr cl and 3 1-hr lab. Prereq: 100, or 121, or GeolSci 100 or 121 or equiv, or permission of instructor. Not open to students with credit for GeolSci 410.

411 Water Security for the 21st Century UGRD 5
Examines the major issues that are contributing to the decline in quantity and quality of global freshwater resources and the resultant environmental and societal impacts.
Sp Qtr. 2 2-hr and 1 1-hr cl. Prereq: GEC data analysis course; soph standing and above. Not open to students with credit for GeoSci 411.

420 Global Oil and Gas Production, Occurrence, and Movement UGRD 5
The origin, migration, accumulation, exploration, and exploitation of oil and gas deposits within an historical context of the evolving global petroleum economy.
3 2-hr cl. Prereq; GEC data analysis course; soph standing and above. Not open to students with credit for GeoSci 420.

421 Introductory Mineralogy and Crystallography UGRD 5
Internal and external symmetry of minerals; relationship of physical properties to crystal structures; introduction to modern and traditional identification methods; eight identification of about 30 minerals.
Au Qtr. 3 cl, 2 2-hr labs. Prereq; Chem 121. Not open to students with credit for GeoSci 221 or 421.

423 Introductory Petrology UGRD 5
Origin, occurrence, association, and mineral composition of the common rocks; laboratory includes work by macroscopic and microscopic methods.
Wi Qtr. 2 cl, 2 2-hr labs. Prereq; GeoSci 121 and 421 or GeoSci 421. Not open to students with credit for 212 or GeoSci 212 or 423.

425 Peak Oil and Sustainability UGRD 5
An examination of the problem of decreasing supplies of fossil fuel, alternative energy sources, and possible accommodations.
Wi Qtr. 2 2-hr cl and 1 1-hr rec. Prereq; GEC data analysis course; soph standing and above. Not open to students with credit for GeoSci 425.

450 The Cryosphere UGRD 5
An introduction to the snow, frozen and ice covered environments; their importance to the overall climatic and geologic systems of the Earth; their variations in time and space.
Au Qtr. 5 cl hr. Prereq; 100 or 121, or GeoSci 100 or 121, or Geog 210 or 220 or 410H or 42 or 520 or permission of instructor.

451H Science in the Courtroom UGRD 5
Development and presentation of expert testimony in a mock trial of a landmark toxic torts case based on analysis of hydrologic, geologic, and toxicological data.
3 cl, 3 1-hr lab. Prereq; 121 or GeolSci 121, Chem 122, and Math 152; honors program or permission of department or instructor. Not open to students with credit for GeoSci 451H. GEC phys sci course.

501 Paleontology UGRD 5
Fundamentals of paleontology and processes responsible for the fossil record, including application of paleontology to paleoecology and paleoenvironmental reconstruction.
Sp Qtr. 4 cl, 1 2-hr lab, and weekend field trips. Prereq; 423 or GeoSci 423. Not open to students with credit for GeoSci 501.

502 Stratigraphy and Sedimentation UGRD 5
Principles of, and procedures in, stratigraphy and sedimentation, illustrated by field and laboratory studies of sedimentary rocks.
Au Qtr. 4 cl, 1 2-hr lab, and weekend field trips. Prereq; 423 or GeoSci 423. Not open to students with credit for GeoSci 502.

530 Structural Geology UGRD 5
An introduction to the principles of rock deformation, the classification and physical origin of rock structures, and crustal tectonic processes.
Sp Qtr. 3 cl, 2 2-hr labs, 1 to-4 day field trip. Prereq; 121 or GeolSci 121 and Physics 131. Not open to students with credit for GeoSci 530.

550 Geomorphology UGRD 5
Investigation of concepts of landscape development; interpretation of materials, processes, times, and evolution of landforms produced under diverse climates.
Sp Qtr. 2 2-hr cl, 1 2-hr lab, field trip. Prereq; 122 or GeoSci 122 or permission of instructor. Not open to students with credit for GeoSci 550.

560 Introductory Geophysics UGRD 5
Methods and techniques of pure and applied geophysics; geological interpretation of geophysical data.
Wi Qtr. 4 cl, 1 2-hr lab. Prereq; 121 or GeolSci 121, Math 151, and Physics 131. Not open to students with credit for GeoSci 280 or GeoSci 560.

570 Senior Thesis UGRD 1
The preparation of a report of professional quality, based on a research project.
Su, Au, Wi. Sp Qtrs. Prereq: Sr standing in GeoSci and permission of instructor. Not open to students with credit for GeoSci 570. To be taken during the qtr the student intends to hand in the thesis.

580 Standards-Based Earth Science for Educators UGRD 1-5
Examination of selected essential geoscience topics through appropriate field, laboratory, and classroom activities.
Su Qtr. Prereq; 15 qtr hrs in physical or biological sciences, with 5 or hrs of introductory geological sciences recommended or permission of instructor. Repeatable to a maximum of 15 credits for the combination of GeoSci 580 and EarthSci 580, 212 and 550 or GeoSci 212 and 550 recommended. May not be used to satisfy BA or BS degree requirements in GeoSci.

581 Field Geology I UGRD 5
Concentrated training in the basic essentials of field observation and mapping; the work is done in central Utah, with headquarters in Ephram.
Su, Su Term 1 Qtrs. Prereq; 423, 530, or GeoSci 423, 530 and written permission of instructor. Requires full time of student. Not open to students who have credit for GeoSci 581.

582 Field Geology II UGRD 4
Continuation of 581.
Su, Su Term 2 Qtrs. Prereq; 581 or GeoSci 581. Requires full time of student. Not open to students with credit for GeoSci 582.

583.01 Field Geology for Educators: Appalachian Mountains UGRD 3
Application of geological principles and interpretation of Earth features in selected areas, with related research reports and teaching units.
Wi Qtr. 5 day field trip preceding the quarter, 4 pre-trip and 2 post-trip cl. Prereq; 100, GeoSci 100 or equiv and permission of instructor. Not open to students with credit for GeoSci 583.01. Intended primarily for in-service and pre-service teachers and education majors. May not be used to satisfy BS degree requirements in GeoSci.

583.02 Field Geology for Educators: Bahamas UGRD 3
Application of geological principles and interpretation of Earth features in selected areas, with related research reports and teaching units.
Wi Qtr. 5 day field trip following the quarter, 4 pre-trip and 2 post-trip cl. Prereq; 100, GeoSci 100 or equiv and permission of instructor. Not open to students with credit for GeoSci 583.02. Intended primarily for in-service and pre-service teachers and education majors. May not be used to satisfy BS degree requirements in GeoSci.

583.03 Field Geology for Educators: Lake Erie UGRD 3
Application of geological principles and interpretation of Earth features in selected areas, with related research reports and teaching units.
Su Qtr. 7 day field trip. Prereq; 100, GeoSci 100 or equiv permission of instructor. Not open to students with credit for GeoSci 583.03. Intended primarily for in-service and pre-service teachers and education majors. May not be used to satisfy BS degree requirements in GeoSci.

583.04 Field Geology for Educators: Unspecified UGRD 3
Application of geological principles and interpretation of Earth features in selected areas, with related research reports and teaching units.
Su, Au, Wi. Sp Qtrs. Field trip and cl. Prereq; 100, GeoSci 100 or equiv and permission of instructor. Not students with credit for 583.04. Intended primarily for in-service and pre-service teachers and education majors. May not be used to satisfy BS degree requirements in GeoSci.

584 Principles of Oceanography for Educators UGRD 3
Origin, development, and structure of ocean basins and their contents; contemporary oceanic processes of geologic significance.
Su Qtr. 1 week, full-time at Stone Lab. Prereq; 15 qtr hrs in physical sciences or biological sciences and permission of instructor. Intended for in-service teachers and education majors. May not be used to satisfy BS, MS, or PhD requirements in GeoSci. Not open to students with credit for 206 or GeoSci 206, or GeoSci 584. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

600 Sedimentology UGRD 5
Source, dispersal, and accumulation of sediments; the interpretation of the environmental distribution of sedimentary rocks.
Au, Wi. Qtrs. 4 1-hr cl, 1 2-hr lab. Prereq; 502 or GeoSci 502. Not open to students with credit for GeoSci 600.

601.01 Sedimentary Petrology: Sandstones UGRD 5
Identification and interpretation of sedimentary rocks based on mineralogical and textural study of thin sections and hand specimens.
3 cl, 2 2-hr labs. Prereq; 600 or GeoSci 600 or permission of instructor. Not open to students with credit for GeoSci 601.01.

601.02 Sedimentary Petrology: Carbonate Rocks and Shales UGRD 5
Identification and interpretation of sedimentary rocks based on mineralogical and textural study of thin sections and hand specimens.
3 cl, 2 2-hr labs. Prereq; 600 or GeoSci 600 or permission of instructor. Not open to students with credit for GeoSci 601.02.
120 Earth Sciences

602.01 Carbonate Depositional Systems I  UGRD 3
The study of carbonates in modern settings including the origin, composition, and identification of constituents and cement, and depositional environments.
Wi Qtr. 2 cl, 2 2-hr labs. Prereq: 502 or GeolSci 502 or 600 or Geosci 600, or equiv. Not open to students with credit for GeolSci 602.01.

602.02 Carbonate Depositional Systems II  UGRD 2
The field study of carbonates in a modern setting such as the Bahamas or southern Florida.
Sp Qtr. 7-day field trip preceding the qtr. Prereq: 602.01 or Geosci 602.01 and permission of instructor. Not open to students with credit for Geosci 602.02.

603 Stratigraphy  UGRD 5
Advanced study of the principles and procedures of stratigraphic nomenclature, subdivision, correlation, and interpretation, with examples from the international stratigraphic record.
3 cl, 2 2-hr labs. Prereq: 502 or Geosci 502. Not open to students with credit for Geosci 603.

604 Sequence Stratigraphy  UGRD 5
Advanced study of the principles and practice of sequence stratigraphy: cyclicity in the stratigraphic record; computer modeling of sedimentary patterns; and reservoir characterization.
4 cl, 1 2-hr lab, field trips. Prereq: 502 or Geosci 502 or equiv. Not open to students with credit for Geosci 604.

605 Biogeochemical Evolution of the Oceans  UGRD 5
Basic principles of stable and radiogenic isotope methods as applied to paleoenvironmental investigation of ancient sediments.
2 cl, 1 2-hr lab, 2 weekend field trips. Prereq: 502 or Geosci 502 or permission of instructor. Not open to students with credit for Geosci 605.

607 Fundamentals of Geographic Information Systems  UGRD 5
Basic principles of geographic and land information systems and their use in spatial analysis and information management.
Au Qtr. 3 cl, 3 1-hr lab. Prereq: Sr standing to open to students with credit for Geosci 607 or Geoc 685; or 607 in CRPlan, CivilEn, Geosc, or NatRes, Cross-listed in City and Regional Planning, Civil Engineering, Geodetic Science, Geography, and Natural Resources.

613 Micropaleontology  UGRD 5
Advanced consideration of the preservation, collection, laboratory methods, internships, and stratigraphic distribution of many groups of animal microfossils.
4 cl, 1 2-hr lab. Prereq: 501 or Geosci 501 or equiv. Not open to students with credit for Geosci 613.

614 Paleobiology  UGRD 5
Advanced consideration of palaeontological principles, palaeontological inference, and evolutionary theory, including patterns and processes, palaeoecology, numerical analysis, and fossilization.
Au Qtr. 4 cl, 1 2-hr lab. Prereq: 501 or Geosci 501 or equiv. Not open to students with credit for Geosci 614.

615 Paleoclimatology  UGRD 5
Concepts and numerical methods for the advanced treatment of autecology, marine community palaeoecology, and evolutionary paleoecology in the fossil record.
4 cl, 1 2-hr lab, 1 weekend field trip. Prereq: 614 or Geosci 614 or permission of instructor. Not open to students with credit for Geosci 615.

617 Petrology of Earth and Planets  UGRD 5
Interpretation of processes operating on Earth and on other planets from a petrological perspective.
1 cl, 4 2-hr labs. Prereq: 423 or Geosci 423 or equiv. Not open to students with credit for Geosci 617.

618 Advanced Historical Geology  UGRD 3
Principles of Historical-geological analysis and interpretation of Earth's physical, chemical, and biological history. 
3 cl. Prereq: 502 or Geosci 502 or equiv. Repeatable to a maximum of 18 or hrs for the combination of Geosci 618 and EarthSci 618.

620 Principles of Isotope Geology  UGRD 5
Theory of natural isotope abundance variations and applications to problems in the earth sciences.
5 cl. Prereq: Sr standing in Geosci or EarthSci or related fields. Not open to students with credit for Geosci 620.

621 Principles of Geochemistry  UGRD 5
Introduction to the chemistry of the solid Earth and hydrosphere describing the processes controlling the distribution of elements.
Au Qtr. 5 cl. Prereq: Sr standing in Geosci or EarthSci or related fields; Chem 123 or permission of instructor. Not open to students with credit for Geosci 621.

622 Stable Isotope Biogeochemistry  UGRD 5
Focus on theoretical and applied aspects of stable isotope biogeochemistry in the natural environment with emphasis on carbon, oxygen and nitrogen.
Prereq: Sr standing in any science program or grad standing in any of the sciences or permission of instructor. Not open to students with credit for Geosci 622.

624 Microscopy of Opaque Minerals  UGRD 3
Application of the petrographic microscope to the study of opaque minerals and ores, their identification, textures, and paragenesis.
3 cl, 2 2-hr labs. Prereq: 423 or Geosci 423. Not open to students with credit for Geosci 624.

625 Igneous Petrology  UGRD 5
 Petrography, petrogenesis, and occurrence of igneous rocks, with special emphasis on phase equilibria, macroscopic and microscopic examination of igneous and petrographic suites in the laboratory.
3 cl, 2 2-hr labs. Prereq: 423 or Geosci 423. Not open to students with credit for Geosci 625.

627 Global Biogeochemical Cycles  UGRD 5
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).
5 cl. Prereq: 621 or Geosci 621. Not open to students with credit for Geosci 627.

628 Environmental Isotope Geochemistry  UGRD 5
Use of natural and anthropogenic radioactivity and of natural variations in the isotope compositions of selected elements to study geochemical processes on the Earth's surface.
5 cl. Prereq: 621 or Geosci 621. Not open to students with credit for Geosci 628.

629 Principles of Petrology  UGRD 5
Application of physics, chemistry, and mathematics to the interpretation of igneous and metamorphic rocks.
5 cl. Prereq: Sr standing in Geosci or EarthSci or related fields, or permission of instructor. Not open to students with credit for Geosci 629.

630 Advanced Crystallography  UGRD 4
Point isometries, derivation of crystallographic point groups, space-lattice types, and crystallographic space-group types; crystallographic calculations emphasizing the metrical matrix and changes of basis.
2 2-hr cl. Prereq: 421 or Geosci 421 or equiv. Repeatable to a maximum of 12 or hrs for the combination of Geosci 630 and EarthSci 635.

636 Advanced Mineralogy  UGRD 4
Crystallography and crystal chemistry of the rock-forming aluminosilicates.
2 2-hr cl. Prereq: 521 or Geosci 521 or 414 or Geosci 414 or equiv. Not open to students with credit for Geosci 636.

637 X-Ray Diffraction  UGRD 3
Emphasis on diffraction by crystalline powders; factors affecting the position and intensity of diffraction maxima; applications include qualitative and quantitative analysis.
2 cl, 1 2-hr lab. Prereq: 414 or Geosci 414 or permission of instructor. Not open to students with credit for Geosci 637.

641 Geostatistics  UGRD 3
Application of statistical methods to geoscience data, including linear error propagation, least-squares estimation, confidence interval estimation, and analysis of variance.
5 cl. Prereq: 641 or Geosci 641 and Math 153, or written permission of instructor. Not open to students with credit for Geosci 641.

642 Geomathematical Analysis  UGRD 5
Principles of geoscientific analysis and computing, including digital inversion, factor analysis, discriminant analysis, spectral analysis, digital systems analysis, and presentation graphics for the earth sciences.
5 cl. Prereq: 641 or Geosci 641 and Math 153, or written permission of instructor. Not open to students with credit for Geosci 642.

644 Tectonic Evolution of Continents  UGRD 5
Survey of lithotectonic assemblages and structural associations in Archean, Proterozoic, and Phanerozoic orogenic terranes in relation to tectonic models for crustal evolution.
2 2.5-2-hr cl. Prereq: 423 or Geosci 423, 502 or Geosci 502, and 530 or Geosci 530; or written permission of instructor. Not open to students with credit for Geosci 644.

645 Advanced Structural Geology  UGRD 5
Mechanisms of deformation; dynamic and kinematic analysis of rock structures; field and laboratory methods of structural analysis.
1 2 cl, 1 2-hr lab, 3 1-day field trips. Prereq: 530 or Geosci 530 or equiv. Not open to students with credit for Geosci 645.

646 Geodynamics  UGRD 5
Application of mathematical and physical methods to the solution of geologic problems in heat flow, plate tectonics, interior dynamics, mountain building, ground-water flow, river mechanics.
5 cl. Prereq: 530 or Geosci 530 and written permission of instructor. Not open to students with credit for Geosci 646.

650 Glaciology  UGRD 5
Flow dynamics and mass balance of glaciers and ice sheets, with applications to understanding current changes and predicting future changes.
2 2-hr cl, 1 2-hr lab, field trip. Prereq: 550 or Geosci 550 or equiv., or permission of instructor. Not open to students with credit for Geosci 650.

651 Hydrogeology  UGRD 5
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.
Au Qtr. 4 cl, 1 2-hr lab, 1 all-day field trip. Prereq: 121 or Geosci 121 and Math 153. Not open to students with credit for Geosci 651.

652 Hydrologic Field Methods for Surface Water and Ground Water  UGRD 5
Field study of various ground water and surface water environments (rivers, lakes, wetlands) incorporating the use of hydrologic field equipment and testing procedures.
3 cl, 3 5-day field trips, 2 3-day field trips. Prereq: 651 or Geosci 651. Not open to students with credit for Geosci 652.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>600</td>
<td>Geology of Metallic Deposits</td>
<td>UGRD 5</td>
<td>Occurrence, origin, distribution, properties, and exploration for metallic deposits.</td>
</tr>
<tr>
<td>661</td>
<td>Petroleum Geology</td>
<td>UGRD 5</td>
<td>Petroleum Geology. Not open to students with credit for GeolSci 661.</td>
</tr>
<tr>
<td>663</td>
<td>Global Change and Sustainability in the Earth</td>
<td>UGRD 5</td>
<td>System</td>
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<td>Analysis of Earth systems, global environmental change and options for sustainability.</td>
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<td>Wi Qtr. 2, 2-hr cl, 1 2-hr lab. Prereq: Sr or grad standing in GeolSci or EarthSci, or permission of instructor; 203 or GeolSci 203 recommended. Not open to students with credit for GeolSci 663.</td>
</tr>
<tr>
<td>670</td>
<td>General and Economic Geology of Selected Areas</td>
<td>UGRD 3-5</td>
<td>Concentrated field study of the stratigraphy, structural geology, tectonics, petrology, and geomorphology of a selected region, with special attention to the economic utilization of earth materials.</td>
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<td>Au, Sp Qtr. 5 or 10-day field trip preceding or following the qtr. Post-trip readings and report required. Prereq: 502 or GeolSci 502, 530 or GeolSci 530, and 550 or GeolSci 550; or permission of instructor. Repeatable to a maximum of 15 cr hrs for the combination of GeolSci 670 and EarthSci 670.</td>
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<tr>
<td>674</td>
<td>Introduction to Applications of Elemental</td>
<td>GRAD 1</td>
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<td></td>
<td>Chemical Analysis and Electron Microscopy in</td>
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<td>Earth and Env</td>
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<td>Introduction to instrument facilities and how elemental chemical analysis and electron microscopy data can be applied to research in earth and environmental sciences.</td>
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<td>Au Qtr. 1 1 hr cl. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.</td>
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<td>1 cl, 1 2-hr lab arr. Prereq: Written permission of instructor. Not open to students with credit for GeolSci 675. Students use their own samples in lab. This course is graded S/U.</td>
</tr>
<tr>
<td>680</td>
<td>Advanced Geophysics</td>
<td>UGRD 5</td>
<td>Methods and techniques for study of Earth’s crust and interior, involving potential fields, seismology, and heat flow.</td>
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<td>Au Qtr. 4 cl, 1 2-hr lab. Prereq: 530 or GeolSci 530, Math 153, and Physics 133. Not open to students with credit for GeolSci 680.</td>
</tr>
<tr>
<td>686</td>
<td>Environmental Geophysics</td>
<td>UGRD 5</td>
<td>Principles and applications of geophysical techniques to environmental and site characterization in the shallow subsurface.</td>
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<td>4 cl, 1 2-hr lab. Prereq: 121 or GeolSci 121, Math 151, and Physics 131. Not open to students with credit for GeolSci 686.</td>
</tr>
<tr>
<td>687</td>
<td>Exploration Geophysics</td>
<td>UGRD 5</td>
<td>Geophysical practices in exploration; seismology and methods in sedimentary rocks; electrical methods in crystalline rocks; remote-sensing and potential-field methods in regional analysis.</td>
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<td>4 cl, 1 2-hr lab. Prereq: 121 or GeolSci 121, Math 151, and Physics 131. Not open to students with credit for GeolSci 687.</td>
</tr>
<tr>
<td>693.01</td>
<td>Individual Studies: Economic Geology</td>
<td>UGRD 1-5</td>
<td>Special problems in any branch of the earth sciences for which the student has the proper qualifications.</td>
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<td>Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs for the combination of GeolSci 693 and EarthSci 693. Courses repeatable in any combination of decimal subdivisions. This course is graded S/U.</td>
</tr>
<tr>
<td>693.02</td>
<td>Individual Studies: Engineering Geology</td>
<td>UGRD 1-5</td>
<td>Special problems in any branch of the earth sciences for which the student has the proper qualifications.</td>
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<td>Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs for the combination of GeolSci 693 and EarthSci 693. Courses repeatable in any combination of decimal subdivisions. This course is graded S/U.</td>
</tr>
<tr>
<td>693.03</td>
<td>Individual Studies: Earth and Planetary Sciences</td>
<td>UGRD 1-5</td>
<td>Special problems in any branch of the earth sciences for which the student has the proper qualifications.</td>
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<td>Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs for the combination of GeolSci 693 and EarthSci 693. Courses repeatable in any combination of decimal subdivisions. This course is graded S/U.</td>
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<tr>
<td>693.04</td>
<td>Individual Studies: Field Geology</td>
<td>UGRD 1-5</td>
<td>Special problems in any branch of the earth sciences for which the student has the proper qualifications.</td>
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<td>Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs for the combination of GeolSci 693 and EarthSci 693. Courses repeatable in any combination of decimal subdivisions. This course is graded S/U.</td>
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<tr>
<td>693.05</td>
<td>Individual Studies: Geochemistry</td>
<td>UGRD 1-5</td>
<td>Special problems in any branch of the earth sciences for which the student has the proper qualifications.</td>
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<td>Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs for the combination of GeolSci 693 and EarthSci 693. Courses repeatable in any combination of decimal subdivisions. This course is graded S/U.</td>
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<tr>
<td>693.06</td>
<td>Individual Studies: Geomorphology</td>
<td>UGRD 1-5</td>
<td>Special problems in any branch of the earth sciences for which the student has the proper qualifications.</td>
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<td>Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs for the combination of GeolSci 693 and EarthSci 693. Courses repeatable in any combination of decimal subdivisions. This course is graded S/U.</td>
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<tr>
<td>693.07</td>
<td>Individual Studies: Geophysics</td>
<td>UGRD 1-5</td>
<td>Special problems in any branch of the earth sciences for which the student has the proper qualifications.</td>
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<td>Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs for the combination of GeolSci 693 and EarthSci 693. Courses repeatable in any combination of decimal subdivisions. This course is graded S/U.</td>
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<tr>
<td>693.08</td>
<td>Individual Studies: Glaciology and Glacial</td>
<td>UGRD 1-5</td>
<td>Geology</td>
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<td>Special problems in any branch of the earth sciences for which the student has the proper qualifications.</td>
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<td>Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs for the combination of GeolSci 693 and EarthSci 693. Courses repeatable in any combination of decimal subdivisions. This course is graded S/U.</td>
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<tr>
<td>693.09</td>
<td>Individual Studies: History of the Geological</td>
<td>UGRD 1-5</td>
<td>Sciences</td>
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<td>Special problems in any branch of the earth sciences for which the student has the proper qualifications.</td>
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<td>Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs for the combination of GeolSci 693 and EarthSci 693. Courses repeatable in any combination of decimal subdivisions. This course is graded S/U.</td>
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<tr>
<td>693.10</td>
<td>Individual Studies: Hydrogeology</td>
<td>UGRD 1-5</td>
<td>Special problems in any branch of the earth sciences for which the student has the proper qualifications.</td>
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<td>Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs for the combination of GeolSci 693 and EarthSci 693. Courses repeatable in any combination of decimal subdivisions. This course is graded S/U.</td>
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<tr>
<td>693.11</td>
<td>Individual Studies: Marine Geology, Limnology,</td>
<td>UGRD 1-5</td>
<td>and Oceanography</td>
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<td>Special problems in any branch of the earth sciences for which the student has the proper qualifications.</td>
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<td>Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs for the combination of GeolSci 693 and EarthSci 693. Courses repeatable in any combination of decimal subdivisions. This course is graded S/U.</td>
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<tr>
<td>693.12</td>
<td>Individual Studies: Paleontology</td>
<td>UGRD 1-5</td>
<td>Special problems in any branch of the earth sciences for which the student has the proper qualifications.</td>
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<td>Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs for the combination of GeolSci 693 and EarthSci 693. Courses repeatable in any combination of decimal subdivisions. This course is graded S/U.</td>
</tr>
<tr>
<td>693.13</td>
<td>Individual Studies: Petrology and Petrography</td>
<td>UGRD 1-5</td>
<td>Special problems in any branch of the earth sciences for which the student has the proper qualifications.</td>
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<td>Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs for the combination of GeolSci 693 and EarthSci 693. Courses repeatable in any combination of decimal subdivisions. This course is graded S/U.</td>
</tr>
<tr>
<td>693.14</td>
<td>Individual Studies: Remote Sensing and</td>
<td>UGRD 1-5</td>
<td>Geographic Information Systems</td>
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<td>Special problems in any branch of the earth sciences for which the student has the proper qualifications.</td>
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<td>Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs for the combination of GeolSci 693 and EarthSci 693. Courses repeatable in any combination of decimal subdivisions. This course is graded S/U.</td>
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<tr>
<td>693.15</td>
<td>Individual Studies: Sedimentation</td>
<td>UGRD 1-5</td>
<td>Special problems in any branch of the earth sciences for which the student has the proper qualifications.</td>
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<td>Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs for the combination of GeolSci 693 and EarthSci 693. Courses repeatable in any combination of decimal subdivisions. This course is graded S/U.</td>
</tr>
<tr>
<td>693.16</td>
<td>Individual Studies: Stratigraphy</td>
<td>UGRD 1-5</td>
<td>Special problems in any branch of the earth sciences for which the student has the proper qualifications.</td>
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<td>Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs for the combination of GeolSci 693 and EarthSci 693. Courses repeatable in any combination of decimal subdivisions. This course is graded S/U.</td>
</tr>
</tbody>
</table>
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693.17 Individual Studies: Structural Geology UGRD 1-5
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 45 cr hrs for the combination of GeolSci 693 and EarthSci 693. Courses repeatable in any combination of decimal subdivisions. This course is graded S/U.

693.18 Individual Studies: Earth Science Education UGRD 1-5
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 45 cr hrs for the combination of GeolSci 693 and EarthSci 693. Courses repeatable in any combination of decimal subdivisions. This course is graded S/U.

693.19 Individual Studies: Unspecified UGRD 1-5
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 45 cr hrs for the combination of GeolSci 693 and EarthSci 693. Courses repeatable in any combination of decimal subdivisions. This course is graded S/U.

693.20 Individual Studies: Global Change UGRD 1-5
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 45 cr hrs for the combination of GeolSci 693 and EarthSci 693. Courses repeatable in any combination of decimal subdivisions. This course is graded S/U.

693.21 Individual Studies: Sustainability UGRD 1-5
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 45 cr hrs for the combination of GeolSci 693 and EarthSci 693. Courses repeatable in any combination of decimal subdivisions. This course is graded S/U.

693.22 Individual Studies: Neotectonics UGRD 1-5
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 45 cr hrs for the combination of GeolSci 693 and EarthSci 693. Courses repeatable in any combination of decimal subdivisions. This course is graded S/U.

693.23 Individual Studies: Mineralogy UGRD 1-5
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 45 cr hrs for the combination of GeolSci 693 and EarthSci 693. Courses repeatable in any combination of decimal subdivisions. This course is graded S/U.

693.24 Individual Studies: Mineral Physics UGRD 1-5
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 45 cr hrs for the combination of GeolSci 693 and EarthSci 693. Courses repeatable in any combination of decimal subdivisions. This course is graded S/U.

694 Group Studies UGRD 1-5
Group study of special topics in various fields of the geological sciences.

699 Undergraduate Research in Earth Sciences UGRD 1-15
Undergraduate research or creative activities in variable topics.
Su, Au, Wi, Sp. Otr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs for the combination of GeolSci 699 and EarthSci 699. This course is graded S/U.

703 Principles of Biostratigraphy UGRD 3
Principles of zonal and azonal biostratigraphy; definition, identification, and correlation of standard biostratigraphic units; quantitative development of chronostratigraphically significant azonal frameworks.
3 cl. Prereq: 501 or GeolSci 501 or 613 or GeolSci 613 or 614 or Geo Sci 614, and 603 or GeolSci 603 or equiv, or written permission of instructor. Not open to students with credit for GeolSci 703.

713 Taxonomy and Phylogeny in the Fossil Record UGRD 3
Theory and practice of taxonomy and phylogenetic reconstruction as applied to organisms in the fossil record.
3 cl. Prereq: 614 or GeoSci 614 or permission of instructor. Not open to students with credit for GeolSci 713.

714 Biometry UGRD 3
Biometric principles and methods as applied to the solution of taxonomic, ontogenetic, and evolutionary problems in the fossil record.
3 cl. Prereq: 614 or GeoSci 614, and 641 or GeoSci 641, or equiv, or permission of instructor. Not open to students with credit for GeoSci 714.

717 Critical Issues in World Freshwater Resources UGRD 5
Examination of major issues relating to the world's freshwater resources; consideration of increasing water needs with a diminishing supply.
3 cl, 2 labs. Prereq: 651 or GeoSci 651, 752 or GeoSci 752 recommended. Not open to students with credit for GeoSci 717.

718 Aquatic Geochemistry UGRD 5
Examination of the processes that control chemical equilibria in natural waters: acid/base reactions, metal complexation/speciation and oxidation-reduction processes.
3 cl, Prereq: 2 2-hr cl, 1 1-hr rec. Prereq: Chem 122 and Math 152; or equivs. Not open to students with credit for GeoSci 718.

719 Environmental Organic Geochemistry UGRD 5
Fate and distribution of organic pollutants in the environment including aqueous solubility, vapor pressure, air/water, air/solvent and soil/water partial coefficients.
Au. Qtr. 5 cl. Prereq: 718 or GeoSci 718, and Chem 520 or permission of instructor. Intended for students in GeoSci., EarthSci, CivilEn, and the Grad Environmental Sci Program. Not open to students with credit for GeoSci 719.

720 Noble Gas Geochemistry UGRD 4
Application of noble gas, K-Ar, and Ar/Ar 39hr research methods to geological and geochemical problems.
4 cl. Prereq: 620 or GeoSci 620 or equiv, or written permission of instructor. Not open to students with credit for GeoSci 720.

725 Isotope Geochemistry of Igneous and Metamorphic Systems UGRD 4
Advanced study of the principles, methods, and applications of isotope geochemistry to igneous and metamorphic processes and the origin and evolution of the Earth.
4 cl. Prereq: 620 or GeoSci 620 or equiv or written permission of instructor, 625 or GeoSci 625 recommended. Not open to students with credit for GeoSci 725.

746 Rheological Properties of Solids UGRD 3
Principles of rheology of solids and empirical studies of brittle and ductile deformation mechanics, with special reference to applications to crust and mantle problems and glacial flow.
3 cl., Prereq: 530 or GeoSci 530. Not open to students with credit for GeoSci 746.

750 Palaeoclimatology GRAD 5
Examination of climate records in ice, lake and marine cores, tree rings, corals and historical records for a global perspective of Quaternary climate change.
2 2-hr cl, 1 1-hr rec. Prereq: Grad standing or permission of instructor. Not open to students with credit for GeoSci 750. BPCR facilities for recitation demonstrations.

751 Quantitative Ground-Water Flow Modeling UGRD 5
Principles of analytical and numerical techniques in modeling ground-water flow in porous media, development of two- and three-dimensional steady-state and transient flow codes.
4 cl, 1-2 hr lab. Prereq: 651 or GeoSci 651. Not open to students with credit for GeoSci 751.

752 Contaminants in Aqueous Systems UGRD 5
Examination of the occurrence, fate, and transport of contaminants in waters; emphasis on concepts of fluid flow and mass transport along with practical problems.
4 cl, 1-2 hr lab, 2 all-day field trips. Prereq: 651 or GeoSci 651. Not open to students with credit for GeoSci 752.

754 Risk Assessment and Management in Earth Systems UGRD 5
Quantitative risk assessment for geologic processes and human activities by applying numerical modeling approaches.
2 2-hr cl, 1-2 hr lab. Prereq: 651 or GeoSci 651 or appropriate course in engineering or environmental sciences, or permission of instructor. Not open to students with credit for GeoSci 754.

779 Physical Properties of Minerals and Rocks UGRD 3
Quantitative survey of electrical, magnetic, elastic, inelastic, radioactive, thermal, density, and seismic properties and chemical compositions of rocks and minerals.
3 cl. Prereq: 421 or GeoSci 421, 680 or GeoSci 680, and 617 or GeoSci 617; or equivs; or written permission of instructor. Not open to students with credit for GeoSci 779.

780 Reflection Seismology UGRD 3
Reflection Seismology.
Not open to students with credit for GeoSci 780.

781 Gravimetry UGRD 3
Analytical treatment of concepts and methods of gravimetry; introductory theory of gravitational potential; geological interpretation of gravity data.
3 cl. Prereq: 680 or GeoSci 680 or written permission of instructor. Not open to students with credit for GeoSci 643, GeoSci 643, or GeoSci 781.

782 Magnetostratigraphy GRAD 3
Advanced magnetic theory and practice applied to investigations of the subsurface, including interpretation of surface, airborne, and satellite magnetic measurements.
3 cl. Prereq: 680 or GeoSci 680 or written permission of instructor. Not open to students with credit for GeoSci 782.

784 Paleomagnetism UGRD 3
Physical and mineralogical basis for permanent magnetization in rocks, physical basis of measurement, geological basis for sampling, and geological constraints on interpretation of results.
3 cl. Prereq: 680 or GeoSci 680 or equiv or written permission of instructor. Not open to students with credit for GeoSci 784.
800 Seminar in Stratigraphy and Basin Analysis  GRAD  1-3
Consideration of current and classical problems and procedures in biostratigraphic and lithostratigraphic analysis and synthesis.  
1-3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs for the combination of GeolSci 800 and EarthSci 800.

801 Seminar in Sedimentology  GRAD  1-3
Consideration of sedimentation, and the structures, petrographic, depositional environments, and paleontologic interpretation of sedimentary rocks.  
1-3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs for the combination of GeolSci 801 and EarthSci 801.

810 Seminar in Paleobiology  GRAD  1-3
Advanced topics in paleozoologic and paleobotanic morphology, taxonomy, and procedure; current questions in biostratigraphy, paleoecology, and evolutionary development of fossil floras and faunas.  
1-3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs for the combination of GeolSci 810 and EarthSci 810.

821 Seminar in Isotope Geology and Geochemistry  GRAD  1-3
Discussion of selected topics in isotope geology, geochemistry, and cosmochemistry.  
1-3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs for the combination of GeolSci 821 and EarthSci 821.

822 Seminar in Mineralogy, Mineral Physics, and Petrology  GRAD  1-3
Selected topics in optical mineralogy and igneous, sedimentary, and metamorphic petrology.  
1-3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs for the combination of GeolSci 822 and EarthSci 822.

824 Seminar in Structural Mineralogy  GRAD  1-3
Seminar in Structural Mineralogy. Repeatable to a maximum of 18 cr hrs for the combination of GeolSci 824 and EarthSci 824.

840 Seminar in Structural Geology  GRAD  1-3
Selected topics in structural geology, rock deformation, and geotectonics.  
1-3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs for the combination of GeolSci 840 and EarthSci 840.

850 Seminar in Geomorphology and Quaternary Geology  GRAD  1-3
Topics on formation of fluvial, desert, coastal, volcanic, mass wasting, weathering, periglacial and glacial landforms; interpretation of Quaternary processes and history in field and classroom  
1 3-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs for the combination of GeolSci 850 and EarthSci 850.

851 Seminar in Hydrogeology and Oceanography  GRAD  1-3
Topics in hydrogeology and oceanography, such as ground-water hydrology and hydraulics, basin management, reef and atoll development, or paleo-oceanography.  
1-3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs for the combination of GeolSci 851 and EarthSci 851.

860 Seminar in Mineralogy and Energy Resources  GRAD  1-3
Study of selected deposits of metallic minerals, industrial rocks, and minerals and fossil fuels.  
1-3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs for the combination of GeolSci 860 and EarthSci 860.

874 Seminar in History of Geologic Concepts  GRAD  1-3
Investigation of geoscience concepts and techniques, of the early literature and of geoscience leaders to provide a firm basis for comprehension of modern science.  
1-3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs for the combination of GeolSci 874 and EarthSci 874.

880 Seminar in Geophysics  GRAD  1-3
Investigation and discussion of recent developments in geophysics, including exploration geophysics, glaciology, solid-earth geophysics, paleomagnetism, tectonics, or engineering evaluation.  
1-3 cl. Prereq: Written permission of instructor. Repeatable to a maximum of 18 cr hrs for the combination of GeolSci 880 and EarthSci 880.

888 Colloquium in the Earth Sciences  GRAD  1
Discussion of current research in the earth sciences.  
Au Wi Sp Qtr. 1 cl. Prereq: Grad standing in GeolSci or EarthSci. Repeatable to a maximum of 8 cr hrs for the combination of GeolSci 888 and EarthSci 888. This course is graded S/U.

896 Interdepartmental Seminar in Polar and Alpine Studies  GRAD  1-3
Selected topics of instructor’s choice including anthropology, biology, climatology, exploration, geography, glaciology, global change, resources and soils.  
1 cl. Prereq: Permission of instructor. Not open to students with credit for GeolSci 896. Given cooperatively by the Byrd Polar Research Center, the College of Biological Sciences, the School of Earth Sciences, and the departments of Geography, and EEOS.

999 Research in the Earth Sciences  GRAD  1-18
Research for thesis and dissertation purposes only.  
Su, Au, Wi, Sp Qtr. Repeatable. This course is graded S/U.

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East Asian Languages and Literatures

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131 East Asian Humanities  UGRD  5
Introduction to the contemporary and traditional cultures of China, Korea, and Japan taught through readings, films, demonstrations, and discussions.  
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

293 Individual Studies  UGRD  1-5
Individual investigation of problems in East Asian cultures, languages, and literatures.  
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

294 Group Studies  UGRD  1-10
Special group studies course in some special area of East Asian language, literature, or culture.  
Su, Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 20 cr hrs.

323 The Buddhist Tradition  UGRD  5
History and structure of Buddhism from founding to present in Southeast, South East, and East Asia; emphasis on rituals, beliefs, and local and regional variations.  
5 cl. Prereq: RelStds or CompStd 270; CompStd 202.01 or 202.02 recommended. Not open to students with credit for RelStds or CompStd 323. Cross-listed in Comparative Studies.

341 Thought in China, Korea, and Japan  UGRD  5
The shaping of three cultures; essentials of the major traditional schools of thought in China, Korea, and Japan and their impact on society.  
Au, Wi, Sp Qtrs. 5 cl. GEC arts and humanities and ideas and social diversity - international issues (Global) course.

346 Asian American Film  UGRD  5
Introduction to Asian American cinema from the 1960s to the present, including documentaries, feature films, and experimental films.  
Au, Wi, Sp Qtrs. 2 2-hr cl. GEC arts and human VPA course.

357 East Asian Folklore  UGRD  5
Diverse folk traditions in China, Korea, and Japan; relevant theory; song, narrative, epic, dance, ritual, material culture, tourism; emphasis on local and ethnic cultures. Taught in English.

399H East Asian Thought in the Western Imagination, 1600-2000  UGRD  5
Examination of the construction and impact of Buddhism, Confucianism, and Taoism on a number of Western disciplines, including religion, philosophy, literature, economics, and science.  
Au, Wi, Sp Qtrs. 2 2-hr cl.

601 Classical Tibetan I  GEC  5
Introduction to the basics of classical Tibetan script, pronunciation, and grammar.  
Au Qtr. 2 1.5-hr cl. Repeatable to a maximum of 15 cr hrs. Taught with real-time videoconferencing delivery.

602 Classical Tibetan II  GEC  5
Introduction to classical Tibetan grammar.  
Wi Qtr. 2 1.5-hr cl. Prereq: 601. Repeatable to a maximum of 15 cr hrs. Taught with real-time videoconferencing delivery.

603 Classical Tibetan III  GEC  5
Acquaints learners with classical Tibetan grammar and exposes them to introductory readings in the literature.  
Sp Qtr. 2 1.5-hr cl. Prereq: 602. Repeatable to a maximum of 15 cr hrs. Taught with real-time videoconferencing delivery.

675 Women Writers, Culture, and Society in East Asia  GEC  5
Close examination of representative works of major women writers from China, Japan, and Korea in the cultural and ideological context of each country.  
Au, Wi, Sp Qtrs. 2 2-hr cl. No knowledge of East Asian languages is required. All reading materials are in English.

677 Performance Traditions in Contemporary East Asia  GEC  5
Introduction to performance traditions of East Asia (China, Korea, and Japan) as they are practiced today; ethnographic methods.  
Au, Wi, Sp Qtrs. 2 2-hr cl.

683 Scripts of East Asia  GEC  5
A critical survey of writing systems that use Chinese characters, popular and scholarly myths about them, and their impact on the history of ideas.  
Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: Chinese or Japanese 103, or permission of instructor.

693 Individual Studies  GEC  1-5
Individual investigation of East Asian cultures, languages, and literatures.  
Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept chairperson. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

694 Group Studies  GEC  1-5
Special topics to be announced in the quarter previous to the one in which the course is offered  
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.
124 East Asian Languages and Literatures

697 Study at a Foreign Institution UGRD 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtr. Arr. Prereq: Written permission of chairperson. Repeatable to a maximum of 45 cr hrs. This course is Progress (P) graded. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

700 Learning East Asian Languages in Cross-Cultural Contexts: College Level GRAD 4
Principles and practices of teaching an East Asian language as a foreign language at post-secondary level American academic institutions.
Su Qtr. 5 cr. Prereq: High-level competency in the target East Asian language, concurrent registration in 703 and 704, and permission of instructor. Repeatable to a maximum of 8 cr hrs.

701 Pedagogical Syntax for East Asian Languages UGRD 5
Training in the presentation of grammar in East Asian language classes; special attention given to problems of translating linguistic studies into teachable units.
Su, Au, Wi, Sp Qtr. 2.5 cr. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

702 Materials Preparation for East Asian Languages UGRD 5
Preparation of materials for teaching Chinese, Japanese, and Korean; emphasis on the special problems faced by English-speaking students in learning these languages.
Au, Wi, Sp Qtrs. 5 cr. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

703 Presentation of East Asian Languages and Cultures: College Level UGRD 4
Preparation and presentation of curriculum and syllabus for East Asian language program at the college level.
Su Qtr. 5 cr. Prereq: High-level competency in the target East Asian language, concurrent registration in 700 and 704, and permission of instructor. Repeatable to a maximum of 8 cr hrs.

704 Teaching Practicum in East Asian Languages: College Level UGRD 3-7
Training as a classroom teacher through practice teaching to college students and the observation of classes taught by trainees and master teachers.
Su, Au, Wi, Sp Qtrs. 10 cr. Prereq: High-level competency in the target East Asian language, and permission of instructor. Repeatable to a maximum of 10 cr hrs.

705 Seminar in the Learning of East Asian Languages and Cultures UGRD 5
Critical analysis and discussion of insights and theories from various disciplines relevant to the pedagogy of East Asian languages and cultures.
Su, Au, Wi, Sp Qtrs. 2 hr cl. Prereq: High level competency in an East Asian language, grad standing or advanced undergrad standing, and permission of instructor. Repeatable to a maximum of 10 cr hrs.

710 Learning East Asian Languages in Cross-Cultural Contexts: High School Level GRAD 2
Principles and practices of teaching an East Asian language as a foreign language in American high schools.
Su Qtr. 5 cr per week for 4 weeks. Prereq: Intermediate to high competency in the target East Asian language, concurrent registration in 713 and 714, and permission of instructor. Repeatable to a maximum of 4 cr hrs.

713.01 Presentation of East Asian Languages: High School Level: Year One GRAD 2
Principles and practices of an East Asian language at the high school level.
5 cr per week for 4 weeks. Prereq: Intermediate to high competency in the target East Asian language, concurrent registration in 710 and 714.01, and permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is Progress (P) graded. Credit will be given upon completion of 713.02.

713.02 Presentation of East Asian Languages: High School Level: Year Two GRAD 1
Principles and practices of an East Asian language at the high school level.
5 cr per week for 2 weeks. Prereq: Intermediate to high competency in the target East Asian language, 710 and 713.01, concurrent registration in 714.02, and permission of instructor. Repeatable to a maximum of 6 hrs this course is Progress (P) graded.

714.01 Teaching Practicum in East Asian Languages: High School Level: Year One GRAD 2
Training as a classroom teacher through practice teaching to high school students and the observation of classes taught by trainees and master teachers.
10 cr per week for 4 weeks. Prereq: Intermediate to high competency in the target East Asian language, concurrent registration in 710 and 713.01, and permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is Progress (P) graded.

714.02 Teaching Practicum in East Asian Languages: High School Level: Year Two GRAD 2
Training as a classroom teacher through practice teaching to high school students and the observation of classes taught by trainees and master teachers.
10 cr per week for 2 weeks. Prereq: Intermediate to high competency in the target East Asian language, 710 and 714.01, concurrent registration in 713.02, and permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is Progress (P) graded.

797 Introduction to Graduate-level East Asian Studies GRAD 5
We explore the origin, 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 History 797 or HistArt 797. Cross-listed in History and History of Art.

801 Teaching East Asian Languages at the College Level GRAD 5
Methods and techniques of teaching college-level East Asian languages; selection and preparation of teaching, testing, and laboratory materials; observation of a variety of language classes.
Au Qtr. Two wk intensive workshop previous to qtr followed by a 2-hr wkly cl. Prereq: Permission of instructor. Not open to students with credit for Chinese or Japanese 801. For students enrolled in this course, the minimum number of cr hrs required for graduation is increased by 5 hrs.

859 Analytical Methods GRAD 5
Introduction to the literary and linguistics analysis of Chinese and Japanese texts.
Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: Chinese or Japanese 800.

East European Languages and Literatures

294 Group Studies UGRD 1-5
Topics related primarily to Albanian, Estonian, Hungarian, Latvian, and Lithuanian. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. Each language repeatable to a maximum of 20 cr hrs.

671 Grammar of Selected East European Languages UGRD 1-5
Fundamentals of grammar as required for reading one of the following: Albanian, Estonian, Hungarian, Latvian, Lithuanian, or Romanian. Prereq: Permission of instructor. Repeatable to a maximum of 25 cr hrs. Individual languages not repeatable.

672 Reading of Selected East European Languages UGRD 5
Reading of elementary and intermediate texts and translating into English one of the following: Albanian, Estonian, Hungarian, Latvian, Lithuanian, or Romanian. Prereq: 671 (same language) or equiv, and permission of instructor. Repeatable to a maximum of 25 cr hrs. Individual languages not repeatable.

693 Individual Studies UGRD 1-10
Topics related primarily to Albanian, Estonian, Hungarian, Latvian, Lithuanian, and Romanian. Prereq: 671 (same language) or equiv, and permission of instructor. Repeatable to a maximum of 20 cr hrs. Including cr hrs earned in 693.40. This course is graded S/U.

694 Group Studies UGRD 1-10
Topics related primarily to Albanian, Estonian, Hungarian, Latvian, Lithuanian, and Romanian. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

697 Study at a Foreign Institution UGRD 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of chairperson. Repeatable to a maximum of 45 cr hrs. This course is Progress (P) graded. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

Economics

110.01 Basic Economic Concepts: Current Economic Events in Historical Perspective UGRD 5
Discuss current issues in the political economy within a historical framework, including such topics as taxes and unemployment. Intended for students who desire a one-course introduction to economics. GEC soc sci human, natural, and economic resources course.

110.02 Basic Economic Concepts: Freakonomics UGRD 5
Discuss current social problems and issues within an economics framework, including topics such as job discrimination and integration. Intended for students who desire a one-course introduction to economics. GEC soc sci human, natural, and economic resources course.

110.03 Basic Economic Concepts: Economics of the Internet UGRD 5
Rise of new electronic technology; operation of markets; online shopping; auctions; trading; the evolution of the world economy; and economic growth. Intended for students who desire a one-course introduction to economics. GEC soc sci human, natural, and economic resources course.

200 Principles of Microeconomics UGRD 5
Introduction to economic theory: supply and demand for goods and services; market structure; the distribution of income. 200H (honors) may be available.
Su, Au, Wi, Sp Qtrs. 2 2-hr cl. First required course for students planning to take 500-level courses in Econ. GEC soc sci human, natural, and economic resources course. SS Admis Cond course.
201 Principles of Macroeconomics  
Theory of national income determination; economic fluctuations; money; government policy; international economics. 201H (honors) may be available. 
Su, Au, Wi, Sp Otrs. 2-2 hr cl. Not open to students with credit for 400. GEC soc sci organizations and polities course.

271H Law and Economics  
Study of the use of economic analysis to understand the sources of legal rules and the effect of those rules on society. Wi Qtr. 2-2 hr cl. Prereq: Honors program or permission of department or instructor; 200H recommended.

294 Group Studies  
Current problems not covered in other courses; application of economic analysis of scarcity and choice of current policy significance. 2-2 hr cl. Prereq: 100 or 200 or equiv. Repeatable to a maximum of 10 cr hrs.

348 Ethics and Social Responsibility in Economic Life  
Examines the role of ethical norms and social constraints in determining economic outcomes. At least one of these courses (Econ 110.01 or 110.02 or 110.03 or 200 or 201) is recommended. GEC soc sci individuals and groups course.

367.01 Second Writing Course: The American Economy in the 20th Century  
Survey of major economic developments in the American economy during the 20th century. Au, Wi Qtrs. Prereq: 200 and 201 or 400, or equivs. GEC second writing and soc sci organizations and polities course.

367.02 Second Writing Course: Current Economic Issues in the United States  
Study of problems currently facing the U.S. economy. Su, Au, Wi, Sp Qtrs. Prereq: 200 and 201 or 400, or equivs. GEC second writing and soc sci organizations and polities course.

371 Economics and the Law  
Course covers the ways in which economic theory can be used to understand what the legal system does and where our laws come from. 2-2 hr cl. Prereq: 200 recommended.

443 The Analysis and Display of Data  
Analysis of data; introduction to the internet; introduction to techniques in the graphical presentation of data; designed for economics and international studies majors. Sp Qtr. 2-2 hr cl, lab arr. Prereq: Stat 145 or 245, or AEDEcon 205 or equiv.

447 Economics of Crime  
Investigates incentives and deterrents to criminal activity with respect to general economic conditions and analyzes the effectiveness of public policies designed to deter crime. Sp Qtr. 2-2 hr cl. Prereq: 200.

482 The Economics of Gender in Labor Markets  
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. Au Qtr. 2-2 hr cl. Prereq: 200. GEC social diversity in the US course.

485 Diversity Economics  
Examines race, gender, and ethnicity in labor markets; impact of labor market discrimination and differences in human capital acquisition on labor market outcomes. Sp Qtr. 2-2 hr cl. Prereq: 200. GEC social diversity in the US course.

501.01 Intermediate Microeconomic Theory  
Theory of consumer behavior; theory of the firm; costs and production; factor price determination; general equilibrium. Prereq: 200 and 201 or 400, or equivs.

501.02 Intermediate Microeconomic Theory  
Theory of consumer behavior; theory of the firm; costs and production; factor price determination; general equilibrium. Prereq: 200 and 201 or 400, or equivs.; designates a calculus based version which requires Math 132 or 151 or 152 or 153 or 161 or 162 or 263 or 263H or 190H, or equiv, or permission of instructor.

502.01 Intermediate Macroeconomic Theory  
Analysis of the determinants of national output, income and employment levels; theory of economic growth and progressive equilibrium in an economy. Prereq: 200 and 201 or 400, or equivs.

502.02 Intermediate Macroeconomic Theory  
Analysis of the determinants of national output, income and employment levels; theory of economic growth and progressive equilibrium in an economy. Prereq: 200 and 201 or 400, or equivs.; Designates a calculus based version which requires Math 132 or 151 or 152 or 153 or 161 or 162 or 263 or H263 or H190, or equiv, or permission of instructor.

505 Experimental Economics  
Develops techniques of experimental economics to study individual decision-making, game theory and behavior within markets. Sp Qtr. 2-2 hr cl. Prereq: 200.

508 Comparative Economic Systems  
Principles and institutions for economic decision making under capitalism, socialism, communism, and mixed systems; comparison of selected countries. *Wi Qtr. 2-2 hr cl. Prereq: 200 and 201 or 400, or equivs. Not open to students with credit for 690. GEC third writing and social diversity - international issues (Global) course.

515 World Economic Development in Historical Perspective I  
First course in a survey of economic development from the middle ages through the 20th century. Au, Sp Qtrs. 2-2 hr or 4-1 hr cl. Prereq: 200 and 201 or 400, or equivs. GEC social diversity - international issues (Global) and historical survey course.

516 World Economic Development in Historical Perspective II  
Second course in a survey of economic development from the middle ages through the 20th century. Au, Wi, Sp Qtrs. 2-2 hr or 4-1 hr cl. Prereq: 515. GEC social diversity - international issues (Global) and historical survey course.

520 Money and Banking  
Organization, operation, and economic significance of our monetary and banking system; special reference to current conditions and problems. 520H (honors) may be available. Su, Au, Wi, Sp Qtrs. 2-2 hr cl. Prereq: 200 and 201 or 400, or equiv.

530 Government Finance in the American Economy  
Analysis of fiscal institutions and decision making in the public sector of the American economy; budget planning and execution; taxation, debt, and fiscal policy. Au, Wi, Sp Qtrs. 2-2 hr cl. Prereq: 200.

531 State and Local Government Finance  
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: Econ 530 or PubAffrs 730 or equiv. Not open to students with credit for PubAffrs 531. Cross-listed in PubAffrs.

532 Public Expenditure and Cost-Benefit Analysis  
Economics of public choice, public goods, non-market allocations, collective decision-making, and net-benefit maximization; case studies. Wi Qtr. 4 cl. Prereq: 200.

537 Middle Eastern Economic Development  
Economic conditions, problems, integrations and potentials of Middle Eastern economies using principles of economic development and growth models. Sp Qtrs. 2-2 hr cl. Prereq: 200 or AEDEcon 200. Not open to students with credit for AEDEcon 437, IntStds 437, AEDEcon 537, or IntStds 537. Cross-listed in Agricultural, Environmental, and Developmental Economics and International Studies.

547 Economics of War  
Concepts of economics are applied to war and conflict, defense spending alliance building, the arms trade, peacekeeping, terrorism, and weapons of mass destruction proliferation. Sp Qtr. Prereq: 200 and 201.

550 Economic Development  
Empirical and theoretical consideration of long-term economic changes, including changes in industrial structure, technology, and level of national product; emphasis on developing economies. Au, Wi Qtrs. 2-2 hr cl. Prereq: 200 and 201, or equivs. Not open to students with credit for 610 or 650.

553 Economics of Population  
Uses economic principles to analyze population growth, fertility, mortality, mating, dating, marriage, teen pregnancy, divorce and migration. Sp Qtr. 2-2 hr cl. Prereq: 200.

556 Cooperation and Conflict in the Global Economy  
The economic, social, and political bases for and responses to increasing global economic integration. 556H (honors) may be available. Sp Qtr. 2-2 hr cl. Prereq: 200 and 201 or 400, or equivs. Not open to students with credit for IntStds 556. Cross-listed in International Studies.

560 International Economic Relations  
Survey of international economic relations; the basis of world trade; commercial and financial policy, particularly of the United States; and recent international economic organization. Su, Wi Qtrs. 2-2 hr cl. Prereq: 200 and 201 or 400, or equivs. Not recommended for students who plan to take 665 and 669.

570 Government and Business  
Economic and legal aspects of government regulation of business in the United States; philosophies and concepts of public control; contemporary problems. Au, Wi Qtrs. 2-2 hr cl. Prereq: 200.
126 Economics

580 Labor Economics and Industrial Relations UGRD 5
Survey of the field of labor economics; trade unionism, collective bargaining; wage determination, employment, unemployment; labor legislation.
Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 200.

593 Economics of Sports UGRD 5
Analysis of economic and business aspects of sports teams and their strategic interactions in sports markets.
Wi Qtr. 2 2-hr cl. Prereq: 200.

589 Internships UGRD 1-5
Allow students to apply knowledge from their economics courses and learn from hands on experience in approved positions.
Su, Au, Wi, Sp Qtrs. Prereq: 200 and 201 with a competitive GPA (many internships require a 3.2 or above but this is not required) open to juniors and seniors, approval of DUS. Applies toward an Econ 500 level elective, 5 credit hours maximum toward major. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

592 Housing Economics UGRD 5
The study of housing markets using the tools of economics. Demand and supply, prices and appreciation, ownership and renting, government policy, and brokerage.
Sp Qtr. 2 2-hr cl. Prereq: 200 or AEDEcon 200.

594 Group Studies UGRD 5
Topics vary from quarter to quarter and will be announced in advance.
2 2-hr cl. Prereq: 200 and/or 201. Repeatable to a maximum of 15 cr hrs.

596H Honors Seminar in Economics UGRD 5
Prepares students to write an undergraduate thesis. Group discussion of research problems, methods, and strategies.
Wi Qtr. 1 2-hr cl. Prereq: Honors program enrollment or permission of instructor.

597.01 Issues of the Undergraduate Economy UGRD 5
Focuses on the informal sectors of the underground economy: illegal drugs, arms sales and human trafficking. Applies economic reasoning to analyze these social issues.
Wi Qtr. 2 2-hr cl. Prereq: 200 or 201 recommended and minimum rank junior. GEC contemporary world course.

601 Game Theory in Economics UGRD 5
Game theory and applications to strategic situations.
Au, Sp Qtrs. 2 2-hr or 4 cl. Prereq: 501 and Math 132 or 151 or 153 or 161 or 152 or 162 or 263 or 263H or 190E, or equiv.

613 Economic History of the United States UGRD 5
General survey from discovery of America to present; European economic background; westward movement and its effects; development of economic institutions in the United States.
Au, Sp Qtrs. 2 2-hr cl. Prereq: 444 or 641, or Stat 245, 501 and 502; or grad standing.

614 Economic History of Western Europe UGRD 5
Survey from 1750 through the post-World War II period; from Britain in the West to Russia in the East.
Wi Qtr. 2 2-hr cl. Prereq: 444 or 641, or Stat 245, 501 and 502; or grad standing.

615 Economic Transitions in the 20th Century UGRD 5
Surveys major themes in transitioning economies in the 20th century; focus on planned economies and developing economies as they integrate into world economy.
Sp Qtr. 2 2-hr cl. Prereq: 444 or 641 or Stat 245, and Econ 501 or 502 or permission of instructor.

625 National and International Money Markets UGRD 5
Organization, functions, and control of money markets and their submarkets; flow of funds in these markets and investment policies of market participants.
2 2-hr cl. Prereq: 444 or 641, 501, and 520.

640 Probability Theory UGRD 5
Probability, random variables, Markov chains, discrete and continuous distributions, transformations, moment generating function techniques, limit theorems, expectation, variance.
Au Qtr. 2 2-hr cl. Prereq: Math 153 or equiv. Not open to students with credit for Stat 520 or 62 263H.

641 Applied Regression and Correlation Analysis UGRD 5
The general linear regression model; multiple correlation, path analysis, analysis of variance and tests of significance; specification errors.
Wi Qtr. 2 2-hr cl. Prereq: 501 and Stat 245 or equiv.

642 Applied Economic Models and Forecasting UGRD 5
Application of economic and statistical principles to economic problems; applications include topics in labor economics, industrial organization, macro models, and international trade.
Sp Qtr. 2 2-hr cl. Prereq: 501, 502, 641, and Math 132 or equivs.

Comparative advantage and the gains from trade; tariffs and other trade restrictions; economic effects of protective policies; U.S. commercial policies; regional economic integration.
Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 444 or 641 and 501.

666 Financial Aspects of International Trade UGRD 5
International payments and receipts; foreign exchange markets; balance-of-payments adjustment under different monetary systems; macroeconomic policy; international monetary reforms; foreign investments; multinational corporations.
Wi, Sp Qtrs. 2 2-hr cl. Prereq: 444 or 641, and 502.

670 Structure of Industry UGRD 5
Nature, role, and regulation of competition; market structure and social performance; antitrust laws; current economic, legal, and policy problems in the antitrust area.
Au, Sp Qtrs. 2 2-hr cl. Prereq: 444 or 641, and 501, or grad standing.

672 Economic Analysis of Japanese Firms and Markets UGRD 5
Applications of economic analysis to Japanese industrial organization including the firm's internal incentive structure, labor markets, and financial institutions.
Sp Qtr. 2 2-hr cl. Prereq: 501 or 501A or 570.

685 Labor Economics UGRD 5
Labor demand and supply; wages, unemployment, and inflation; economics of the household's allocation of time.
Wi Qtr. 2 2-hr cl. Prereq: 501 or equiv.

693 Individual Studies UGRD 1-5
Advanced readings in economics and related fields.
Su, Au, Wi, Sp Qtrs. Prereq: Jr status, an average of B or better in all Econ courses taken and a CHPR of 3.00 or above. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

694 Group Studies UGRD 3-5
Advanced courses in economics and related fields. Repeatable to a maximum of 15 cr hrs.

697 Study at a Foreign Institution UGRD 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This course is Progress ('P') graded. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

699 Undergraduate Research in Economics UGRD 1-10
Directed research related to tasks of an internship for an Economics major, or involve collection and analysis of data for a research project.
Sp Qtr. 200 or 201. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

700 Advanced Mathematical Techniques in Economics UGRD 5
Advanced mathematical analysis of economics problems; topics to include basic set theory and real analysis; optimization subject to inequality constraints and dynamic optimization.
Au Qtr. 2 1.66-hr cl. Prereq: 600 or equiv. Not open to students with credit for this topic under 694.

701 Dynamic Analysis in Economics UGRD 5
Optimization methods and economic applications, calculus of variations, optimal control, and elements of dynamic programming.
Wi Qtr. 2 2-hr cl. Prereq: 700 or permission of instructor. Primarily for the first year economics Ph.D. students to complement micro, macro and econometrics core courses.

702 Survey of Econometric Methods I GRAD 5
Survey of fundamental methods and applications of econometrics from economists' viewpoints. Emphasis on essential aspects of linear regression and a range of econometric topics.
Prereq: Stat 245 or equiv; Math 571 or equiv; or their Econ course equiv with permission of instructor. Not open to students with credit for 741 or 742.

703 Survey of Econometric Methods II GRAD 5
Course explores topics in the econometrics of time series and panel data, with emphasis on empirical examples in econometrics.
Prereq: 702 or equiv or permission of instructor. Not open to students with credit for 741 or 742.

704 Survey of Microeconomics I GRAD 5
A survey of neoclassical economics, its methodology, scope and paradigm extensions: production, consumption and competitive market equilibrium.
Prereq: 501 or permission of instructor. Not open to students with credit for 804 or first course in PHD microeconomics curriculum.

705 Survey of Microeconomics II GRAD 5
The second course in the graduate level survey of microeconomic theory, with emphasis on economics of information and incentives.
Prereq: 704 or equiv with permission of instructor. Not open to students with credit for 805 or 808.

706 Survey of Macroeconomics I GRAD 5
Study of short-run macroeconomic fluctuations and business cycles. Aggregate fluctuations in output, consumption and investment as well as various business cycle theories will be examined.
Prereq: 502 or equiv or permission of instructor. Not open to students with credit for 806, or other first course of PHD macroeconomics curriculum.

707 Survey of Macroeconomics II GRAD 5
Finsishes the overview of macroeconomics begun in 706 and then introduces new models of money, banking, unemployment and inflation before turning to economic growth.
Prereq: 706 or equiv with permission of instructor. Not open to students with credit for 807 or 809.
730 Public Finance UGRD 5
Comprehensive survey and analysis of the principal fiscal activities of contemporary governments; logic of public sector activity, taxation principles and practice, intergovernmental relations, current fiscal problems.
Wi Qtr: 2-3 hr cl. Prereq: PubPolM 930 or Econ 501.02. and grad standing, or permission of instructor. Not open to students with credit for 530 or PubPolM 730. Cross-listed in Public Policy and Management.

735 Comparative Political Economy GRAD 5
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.
Wi Qtr: 1-3 hr cl. Prereq: Grad standing or permission of instructor. Not open to students with 11 cr hrs of PolitSc 735. Repeatable to a maximum of 10 cr hrs. Cross-listed in Political Science.

740 Inference and Decision Analysis GRAD 5
Distribution theory, point and interval estimation, statistical hypothesis testing, decision analysis under uncertainty.
Wi Qtr: 4 cl. Prereq: 640 or equiv.

741 General Linear Regression Analysis GRAD 5
Multiple regression analysis; the general linear model; non-linear and distributed lag models.
Sp Qtr: 4 cl. Prereq: 600 and 740, or Stat 521.

742 Econometrics GRAD 5
Review of the general linear model; identification; estimating criteria; single and simultaneous equation estimation; econometric application.

783H Honors Research UGRD 3-5
A program of study arranged for each student, with individual conferences, reports, and honors thesis.
Su, Au, Wi, Sp Qtrs: Prereq: 4th yr standing with a grade of A in at least half of the Econ courses taken and an average of B in the remainder; permission of instructor whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 2 yrs are required of candidates for the degree with distinction in Econ. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

789 Survey Research Practicum GRAD 5
Hands-on applications for students interested in the planning, implementation, and analysis of a scientific sample survey.

790 Urban Economics GRAD 5
Application of economic theory to urban problems; topics include slums, residential segregation, intracity location of economic activity, urban renewal, urban sprawl, transportation, and governmental organization.
Sp Qtr: 4 cl. Prereq: 705, Geog 650, and grad standing; or permission of instructor.

804 Microeconomic Theory I GRAD 5
Theories of consumers and producers.
Au Qtr: Prereq: 501.02 or equiv.

805 Microeconomic Theory II GRAD 5
Classical partial equilibrium (competition, monopoly, monopolistic competition, Cournot and Bertrand oligopoly models, location models) and general equilibrium theory.
Wi Qtr: Prereq: 600 and 804.

806 Microeconomic Theory I GRAD 5
Theory of income and employment; Keynesian aggregate supply and demand; consumption, saving, and the multiplier; determinants of investment and the accelerator; government's role.
Au Qtr: Prereq: 502.02 or equiv.

807 Microeconomic Theory II GRAD 5
Aggregate supply expectations; introduction to dynamic macroeconomic models.
Wi Qtr: Prereq: 600, 804, and 808. Not open to students with credit for 809.01.

808 Microeconomic Theory III GRAD 5
Partial equilibrium welfare theory; economic dynamics; economics of information and uncertainty; and elementary game theory; may also include topics in industrial organization, labor, public finance, and others.
Sp Qtr: Prereq: 805.

809 Microeconomic Theory III GRAD 5
Stochastic dynamic problems in macroeconomics; questions of growth, business cycles, and policy.
Sp Qtr: Prereq: 807. Not open to students with credit for 809.02.

810 Advanced Macroeconomics GRAD 5
Examines recent contributions to macroeconomics and trains advanced graduate students to develop skills for research in theoretical, empirical and policy areas in macroeconomics.
Au, Wi Qtrs: 2-3 hr cl. Prereq: 809 or permission of instructor.

811 Applied Macroeconomics GRAD 5
Application of econometric methods to theoretical structures developed in 806 and 809; estimation and validation of macroeconomic models.
Sp Qtr: 2.75-3 hr cl. Prereq: 742 and 809, or permission of instructor.

815 Mathematical Economics I GRAD 5
Mathematical analysis of microeconomic problems involving consumer and production theory and general equilibrium.
* Prereq: 808.

816 Mathematical Economics II GRAD 5
Mathematical analysis of macroeconomic problems including static and dynamic systems and optimal control.
* Prereq: 809.

817 Game Theory GRAD 5
The methodology and survey of the development of game theory including concepts of equilibrium, beliefs, expectations and behavioral strategies.
Wi Qtr: 2-2 hr cl. Prereq: 804, 805 and 808 or equiv with permission of instructor.

818 Economics of Information GRAD 5
How information affects economic decision making in strategic settings and on markets; topics include theories of speculation, rational expectations, signaling principal-agent models, and search.
Au Qtr: 2 1.66-hr cr. Prereq: 804, 805, and 808. Not open to students with credit for this topic under 894.

819 Economic Behavior under Uncertainty GRAD 5
Axiomatic approaches to economic behavior under uncertainty, classical expected utility paradigm, subjective probability, and behavioral theory of economic choice under uncertainty. Prereq: 804, 805, and 808, or equiv of the first-year graduate microeconomics sequence with permission of instructor. S/U option available only upon the Economics DGS approval.

820 Monetary Theory GRAD 5
Role of money in theoretical analysis of forces determining and influencing level of income, employment, and prices.
Au Qtr: Prereq: 520, 805, and 806; or equivs.

821 Monetary Economics GRAD 5
Develops monetary economics as a research field and covers a range of topics in the theoretical, empirical and policy aspects of money, credit and banking.
Wi Qtr: Prereq: 806, 807, 809 or permission of instructor. May be graded S/U with approval of the Economics Director of Graduate Studies.

830 Advanced Public Finance I GRAD 5
A theoretical and empirical investigation of the economic behavior of the public sector; theory of social goods, problems of tax structure, incidence, multi-unit finance.
Au Qtr: Prereq: 805.

832 Advanced Public Finance II GRAD 5
Continuation of 830; topics include intergovernmental relations, tax incidence, and tax reform.
Wi Qtr: Prereq: 830.

840 Time-Series Econometrics GRAD 5
Fundamental elements of time series methods; recently developed techniques for the analysis of economic time series.
Au Qtr: 2 2-hr cl. Prereq: 742.

841 Advanced Econometrics I GRAD 5
Selected advanced topics in econometrics such as non-parametric and semiparametric estimation, numerical optimization, Markov chain, Monte Carlo methods and duration models used in economics.
Prereq: 742 or equiv with permission of instructor.

842 Advanced Econometrics II GRAD 5
Theory and application of advanced quantitative research methods; computerized application of econometric methods developed in 742.
Sp Qtr: Prereq: 742.

843 Research Topics in Micro Econometrics GRAD 5
Surveys and trains advanced PhD students in recent developments in micro econometrics; both theoretical and applied topics in econometrics will be covered.
Au Qtr: 2 2-hr cl. Prereq: 742, 841 and 842 or equiv with permission of instructor. Repeatable to a maximum of 15 cr hrs.

844 Research Topics in Time Series Econometrics GRAD 5
Surveys and trains advanced PhD students in economics with recent techniques and concepts in the econometric analysis of times series models.
Wi Qtr: 2 2-hr cl. Prereq: 742 or equiv with instructor's permission, 840 recommended. Repeatable to a maximum of 15 cr hrs.

861 Advanced Microeconomic Trade Theory GRAD 5
Advanced nonmonetary international trade theory; analysis of the effect of trade and commercial policies on the allocation of resources, income distribution, and growth.
Au Qtr: 4 cl. Prereq: 805.

862 Advanced Macroeconomic Trade Theory GRAD 5
Advanced monetary international trade theory; analysis of payments adjustments under alternative international monetary institutions.
Wi Qtr: Prereq: 805 and 806; 861 recommended.
128 Economics

863 Economic Growth and International Trade GRAD 5
Evolution of the world economy, from theoretical and empirical perspectives, including Solow growth models, optimal economic growth, models of overlapping generations, and endogenous economic growth. Sp Qtr. 2-2 hr cl. Prereq: 808.

871 Industrial Organization I GRAD 5
An investigation of information economics and market-based transactions in the theory of the firm. Wi Qtr. 2-2 hr cl. Prereq: 808.

872 Industrial Organization II GRAD 5

883 Advanced Labor Economics I GRAD 5
The firm as production function, employment contracting in a competitive market, and collective action (labor unions and employment contracting). Au Qtr. Prereq: 805 and 806.

884 Advanced Economics of the Labor Market GRAD 5
Economic theory and empirical evidence relating to labor allocation and wage determination. Wi Qtr. Prereq: 805 and 806.

893 Individual Studies GRAD 1-15
Advanced readings in economics and related fields. Su, Wi, Au, Sp Qtrs. Prereq: Permission of instructor. Repeatable. This course is graded S/U.

894 Group Studies GRAD 3-5
Advanced courses in economics and related fields. Su, Wi, Au, Sp Qtrs. Repeatable.

901 Supervised Teaching in Economics GRAD 5
Supervised teaching of undergraduate courses in economics for students pursuing the Doctor of Arts degree. Su Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

915 Seminar in Price Theory GRAD 1-5
Special topics in economic theory. Au, Sp Qtr. Prereq: 805, 806, 815. Repeatable to a maximum of 30 cr hrs.

920 Seminar in Monetary Policy GRAD 1-5
Application of monetary theory to issues of public policy in banking and monetary affairs; examination of public hearings and policy literature. Au, Sp Qtr. Prereq: 820 and 821. Repeatable to a maximum of 30 cr hrs.

940 Seminar in Econometrics GRAD 1-5
Examination of economic problems whose solutions may advantageously be sought by use of the methods of mathematics and mathematical statistics. Au, Sp Qtr. Prereq: 742 and 842 or equiv or permission of instructor. Repeatable to a maximum of 30 cr hrs.

970 Seminar in Structure and Regulation of Industry GRAD 1-5

981 Seminar in the Economics of the Labor Market GRAD 5
Selected topics and issues in wage determination, employment, and unemployment. Sp Qtr. Prereq: 884. Repeatable to a maximum of 10 cr hrs.

999 Research in Economics: Dissertation GRAD 1-18
Research for dissertation purposes only. Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

Education: Educational Policy and Leadership

159 Online Learning Strategies and Skills UGRD 3
Explores how to use the web for a successful college experience. Covers navigating web resources and services, basic software, communicating content and writing collaboratively. Su Qtr.

259 Individual Learning and Motivation: Strategies for Success in College UGRD 5
Teaches learning and motivation strategies to improve study skills and increase college success. Students learn how to manage their time and improve their grades. 2-2 hr cl, arr.

270.01 Seminar: Self-Career Development UGRD 3
Designed to provide opportunities for self-exploration and skill development; exploration of and clarification of vocational and educational interests. This course is graded S/U.

270.04 Seminar: Career Development and Leadership Training in Higher Education UGRD 3
Designed to explore possible careers in higher education and to conduct leadership training in terms of higher educational functions and organizations. Su, Au, Wi, Sp Qtrs. Repeatable only with permission from instructor.

271 Leadership in Community Service UGRD 5
Introduction to the knowledge, skills, and competencies for responsible service and leadership in diverse communities. Prepares students for engaged, responsible, and active community involvement and leadership. Off-campus field experience required for minimum of 3 hrs week.

305 Childhoods in Historical and Comparative Perspective UGRD 5
Comparative and historical study of the childhood experience.

306.07 School and Society: General Student Body UGRD 5
Use of concepts and methods of history, philosophy, and the social sciences to grasp the interrelationship between society and education.

306.20 School and Society: Middle Childhood Education UGRD 5
Use of concepts and methods of history, philosophy, and the social sciences to grasp the interrelationship between society and education.

307 History of American Education UGRD 5
Designed to develop a more thorough and systematic understanding of education and schooling in the United States.

309.07 Psychological Perspectives on Education: General Student Body UGRD 5
Examination of research, theory, and practice pertaining to important aspects of learning and teaching; the nature of learners, cognition, problem solving, motivation, teaching approaches, and assessment.

309.20 Psychological Perspectives on Education: Middle Childhood Education UGRD 5
Examination of research, theory, and practice pertaining to important aspects of learning and teaching; the nature of learners, cognition, problem solving, motivation, teaching approaches, and assessment.

309.70 Psychological Perspectives on Education: Early Childhood Education UGRD 5
Examination of research, theory, and practice pertaining to important aspects of learning and teaching; the nature of learners, cognition, problem solving, motivation, teaching approaches, and assessment.

311 Impact of Technology in Learning and Education UGRD 5
The theories, function, impact, and use of technology in formal and informal learning and education environments.

359 Technology-Enhanced Learning Strategies UGRD 5
Impart specific and general strategies for learning in college with special attention to technology and tools that enhance learning in individual and group settings. Au, Wi, Sp Qtr. 2-2 hr cl, coursework as assigned, collaborative work as arranged. Taught as a hybrid course. In addition to class time, students will work independently and collaboratively online and outside of class meetings.

370 Computers in the Classroom: An Introduction UGRD 4
An introduction to educational computing. 1.25-2 hr cl, 1.75-2 hr lab. Not open to students with credit for EduPL 671.
371 Introduction to Leadership Development in Learning Organizations UGRD 3
Provides overview of leadership definitions and discusses the evolution of leadership concepts while offering assessments to develop leadership abilities. Au, Wi, Sp Qtr. Repeatable to a maximum of 12 cr hrs.

411 Body/Mind Goes to School UGRD 5
Current and emerging theoretical and cultural conception of body and mind and how they affect educational theories and practices. Prereq: Soph standing. GEC sci indiv and groups course.

413 Legal Issues in Education UGRD 5
An exploration of legislative, executive and judicial action pertaining to activities in education.

414 Gender Education UGRD 5
Examination the education of females in schools through the lenses of history, psychology, sociology, policy analysis, and curriculum.

415 Sexualities and Education: Issues and Practices UGRD 5
Provides knowledge and awareness of legal, ethical, interpersonal and community issues related to sexual orientation as area of diversity in education.

551 An Historical Account of the Education of Black Folk in the US, Part I: 1700-1950 UGRD 5
Examines the tradition of Black education and the implications of this tradition for educators and future generations of students.

2 2.5-hr cl. Prereq: Jr or Sr standing. GEC soc diversity in the US course.

552 An Historical Account of the Education of Black Folk in the US, Part II: 1950-Present UGRD 5
Designed to provide students with a perspective on historical and contemporary Black education through the writings of Black scholars.

2 2.5-hr cl. Prereq: Jr or Sr standing. GEC soc diversity in the US course.

571 Theories of Leadership in Organizations UGRD 3
Outlines a variety of leadership theories that can impact the manner in which leaders face complex issues in a global society.

Au, Wi, Sp Qtr. Prereq: 371. Repeatable to a maximum of 12 cr hrs.

600 Basic Media Skills UGRD 1
Self-instructional modules and activities emphasizing the selection, utilization, and preparation of teaching material.

Prereq: Admission to a teacher education program certification area or permission of instructor
Not open to students with credit for EduPL 600. Cost of production materials must be borne by the student. This course is graded S/U.

601 Children, Families and Communities in Conflict Transformation UGRD 5

607.07 Adolescent Learning and Development in School Contexts: General Student Body UGRD 3
Provides students with an introduction to the field of adolescent development and psychology and applications to education.

Teacher education licensure course.

607.20 Adolescent Learning and Development in School Contexts: Middle Childhood Education UGRD 3
Provides students with an introduction to the field of adolescent development and psychology and applications to education.

Teacher education licensure course.

607.23 Adolescent Learning and Development in School Contexts: MSAT UGRD 3
Provides students with an introduction to the field of adolescent development and psychology and applications to education.

Teacher education licensure course.

607.70 Adolescent Learning and Development in School Contexts: Early Childhood Education UGRD 3
Provides students with an introduction to the field of adolescent development and psychology and applications to education.

Teacher education licensure course.

609.07 Teaching as a Profession: General Student Body UGRD 3
Examines complexities surrounding the practice of teaching at national, state and local levels, highlighting legal, professional, and ethical issues surrounding American schools and teaching. Part of a prescribed series of courses leading to teacher licensure.

609.20 Teaching as a Profession: Middle Childhood UGRD 3
Examines complexities surrounding the practice of teaching at national, state and local levels, highlighting legal, professional, and ethical issues surrounding American schools and teaching. Part of a prescribed series of courses leading to teacher licensure.

609.70 Teaching as a Profession: Early Childhood UGRD 3
Examines complexities surrounding the practice of teaching at national, state and local levels, highlighting legal, professional, and ethical issues surrounding American schools and teaching. Part of a prescribed series of courses leading to teacher licensure in Early Childhood, Middle Childhood and Young Adult Education.

615.07 Developing Discipline for Effective Learning: General Student Body UGRD 3-5
Causes of and procedures for dealing with school discipline problems; focus upon the teacher, student, classroom, and school situations.

Prereq: teaching experience or enrolled in student teaching.

615.99 Developing Discipline for Effective Learning: Language, Literacy & Culture UGRD 3-5
Causes of and procedures for dealing with school discipline problems; focus upon the teacher, student, classroom, and school situations.

Prereq: teaching experience or enrolled in student teaching.

626.01 Sport and Popular Culture Overview UGRD 3
A variety of themes present in selected popular cultural forms dealing with a variety of sports such as football, basketball, baseball, and track and field.

Cross-listed with EduPAES.

626.02 Sport and Popular Culture - Race and Gender UGRD 3
A variety of themes present in selected popular cultural forms dealing with a variety of sports such as football, basketball, baseball, and track and field.

Cross-listed with EduPAES.

650.01 Humanistic Foundations of Education: Philosophy of Education UGRD 3
Designed to provide students with an application of philosophy of education to issues and problems of teaching and living in a culturally diverse society.

Prereq: 3rd yr standing in a recognized university teacher education program.

or permission of dept office.

650.02 Humanistic Foundations of Education: History of Modern Education UGRD 3
Education and schools as factors in the development of the modern world; theories, practice, relations with other social institutions and forces, especially in Europe and America.

Cross-listed with EduPAES.

650.03 Humanistic Foundations of Education: Applied Ethics for Teachers UGRD 3
An examination of selected moral/ethical issues which face practicing educators; emphasis on developing ethical decision-making skills.

Prereq: 3rd yr standing in a recognized university teacher education program.

or permission of dept office.

650.04 Humanistic Foundations of Education: Social Criticism in American Education UGRD 3
An analysis and interpretation of critical stances taken by selected major writers on educational topics of current interest.

Prereq: 3rd yr standing in a recognized university teacher education program.

or permission of dept office.

658 Sport in Western Culture UGRD 3
Examines sport in North American, South American, and European countries with emphasis on influences of political ideology, economics, gender, race, and nationalism.

671 Fundamentals of Computer Applications in Education and Training UGRD 4
An introduction to the common uses of computers in educational and training settings; emphasis on instruction and management.

Not open to students with credit for EduPL 370. Open only to professional educators.

673 Improving Professional Practice of Teaching with Technology using Action Research UGRD 4
Teachers learn action research in order to study the effective use of technology in teaching and learning in their classroom(s).

Wi Qtr. Distance Learning Course (Web taught).

676 Planning and Preparing Teacher-Made Educational Media UGRD 3
Demonstration and practice in the preparation of teaching materials using desktop publishing; emphasis on the development of fliers, worksheets, overheads, and simple animations.

Prereq: 4th yr or grad standing.

677 Educational Telecommunications UGRD 3
The varied types of educational telecommunications in relation to designs, planning, production, utilization, and evaluation.

Prereq: 4th yr standing.
130  Education: Educational Policy and Leadership

678  Introduction to Instructional Systems    GRAD 3
  Development
Paradigms for instructional development; learner, task, and curriculum analysis; prototype
development; completion of a production proposal/storyboard; subsequent enrollment in 778
expected.

680  Educational Videography    GRAD 4
  Functions and operations of small format video production and post-production equipment;
application of theory and research to the production of video materials for instruction.
Prereq: 677 and 678 recommended.

681  Introduction to Developing Educational Web    UGRD 4
  Sites
In this introductory course students will begin to develop the visual, technical, and pedagogical
design skills to create educational web sites. Au Qtr.

682  Introduction to Teaching Online for K12    UGRD 4
  Educators
This online course introduces educators to the methods of teaching K12 students online.
Wi Qtr. Distance Learning course.

683  Solving Classroom Problems    GRAD 3
  Exploration of problem areas of classroom control, student learning, parent relationships,
relationships with other teachers, and time management.

692.10  Workshops: Educational Policy and Leadership    GRAD 1-8
Intensive study of a problem common to the participants for the purpose of developing sound
principles and practices relating to it.
Prereq: Teaching experience and written permission of workshop director. Repeatable with not
more than 4 workshops to a maximum of 12 cr hrs. Repeatable to a maximum of 12 cr hrs. This
course is graded S/U.

692.30  Workshops: Educational Administration    GRAD 1-8
Intensive study of a problem common to the participants for the purpose of developing sound
principles and practices relating to it.
Prereq: Teaching experience and written permission of workshop director. Repeatable with not
more than 4 workshops to a maximum of 12 cr hrs. Repeatable to a maximum of 12 cr hrs. This
course is graded S/U.

692.44  Workshops: Educational Administration and Supervision    GRAD 1-8
Intensive study of a problem common to the participants for the purpose of developing sound
principles and practices relating to it.
Prereq: Teaching experience and written permission of workshop director. Repeatable with not
more than 4 workshops to a maximum of 12 cr hrs. Repeatable to a maximum of 12 cr hrs. This
course is graded S/U.

692.46  Workshops: Instructional Design Workshop    GRAD 1-8
Intensive study of a problem common to the participants for the purpose of developing sound
principles and practices relating to it.
Prereq: Teaching experience and written permission of workshop director. Repeatable with not
more than 4 workshops to a maximum of 12 cr hrs. Repeatable to a maximum of 12 cr hrs. This
course is graded S/U.

692.49  Digital Tools for Qualitative Research    GRAD 1-8
An introduction to digital software tools for managing and analyzing qualitative data.
Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

692.50  Workshops: General Professional Studies    GRAD 1-8
Intensive study of a problem common to the participants for the purpose of developing sound
principles and practices relating to it.
Prereq: Teaching experience and written permission of workshop director. Repeatable with not
more than 4 workshops to a maximum of 12 cr hrs. Repeatable to a maximum of 12 cr hrs. This
course is graded S/U.

692.60  Workshops: Quantitative Research, Evaluation
  and Measurement in Education
Intensive study of a problem common to the participants for the purpose of developing sound
principles and practices relating to it.
Prereq: Teaching experience and written permission of workshop director. Repeatable with not
more than 4 workshops to a maximum of 12 cr hrs. Repeatable to a maximum of 12 cr hrs. This
course is graded S/U.

693.10  Individual Studies: Educational Policy and Leadership
Educational Policy and Leadership.
Prereq: Permission of instructor. A total of not more than 30 cr hrs of individual study (any 693)
will apply toward graduation for undergrad students, or 15 cr hrs for the masters degree and 30
or hrs for the doctoral degree. Repeatable to a maximum of 30 or hrs. This course is graded S/L

693.30  Individual Studies: Educational Administration
Educational Administration.
Prereq: Permission of instructor. A total of not more than 30 cr hrs of individual study (any 693)
will apply toward graduation for undergrad students, or 15 cr hrs for the masters degree and 30
or hrs for the doctoral degree. Repeatable to a maximum of 30 or hrs. This course is graded S/L

693.32  Individual Studies: Higher Education
Higher Education.
Prereq: Permission of instructor. A total of not more than 30 cr hrs of individual study (any 693)
will apply toward graduation for undergrad students, or 15 cr hrs for the masters degree and 30
or hrs for the doctoral degree. Repeatable to a maximum of 30 or hrs. This course is graded S/U.

693.36  Individual Studies: Teacher Education
Teacher Education.
Prereq: Permission of instructor. A total of not more than 30 cr hrs of individual study (any 693)
will apply toward graduation for undergrad students, or 15 cr hrs for the masters degree and 30
or hrs for the doctoral degree. Repeatable to a maximum of 30 or hrs. This course is graded S/L

693.40  Individual Studies: History of Education and Comparative Education
History of Education and Comparative Education.
Prereq: Permission of instructor. A total of not more than 30 cr hrs of individual study (any 693)
will apply toward graduation for undergrad students, or 15 cr hrs for the masters degree and 30
or hrs for the doctoral degree. Repeatable to a maximum of 30 or hrs. This course is graded S/L
694.49 Group Studies: Curriculum and Instruction  GRAD 1-15
Group studies on special problems in education.
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

694.50 Group Studies: General Professional Studies  GRAD 1-15
Group studies on special problems in education.
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

694.60 Group Studies: Quantitative Research, Evaluation and Measurement in Education  GRAD 1-15
Group studies on special problems in education.
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

697 Study at a Foreign Institution  GRAD 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Art Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This course is Progress (P) graded. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

698.01 Study Tour: Domestic  GRAD 1-5
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only.

698.02 Study Tour: Foreign  GRAD 1-5
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only.

699 Undergraduate Research in Educational Policy and Leadership  GRAD 0-15
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 20 cr hrs. This course is graded S/U.

700.01 Interprofessional Education: Seminar on Interprofessional Care  GRAD 3
Treatment of the whole person through the analysis of the interrelated problems of actual cases.
Prereq: Limited to students enrolled in allied medical professions, education, law, medicine, nursing, social work, and theology. Cross-listed in EduPL, EduPAES, EduTL. Repeatable to a maximum of 9 cr hrs; subdivisions not repeatable, except 700.04 which is repeatable to a maximum of 10 cr hrs.

700.02 Interprofessional Education: Changing Societal Values  GRAD 3
Identification and clarification of values considerations as they relate to professional problems in dealing with consumers/clients/patients.
Prereq: Limited to students enrolled in allied medical professions, education, law, medicine, nursing, social work, and theology. Cross-listed in EduPL, EduPAES, EduTL. Repeatable to a maximum of 9 cr hrs; subdivisions not repeatable, except 700.04 which is repeatable to a maximum of 10 cr hrs.

700.03 Interprofessional Education: Seminar on Ethical Issues Common to the Helping Professions  GRAD 3
Ethical issues of concern to the professions and arising out of advanced technology; euthanasia, enforced treatment, privacy and confidentiality, malpractice, and the social responsibility of the professions.
Prereq: Limited to students enrolled in allied medical professions, education, law, medicine, nursing, social work, and theology. Cross-listed in EduPL, EduPAES, EduTL. Repeatable to a maximum of 9 cr hrs; subdivisions not repeatable, except 700.04 which is repeatable to a maximum of 10 cr hrs.

700.04 Interprofessional Education: Interprofessional Practicum in Clinical Settings  GRAD 3-5
Interprofessional teamwork in clinical settings.
Prereq: Permission of instructor. Limited to students enrolled in allied medical professions, education, law, medicine, nursing, social work, and theology. Cross-listed in EduPL, EduPAES, EduTL. Repeatable to a maximum of 10 cr hrs.

700.05 Interprofessional Education: Interprofessional Seminar in Policy Analysis  GRAD 3
Explores interprofessionally the history, formation, and implementation of public policy issues of significance to seven helping professions.
Prereq: Permission of instructor. Limited to students enrolled in allied medical professions, education, law, medicine, nursing, social work, and theology. Cross-listed in EduPL, EduPAES, EduTL. Repeatable to a maximum of 9 cr hrs; subdivisions not repeatable, except 700.04 which is repeatable to a maximum of 10 cr hrs.

700.06 Interprofessional Education: Care of Chemically Dependent Families  GRAD 3
Interprofessionally explores issues in the identification and treatment of chemical dependency within the family context.
Limited to students enrolled in allied medical professions, education, law, medicine, nursing, social work, and theology. Cross-listed in EduPL, EduPAES, EduTL. Repeatable to a maximum of 9 cr hrs; subdivisions not repeatable, except 700.04 which is repeatable to a maximum of 10 cr hrs.
132 Education: Educational Policy and Leadership

727.30 Special Topics: Educational Administration GRAD 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: Educational Administration.
Prereq: Grad standing or registration in one of the professional schools. Special Topics in Education (EduPL 727) may be offered by any of the program areas listed below. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

727.32 Special Topics: Higher Education GRAD 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: Higher Education.
Prereq: Grad standing or registration in one of the professional schools. Special Topics in Education (EduPL 727) may be offered by any of the program areas listed below. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

727.36 Special Topics: Teacher Education GRAD 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: Teacher Education.
Prereq: Grad standing or registration in one of the professional schools. Special Topics in Education (EduPL 727) may be offered by any of the program areas listed below. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

727.40 Special Topics: History of Education and Comparative Education GRAD 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: History of Education and Comparative Education.
Prereq: Grad standing or registration in one of the professional schools. Special Topics in Education (EduPL 727) may be offered by any of the program areas listed below. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

727.44 Special Topics: Educational Administration and Supervision GRAD 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: Educational Administration and Supervision.
Prereq: Grad standing or registration in one of the professional schools. Special Topics in Education (EduPL 727) may be offered by any of the program areas listed below. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

727.46 Special Topics: Instructional Design GRAD 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: Instructional Design.
Prereq: Grad standing or registration in one of the professional schools. Special Topics in Education (EduPL 727) may be offered by any of the program areas listed below. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

727.49 Special Topics: Curriculum, Instruction, and Professional Development GRAD 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: Curriculum, Instruction, and Professional Development.
Prereq: Grad standing or registration in one of the professional schools. Special Topics in Education (EduPL 727) may be offered by any of the program areas listed below. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

727.50 Special Topics: General Professional Studies GRAD 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: General Professional Studies.
Prereq: Grad standing or registration in one of the professional schools. Special Topics in Education (EduPL 727) may be offered by any of the program areas listed below. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

727.60 Special Topics: Quantitative Research, Evaluation and Measurement in Education GRAD 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: Quantitative Research, Evaluation and Measurement in Education.
Prereq: Grad standing or registration in one of the professional schools. Special Topics in Education (EduPL 727) may be offered by any of the program areas listed below. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

732 Graduate Teaching Fellows GRAD 4
Students will study important aspects of teaching and learning support at the university level, and examine models for departmental GTA preparation and support programs.
Su Qtr. 2-2 hr or 5 wks, 20 arr hrs. Prereq: Enrollment by permission only. This course is graded S/U.

744 Introduction to Educational Measurement GRAD 3
Concepts and techniques in educational testing and assessment.
Prereq: Grad standing. Repeatable to a maximum of 3 cr hrs.

745 The Inquiry Process - The Classroom Teacher GRAD 2-4
An introduction to research and consumer of research practices.
Approaches to educational research with critical review of research studies and their relationship to practice.
1 hr of cl for 2 cr hrs., 20 hrs of clinical experience in public schools for each additional cr hr.
Prereq: Grad standing and enrollment in a teacher education program. Repeatable to a maximum of 4 cr hrs.

756 Professional Development for Teachers GRAD 3
An overview of the goals, problems, practices, issues, research, theory, organizations, and literature of teacher education for teachers.

765 Introduction to Educational Evaluation GRAD 3
Introduction to educational evaluation including history, models, theories, policies of evaluation, and types of evaluation.
Prereq: 785 and/or permission of instructor.

768 Directing Student Teachers GRAD 3
Principles and techniques for directing the laboratory experiences of student teachers and other teacher education students.
Prereq: experience.

778 Formative Evaluation of Instructional Systems GRAD 3
Theory and practice of developmental testing and field evaluation of instructional systems.
Prereq: 678 and course(s) in media production resulting in a prototype instructional system.

779 Development and Management of Educational Media Centers GRAD 3
Media specialist’s responsibilities for the successful operations of a media program; planning, organization, administration, and service functions; emphasis on school library media programs.
Prereq: 675 or equiv.

780 Introduction to Student Affairs GRAD 3
The nature of and issues involved in the work of student affairs in higher education.

782 Practice of College Student Development GRAD 3
First practical course in professional sequence; prerequisite to field work; major college student development practices are examined; research on practitioners’ projects are examined.
2 1.5-hr cl.

785 Introduction to Inquiry, Principles, Strategies, and Techniques GRAD 3
Introduction to inquiry strategies and their role in educational development; emphasis is on the conceptualization of educational problems.
Prereq: 4th year or grad standing.

786 Introduction to Inquiry: Quantitative Methods GRAD 5
An introduction to quantitative techniques, with emphasis on application in educational settings.
2 2-hr cl, 1.5-hr lab, arr hrs. Prereq: 4th year or grad standing.

788.01 Computer Concepts and Skills for Educators: PILOT Authoring Language GRAD 5
Systematic exploration of instructional and educational problems for which interactive, instructional courseware can provide powerful solutions; practical experience in using the PILOT authoring system to address those problems.
2 cl, 8 hrs lab. Prereq: 671, 678, 681, 684, EduPL or permission of instructor.

789 Urban Communities, Technology and Education GRAD 3
Students use critical race theory to study the pedagogical, political, and historical factors that frame and impact the integration of educational technologies in urban schools.
Wi Ctr.

791.07 Media and Technology in Education: General Student Body GRAD 4
Overview of the impact and use of media and technology in education; courses directed to teacher education students.

791.20 Media and Technology in Education: Middle Childhood Education GRAD 4
Overview of the impact and use of media and technology in education; courses directed to teacher education students.

791.70 Media and Technology in Education: Early Childhood Education GRAD 4
Overview of the impact and use of media and technology in education; courses directed to teacher education students.

791.99 Media and Technology in Education: Language, Literacy and Culture GRAD 4
Overview of the impact and use of media and technology in education; courses directed to teacher education students.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>795</td>
<td>Proposal Development</td>
<td>GRAD 3</td>
<td>Principles, processes, and research relating to the creation of proposals for developmental and research activities in educational agencies and institutions. Prereq: 785 or equiv.</td>
</tr>
<tr>
<td>796</td>
<td>Classroom Test Construction</td>
<td>GRAD 3</td>
<td>General principles and techniques for construction and utilization of classroom tests for assessment of student achievement. Prereq: 786 or equiv or permission of instructor.</td>
</tr>
<tr>
<td>797</td>
<td>Cooperative Learning for Teachers and Supervisors</td>
<td>GRAD 3</td>
<td>Examines research, theory, and practice related to cooperative and collaborative learning, including teacher’s role, strategies and structures, and assessment of outcomes.</td>
</tr>
<tr>
<td>798</td>
<td>Qualitative Research for Educators</td>
<td>GRAD 3</td>
<td>An introduction to qualitative research at the Master’s level, this course offers an introduction to the history and substantive topics of educational ethnography.</td>
</tr>
<tr>
<td>800</td>
<td>Qualitative Research in Education</td>
<td>GRAD 3</td>
<td>Issues and problems of scientific inquiry in educational research with emphasis on field research.</td>
</tr>
<tr>
<td>802</td>
<td>Comparative Perspectives on Education and Democratization</td>
<td>GRAD 3</td>
<td>Cross-cultural and theoretical perspectives on the relationship between education and democratization.</td>
</tr>
<tr>
<td>803</td>
<td>Psychological Perspectives on Teachers, Teaching and Teacher Education</td>
<td>GRAD 4</td>
<td>Psychological research (including quantitative and qualitative studies) on teaching; teacher characteristics, knowledge and beliefs; learning to teach; and the role of psychological education in teacher education.</td>
</tr>
<tr>
<td>804</td>
<td>Technology in Education Network (TIENET)</td>
<td>GRAD 4</td>
<td>Forum: Application of Technology to Engaged Life-Long Learn. Explores integration of technology in the curriculum. An field trips. Prereq: 871 or equiv; teaching experience. Repeatable to a maximum of 20 cr hrs. This course is graded SU.</td>
</tr>
<tr>
<td>805</td>
<td>Education in Developing Societies</td>
<td>GRAD 3</td>
<td>Comparative examination of the social and cultural contours of education in developing societies, and the contrast between educational problems in these societies and the industrial world.</td>
</tr>
<tr>
<td>806</td>
<td>Administration of Higher Education</td>
<td>GRAD 3</td>
<td>Purposes and scope of higher education; governance; problems of administration-student-staff relationships; and administrative organization.</td>
</tr>
<tr>
<td>807</td>
<td>Educational Survey Research Methods</td>
<td>GRAD 3</td>
<td>A study of the design principles, sampling, and data-gathering methods used in the conduct of educational survey research. Prereq: 785, 786 and 800 or written permission of instructor.</td>
</tr>
<tr>
<td>808</td>
<td>Experimental Design in Education I</td>
<td>GRAD 5</td>
<td>An examination of logical and quantitative principles, especially the analysis of variance, underlying basic experimental designs employed in educational research. 3-hr cl, 2-hr lab. Prereq: 786 or equiv. Not open to students with credit for EduTL 808.</td>
</tr>
<tr>
<td>809</td>
<td>Experimental Design in Education II</td>
<td>GRAD 5</td>
<td>An examination of intermediate quantitative principles and issues underlying experimental design in education, especially principles and issues associated with factorial designs employing multiple response measures. 3-hr cl, 2-hr lab. Prereq: 808.</td>
</tr>
<tr>
<td>810</td>
<td>Experimental Design in Education III</td>
<td>GRAD 5</td>
<td>An examination of repeated measurements, mixed, hierarchical, partial hierarchical, and quasi-experimental designs and associated methods of univariate and multivariate statistical analyses 3-hr cl, 2-hr lab. Prereq: 809 or equiv.</td>
</tr>
<tr>
<td>811</td>
<td>Sources of Progressive Thought in American Education</td>
<td>GRAD 3</td>
<td>An examination of the ideas that provided the philosophical basis for progressive education with an emphasis on the historical context in which these ideas were developed.</td>
</tr>
<tr>
<td>812</td>
<td>American Schools and American Society</td>
<td>GRAD 3</td>
<td>Education and schooling in the United States. Prereq: Grad standing.</td>
</tr>
<tr>
<td>813</td>
<td>Understanding Educational Organizations:</td>
<td>GRAD 3</td>
<td>An introductory survey of the applications of formal organization theory for the purpose of understanding educational organizations - a core course in administrator certification. Certification students must also enroll for 1 hr in 884B844.</td>
</tr>
<tr>
<td>814</td>
<td>Historical Bases of Curriculum Development</td>
<td>GRAD 3</td>
<td>Intensive analysis of the outstanding contributions made by scholars in the field from 1900 to 1960. Prereq: 860.</td>
</tr>
</tbody>
</table>
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833 The Politics of Curriculum Knowledge: Critical Issues in Curriculum
Examination of how politics, ideology, economics and cultural perspectives impact on curricular knowledge.
834 An Interpretative History of African American Education 1950 to 1990
Examination of African American education from the perspective of African American scholars from the 1950s to the 1990s.
835 Personnel Administration in Higher Education
A study of the staff personnel function in institutions of higher education through a consideration of personnel policies and operating principles.
836 Evaluation Methods: Principles of Needs Assessment I
Introduction to the concept of need, issues in needs assessment, and types of needs assessment strategies with a special emphasis on basic techniques and procedures.
1 2.5-hr cl. Prereq: 765 or permission of instructor.
837 Evaluation Methods: Principles for the Evaluation of Professional Personnel in Education
Designed to help people to manage the design, implementation, and evaluation of performance appraisal and review systems in educational organizations. EduPL 765 recommended.
838 Evaluation Methods: Principles of Needs Assessment II
A brief overview of needs assessment followed by an inspection of in-depth needs assessment, procedures used in education, agencies, and business/industry settings.
1 2.5-hr cl. Prereq: 765 or 851 or permission of instructor.
839 Women in Higher Education
Examines conditions and positions of women in higher education and strategies for enhancing the quality of their experiences in the academy.
1 2.5-hr cl.
840 Legal Aspects of Higher Education Administration
Statutory and case law are analyzed for administrative implications; changing legal developments in college and university governance patterns.
841 Curriculum in Higher Education
A study of representative and experimental college programs in the United States.
1 2.5-hr cl.
842 Administration of Academic Affairs in Higher Education
Principles and problems of administering academic affairs in light of development, financial considerations, and evaluation.
Prereq: 806.
843 Administrative Responsibilities and Perspectives: Equity, Learning, and the Individual
Administrators’ responsibility to see equity and the rights of individual are recognized and enhanced in the school setting.
Prereq: 846 or permission of instructor. Mandated requirement for the Certification of Administrators in the State of Ohio.
844 The Educational Leader as Learner: Knowledge and Administration
Designed to increase the educational administrator’s ability to accept and use the notion that human beings believe differently (alternative ideologies) and learn differently (alternative epistemologies).
845 Politics and Political Leadership in American Education
A critical examination of national, state, and local politics and political leadership in American education.
846 Introduction to Educational Administration
Introduction to the organizational setting of the school, the nature of administration, and personal decision making about careers in educational administration—a core course in administrator certification.
847 Human Relations in Educational Administration
Interpersonal behavior in educational organizations with emphasis on such topics as values, groups, power, communicating, conflict management, motivation, and human diversity.
Prereq: 806 or 846.
848 Educational Inquiry Within the Affective Domain: Theory and Methods
Provides theory and practice for advanced graduate students to conduct scientific inquiry within the affective domain including attitudes, values, perceptions, opinions, orientations, and belief.
Prereq: 785 and 786.
849 Feminist Perspectives of Women in Education
Examines current positions and conditions of female faculty and students in schools, colleges, and universities. Feminist scholarship provides theoretical lenses through which to consider the intersections of gender, sexuality, race, ethnicity, and class, and their impact on daily lives of women.
* 1 3-hr cl. Prereq: Written permission.
850 Internship in Educational Research and Development
Internship experiences in research, development, or evaluation settings. Prereq: Permission of instructor.
Arr. Repeatable to a maximum of 12 cr hrs.
851 College Teaching
Designed as initial preparation for instruction at the college level; focuses on the generic skills, strategies, and issues common to university teaching.
Open to graduate students committed to teaching in any area at the college level. This course is graded S/U.
852 A History of the Education of Women
Investigation and critical analysis of selected educational theories by significant past and present theorists who have addressed the education of women. Prereq: Grad standing.
853 Women, Technology, and Education
Analysis of issues in the relationships between women’s lives and technological development; exploration of current needed educational response to these issues.
854 Evaluation Methods: Principles and Techniques for the Evaluation of Teachers
Designed to help people manage the design, implementation, and evaluation of performance appraisal and review systems in educational organizations.
1 2.5-hr cl. Prereq: 765.
856 Observing Classroom Instruction
Exploration of different approaches used to observe the nature of instruction in classrooms and other educational settings; examines theoretical bases and assumptions.
857 Individualizing Instruction
A study of theory, practice, and materials related to individualizing instruction.
858 Case Studies in Higher Education Administration
Designed to enhance decision-making skills and managerial communication and to increase understanding of current problems and practices in higher education governance and administration.
Prereq: 856.
859 Junior High School Curriculum
A study of various types of junior high school programs, with special emphasis upon teaching-learning procedures as they apply to the early adolescent years.
860 Fundamentals of Curriculum
Designed to serve as an overview of the field of curriculum and instruction; kindergarten through 12th grade.
1 2.5-hr cl.
861 Fundamentals of Supervision
Supervision of instruction emphasizing general principles and practices in elementary and secondary schools.
862 Role of the School in the Social Order
An orientation for teachers and administrators which deals with the basic purposes of secondary education in relation to major issues and current trends.
863 An Interpretive History of African-American Education: 1700-1950
Designed to give students an understanding of the education of African-Americans from the perspective of African-American scholars.
864 Fundamentals of Instruction
Survey of instructional theory and related behavioral science disciplines; emphasis is on application of principles of instructional theory to classroom teaching.
Prereq: Secondary (587) student teaching or equiv.
865 Curriculum Theory
Advanced study of curriculum; kindergarten through the 12th grade.
2 1.5-hr cl. Prereq: 860 or equiv.
866 Supervision Theory
Advanced study of supervision of instruction; kindergarten through the 12th grade.
Prereq: 861 or equiv.
867 Educational Experimentation
Analysis of contribution of selected experiments to elementary, secondary, and higher education; design of experimental method for attacking educational problems.
Prereq: 785 and 15 cr hrs of grad work in Edu. Repeatable to a maximum of 5 cr hrs.
<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Grading</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>884.32</td>
<td>Planned Field Experience: Higher Education</td>
<td>GRAD 1-15</td>
<td>Written permission of area adviser. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.</td>
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<tr>
<td>884.36</td>
<td>Planned Field Experience: Teacher Education</td>
<td>GRAD 1-15</td>
<td>Written permission of area adviser. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.</td>
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</tr>
<tr>
<td>884.40</td>
<td>Planned Field Experience: History of Education and Comparative Education</td>
<td>GRAD 1-15</td>
<td>Written permission of area adviser. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.</td>
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<tr>
<td>884.44</td>
<td>Planned Field Experience: Educational Administration and Supervision</td>
<td>GRAD 1-15</td>
<td>Written permission of area adviser. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.</td>
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<tr>
<td>884.49</td>
<td>Planned Field Experience: Curriculum and Instruction</td>
<td>GRAD 1-15</td>
<td>Written permission of area adviser. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.</td>
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<tr>
<td>884.50</td>
<td>Planned Field Experience: General Professional Studies</td>
<td>GRAD 1-15</td>
<td>Written permission of area adviser. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.</td>
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<tr>
<td>884.60</td>
<td>Planned Field Experience: Quantitative Research, Evaluation and Measurement</td>
<td>GRAD 1-15</td>
<td>Written permission of area adviser. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.</td>
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<tr>
<td>885.01</td>
<td>Educational Leadership, Learning and Teaching: Early Childhood</td>
<td>GRAD 4</td>
<td>Applies theory from classroom management, learning, motivation, and teaching to the practice of elementary education. Repeatable to a maximum of 8 cr hrs; subdivisions not repeatable. Administrative Licensure course.</td>
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<tr>
<td>885.02</td>
<td>Educational Leadership, Learning and Teaching: Middle Childhood, Adolescence to Young Adulthood</td>
<td>GRAD 4</td>
<td>Applies theory from classroom management, learning, motivation, and teaching to the practice of secondary education. Repeatable to a maximum of 8 cr hrs; subdivisions not repeatable. Administrative Licensure course.</td>
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<tr>
<td>886</td>
<td>Educational Leadership, Organization Dynamics and School Culture</td>
<td>GRAD 4</td>
<td>Focus on the school as a social system with emphasis on culture, structure, politics, decision making, leadership, and motivation. Administrative Licensure course.</td>
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<tr>
<td>887</td>
<td>Diversity in Higher Education</td>
<td>GRAD 3</td>
<td>A survey of collegiate experimental programs and practices, their philosophies, organization, administration, educational audiences, etc., for the culturally different.</td>
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</tr>
<tr>
<td>888</td>
<td>Group Interventions in Higher Education</td>
<td>GRAD 3</td>
<td>Emphasis on laboratory learning process for interpersonal growth and organizational dynamics; treatment of group theory, processes, and dynamics. Mandatory weekend lab. Prereq: Permission of instructor. Repeatable to a maximum of 9 or 10 hrs.</td>
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</tr>
<tr>
<td>889</td>
<td>Practicum in Instructional Design and Technology</td>
<td>GRAD 3-5</td>
<td>Group observation, limited participation, and functional analysis of design and implementation in instructional systems and environments. Repeatable to a maximum of 10 cr hrs.</td>
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</table>
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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>890</td>
<td>Action Research to Understand and Improve Educational Practices</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>891.01</td>
<td>Educational Leadership: Instructional Leadership and Supervision</td>
<td>4</td>
<td>Written permission of instructor. Repeatable to a maximum of 20 cr hrs.</td>
</tr>
<tr>
<td>891.02</td>
<td>Educational Leadership: Educational Leadership, Inquiry and Ethics</td>
<td>4</td>
<td>Written permission of instructor. Repeatable to a maximum of 20 cr hrs.</td>
</tr>
<tr>
<td>892</td>
<td>Learning, Culture and Technology</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>893.10</td>
<td>Advanced Individual Studies: Educational Policy and Leadership Educational Policy and Leadership. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.</td>
<td>1-15</td>
<td></td>
</tr>
<tr>
<td>893.30</td>
<td>Advanced Individual Studies: Educational Administration Educational Administration. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.</td>
<td>1-15</td>
<td></td>
</tr>
<tr>
<td>893.32</td>
<td>Advanced Individual Studies: Higher Education Higher Education. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.</td>
<td>1-15</td>
<td></td>
</tr>
<tr>
<td>893.36</td>
<td>Advanced Individual Studies: Teacher Education Teacher Education. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.</td>
<td>1-15</td>
<td></td>
</tr>
<tr>
<td>893.40</td>
<td>Advanced Individual Studies: History of Education and Comparative Education History of Education and Comparative Education. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.</td>
<td>1-15</td>
<td></td>
</tr>
<tr>
<td>893.44</td>
<td>Advanced Individual Studies: Educational Administration and Supervision Educational Administration and Supervision. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.</td>
<td>1-15</td>
<td></td>
</tr>
<tr>
<td>893.46</td>
<td>Advanced Individual Studies: Instructional Design Instructional Design. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.</td>
<td>1-15</td>
<td></td>
</tr>
<tr>
<td>893.49</td>
<td>Advanced Individual Studies: Curriculum and Instruction Curriculum and Instruction. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.</td>
<td>1-15</td>
<td></td>
</tr>
<tr>
<td>893.50</td>
<td>Advanced Individual Studies: General Professional Studies General Professional Studies. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.</td>
<td>1-15</td>
<td></td>
</tr>
<tr>
<td>893.60</td>
<td>Advanced Individual Studies: Quantitative Research, Evaluation and Measurement Quantitative Research, Evaluation and Measurement in Education. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.</td>
<td>1-15</td>
<td></td>
</tr>
<tr>
<td>894.10</td>
<td>Advanced Group Studies: Educational Policy and Leadership Advanced group studies on special problems in education: Educational Policy and Leadership. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.</td>
<td>1-15</td>
<td></td>
</tr>
<tr>
<td>894.30</td>
<td>Advanced Group Studies: Educational Administration Advanced group studies on special problems in education: Educational Administration. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.</td>
<td>1-15</td>
<td></td>
</tr>
<tr>
<td>894.32</td>
<td>Advanced Group Studies: Higher Education Advanced group studies on special problems in education: Higher Education. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.</td>
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<td>Advanced Group Studies: Teacher Education Advanced group studies on special problems in education: Teacher Education. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.</td>
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<td>Advanced Group Studies: Curriculum and Instruction Advanced group studies on special problems in education: Curriculum and Instruction. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.</td>
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</tr>
<tr>
<td>894.50</td>
<td>Advanced Group Studies: General Professional Studies Advanced group studies on special problems in education: General Professional Studies. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.</td>
<td>1-15</td>
<td></td>
</tr>
<tr>
<td>895</td>
<td>Fundamentals of Instructional Materials and Media Theory in educational media applied to the process of instructional development. Prereq: 675 or practical experience in using educational media in school settings.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>896</td>
<td>Educational Leadership Portfolio Development Designed to help students develop a professional portfolio based on administrative and academic experiences. Prereq or concur: 884.30. Repeatable to a maximum of 4 cr hrs. Administrative Licensure course.</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>897</td>
<td>Designing Multimedia for Instruction Introduction to the instructional capabilities and hands-on development of multimedia including videodisc and CDROM: topics include relevant learning theories, programming techniques and design models. Prereq: 678. Fundamentals of computing recommended.</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>899</td>
<td>Interdepartmental Seminar Two or more departments may collaborate in presenting seminars on subjects of mutual interest; topics to be announced.</td>
<td>1-5</td>
<td></td>
</tr>
<tr>
<td>901</td>
<td>Motivation in Learning and Teaching Examines research and theory about motivation to learn in academic settings, including studies of goal theory, social cognitive approaches and teaching practices. Prereq: Written permission.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>902</td>
<td>Educational Philosophy of John Dewey A systematic study of the writings of John Dewey in their bearings upon educational theory and practice. Prereq: 678. Fundamentals of computing recommended.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>903</td>
<td>Fundamentals of Journal Editing Fundamentals of journal writing, editing, management, and ethics. Practice in the use of copy-editing symbols and styles of publication.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>904</td>
<td>Women: Leadership and Empowerment Focus on understanding and enacting leadership and empowerment that is congruent with women's lives and feminist perspectives. Prereq: 678. A social action project. Prereq: Written permission.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>905</td>
<td>Cultural Foundations of Education Examines themes and theories that undergird the cultural foundations of education, technology, and qualitative inquiry. Preq: Au Qtr. Repeatable to a maximum of 6 cr hrs.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>906</td>
<td>Social Foundations of Education Examines themes and theories that undergird the social foundations of education, technology, and qualitative inquiry. Preq: Au Qtr. Repeatable to a maximum of 6 cr hrs.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>907</td>
<td>Research in Cultural Foundations, Technology, and Qualitative Inquiry Discussion of current research in cultural foundations, technology, and qualitative inquiry. Sp Qtr. Repeatable to a maximum of 6 cr hrs.</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>
### Education: Educational Policy and Leadership

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>909</td>
<td>Cultural Process in Education</td>
<td>3</td>
<td>Uses anthropological perspectives to examine how culture, ethnicity, and power operate in informal and formal educational settings in multiple context.</td>
</tr>
<tr>
<td>910</td>
<td>Admissions and Retention in Higher Education</td>
<td>3</td>
<td>Analysis and review of research and practice in college admissions and retention programs. Elective in MA and PhD programs in higher education and student affairs.</td>
</tr>
<tr>
<td>912</td>
<td>Impact of College on Students</td>
<td>3</td>
<td>Analysis of philosophical assumptions and statistical evidence on the impact of colleges. Part of doctoral core in higher education.</td>
</tr>
<tr>
<td>913</td>
<td>Leadership in Educational Administration</td>
<td>3</td>
<td>Study of theory and practice of leadership in educational administration; course directed to doctoral students concentrating in K-12 administration. Limited to 1st yr doctoral students in educational administration. Part of the doctoral core in educational administration.</td>
</tr>
<tr>
<td>914</td>
<td>Strategy and University Leadership</td>
<td>3</td>
<td>Advanced study of institutional strategy, resource management and leadership issues for colleges and universities. Prereq: B60 and B842, or permission of instructor. Course for PhD and advanced master's students interested in institutional leadership roles.</td>
</tr>
<tr>
<td>915</td>
<td>Professional Development in Higher Education</td>
<td>3</td>
<td>Introduction to research and theoretical foundations of organizational, faculty, and instructional development in higher education; emphasis on major issues and careers in professional development. Prereq: B51. Focus on professional development in higher education. Focus on professional development in higher education.</td>
</tr>
<tr>
<td>916</td>
<td>Data Based Decision Making in Educational Administration</td>
<td>3</td>
<td>Examines research in educational administration from a critical perspective. Prereq: Admission to PhD program. Limited to PhD students in ed-admin.</td>
</tr>
<tr>
<td>917</td>
<td>Professional Development in Higher Education</td>
<td>3</td>
<td>Provides for an in-depth study of and experiences with the dimensions of planning, instruction, developing, implementing and analyzing policies that further those aims. Au Qtr.</td>
</tr>
<tr>
<td>918</td>
<td>Educational Policy in Democratic Society</td>
<td>3</td>
<td>Focus on conceptions of democracy, democratic aims of public education, and the processes of developing, implementing and analyzing policies that further those aims. Au Qtr. 1 2.5-hr cl. Prereq: Doctoral students. Designed for doctoral students in the College of Education and Human Ecology. All others by permission of instructor.</td>
</tr>
<tr>
<td>924</td>
<td>Pedagogy in Teacher Education</td>
<td>6</td>
<td>Provides for an in-depth study of and experiences with the dimensions of planning, instruction, and assessment at the professorate level in teaching professional education. Su Qtr.</td>
</tr>
<tr>
<td>925.44</td>
<td>Seminars: Educational Administration and Supervision</td>
<td>2-5</td>
<td>Educational Administration and Supervision. Prereq: Written permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times. Repeatable.</td>
</tr>
<tr>
<td>925.46</td>
<td>Seminars: Instructional Design</td>
<td>2-5</td>
<td>Instructional Design. Prereq: Written permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times. Repeatable.</td>
</tr>
<tr>
<td>925.49</td>
<td>Seminars: Curriculum and Instruction</td>
<td>2-5</td>
<td>Curriculum and Instruction. Prereq: Written permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times. Repeatable.</td>
</tr>
<tr>
<td>925.50</td>
<td>Seminars: General Professional Studies</td>
<td>2-5</td>
<td>General Professional Studies. Prereq: Written permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times. Repeatable.</td>
</tr>
<tr>
<td>925.60</td>
<td>Seminars: Quantitative Research, Evaluation and Measurement in Education</td>
<td>2-5</td>
<td>Quantitative Research, Evaluation and Measurement in Education. Prereq: Written permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times. Repeatable. This course is graded S/U.</td>
</tr>
<tr>
<td>927</td>
<td>History of the Universities</td>
<td>3</td>
<td>The university as an institution through 10 centuries; patterns of development in different countries; German, English, and American contributions to the idea of the American university.</td>
</tr>
<tr>
<td>928</td>
<td>Inquiry in Teacher Education</td>
<td>3</td>
<td>Study of a variety of research in teacher education with emphasis on research on teacher effectiveness. 1 2.5-hr cl.</td>
</tr>
<tr>
<td>929</td>
<td>Program Development in Teacher Education</td>
<td>4</td>
<td>Focuses in totality of teacher education through the development of a teacher preparation program. Open only to PhD students.</td>
</tr>
<tr>
<td>930</td>
<td>Internship in Higher Education</td>
<td>6-12</td>
<td>Students are assigned as a participant-observer in a work situation closely approximating their vocational goals, under the supervision of a qualified practitioner or professor. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.</td>
</tr>
<tr>
<td>931</td>
<td>Applied Evaluation Design</td>
<td>3</td>
<td>Techniques for planning, implementing, and reporting the evaluation of programs in varied educational settings. 1 2-hr cl. Prereq: 765 or permission of instructor.</td>
</tr>
<tr>
<td>932</td>
<td>Trends, Issues, and Problems in Teacher Education</td>
<td>3</td>
<td>Provides awareness and knowledge of critical events and circumstances related to teacher preparation.</td>
</tr>
<tr>
<td>937</td>
<td>Field Experiences and Clinical Practices in Teacher Education</td>
<td>3</td>
<td>An analysis of the standards for, and the development, implementation, and supervision of field experiences and clinical practices in teacher education. Prereq: Master's degree, college supervision of student teachers, or permission of instructor.</td>
</tr>
<tr>
<td>938</td>
<td>Applied Multilevel Data Analysis</td>
<td>4</td>
<td>Methods for analysis of multilevel data focusing on design, application, analysis, and interpretation. Also an introduction to longitudinal models through individual growth curves. Wi Qtr. Prereq: 921 or permission of instructor.</td>
</tr>
<tr>
<td>943</td>
<td>Interaction of the Student and the Environment</td>
<td>3</td>
<td>A focus on the nature of the college environment, entering student, academic procedures, student performance, and student culture for those planning careers in college student personnel work. 2 1.5-hr cl.</td>
</tr>
<tr>
<td>944</td>
<td>Classroom Research on Student Motivation</td>
<td>3</td>
<td>In depth study of theories and research that address the development and support of students’ motivation to achieve in classroom settings. Sp Qtr.</td>
</tr>
<tr>
<td>945</td>
<td>Practicum in Higher Education</td>
<td>5</td>
<td>Supervised practicum in higher education offices such as admissions, dean of students, academic affairs, housing, international students, financial aid, student union. Prereq: Written permission of instructor. Repeatable to a maximum of 10 or hrs.</td>
</tr>
</tbody>
</table>
Education: Educational Policy and Leadership

946 The Writings of C. G. Jung: Implications for Educational Research and Practice
The writings of Jung are critically examined; implications for educational research and practice are discussed, with emphasis on student/professional development, interpersonal communications, and learning. Prereq: Grad standing
GRAD 3

947 The Theory of Psychological Types: Applications to Education
The theory of psychological types (C.G. Jung) and related literature will be critically examined, with applications to learner/teacher behaviors, achievement, academic advisement, assessment methods, and research. GRAD 3

949 Collective Bargaining and Contract
Introduction to the processes of collective bargaining in educational organizations. Prereq: 813, 846, 847, or permission of the instructor. GRAD 3

952 Legal Aspects of School Administration
A study of statutory and case law, legal principles, and provisions relevant to educational administration, particularly in the areas of personnel, finance, curriculum, contracts, property, liability, and organization. Prereq: 846 or equiv. GRAD 3

953 School Community Relations
Principles and practice in developing and maintaining appropriate school/community relationships; opinion analysis; communication processes; decision-making patterns. Prereq: 846 or equiv. GRAD 3

954 Theory and Practice Student Development in Higher Education
The organization and practice of student development services; college student development theory and approaches to student development. Repeatable to a maximum of 6 cr hrs. GRAD 3

955 Staff Personnel Administration
Study of personnel administration in educational institutions; theory, principles, and practices as they relate to personnel policy, recruitment, selection, orientation, appraisal, in-service education, promotion, collective negotiations, and general welfare. Prereq: 846. GRAD 3

956 School Finance
Examination of the theory and economics of financing public education; emphasis on sources of revenue, variations in ability and effort, state-local plans, and the federal role. Prereq: 846. GRAD 3

957 Business Administration of Schools
Function and role of business administrators in schools; emphasis on budgeting; payroll and accounting; purchasing; planning, constructing, operating, and maintaining the school plant. GRAD 3

958 Educational Facility Planning
Problems and techniques in determining educational facility needs, evaluating facilities, planning for new construction and remodeling, and utilizing specialized personnel, related legal and financial aspects. Prereq: 846 or equiv. GRAD 3

959 Organizational Behavior in Education: Theory and Research
Analysis of significant research in organization theory. 2 2-3 hr cl, lab arr. Prereq: Master's degree and permission of instructor. GRAD 4

960 Doctoral Core II
Advanced study of administrative problems, leadership, and organization behavior from personality and developmental perspectives. Prereq: Master's degree and permission of instructor. GRAD 4

961 Social and Political Contexts of Education
Advanced study of the political and social settings of education. Prereq: Master's degree and permission of instructor. GRAD 4

962 Board Relations
A study of the respective ideas and responsibilities of the board of education (board of trustees) and the superintendent (chief educational administrator) in the governance of the school district (college/university). Prereq: 810, 813, 846, 849, 861, and 9250/44. GRAD 3

963 Legal Aspects of Special Education Administration
Legislative, executive, and judicial action pertaining to the rights of students with disabilities, with focus on the responsibilities of school administrators and state officials. 1 cl. Prereq: 840, 9520/N, or permission of instructor. GRAD 3

966 Practicum in Educational Research and Evaluation
The utilization of research strategies and evaluation techniques in studying educational problems with emphasis upon the development, conduct, and completion of individual projects. 3 cl. Prereq: Previous courses in the basic sequence in educational research or evaluation or permission of instructor. GRAD 3

967 Analyzing Qualitative Data in Educational Research
Focus on the interpretation of qualitative data and the writing of research reports. 1 3-hr cl, 6 hrs lab, Prereq: 803 and 966 or equiv. GRAD 5

971 Legal Research in Educational Administration
Inquiry into the field of educational administration using legal research methodology. Limited to doctoral students only. GRAD 3

971.10 Research: Educational Policy and Leadership
Research for thesis or dissertation purposes only: Educational Policy and Leadership. Repeatable. This course is graded S/U. GRAD 1-18

971.30 Research: Educational Administration
Research for thesis or dissertation purposes only: Educational Administration. Repeatable. This course is graded S/U. GRAD 1-18

971.32 Research: Higher Education
Research for thesis or dissertation purposes only: Higher Education. Repeatable. This course is graded S/U. GRAD 1-18

971.36 Research: Teacher Education
Research for thesis or dissertation purposes only: Teacher Education. Repeatable. This course is graded S/U. GRAD 1-18

971.44 Research: Educational Administration and Supervision
Research for thesis or dissertation purposes only: Educational Administration and Supervision. Repeatable. This course is graded S/U. GRAD 1-18

971.46 Research: Instructional Design
Research for thesis or dissertation purposes only: Instructional Design. Repeatable. This course is graded S/U. GRAD 1-18

971.49 Research: Curriculum and Instruction
Research for thesis or dissertation purposes only: Curriculum and Instruction. Repeatable. This course is graded S/U. GRAD 1-18

971.50 Research: General Professional Studies
Research for thesis or dissertation purposes only: General Professional Studies. Repeatable. This course is graded S/U. GRAD 1-18

971.60 Research: Quantitative Research, Evaluation and Measurement
Research for thesis or dissertation purposes only: Quantitative Research, Evaluation and Measurement in Education. Repeatable. This course is graded S/U. GRAD 1-18

Education: Physical Activity and Ed Services

100 School of PAES Survey
Academic requirements and resources; University policies, college procedures and resources; student rights and responsibilities; academic areas of specialization; careers in PAES. Repeatable. This course is graded S/U. UGRD 1

102 First Aid
A consideration of first aid practices to the injured; designed to lead to Red Cross certification in first aid. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu. UGRD 2

103 Health and Well-Being in American Society
A study of student health problems; designed to foster understandings and attitudes needed for intelligent decision-making related to present and future health needs. Not open to students with credit in other freshman survey courses. UGRD 3

122 Techniques in Cardiopulmonary Resuscitation
Development of skills and competency in recognizing and reacting to situations requiring cardiopulmonary resuscitation measures; completion leads to certification in CPR by American Red Cross. This course is graded S/U. UGRD 1

137 Sport for the Spectator
A study of the great American spectator sports including football, basketball, baseball, ice hockey, golf, tennis, and others which meet the interests of the class. UGRD 3

139.01 Introductory Program of Outdoor Pursuits: Scuba II
Introduction to fresh water diving. Preregistration with department required. Prereq: 179 or equiv. Not open to students who have completed a corresponding subdivision of 140. Travel and subsistence costs for activities will be borne by the student. Student must provide wetsuit (rentals may be available). This course is graded S/U.
139.02 Introductory Program of Outdoor Pursuits: UGRD 1

Whitewater Rafting

Introduction to basic whitewater rafting, including: river reading, paddling techniques, equipment, trip planning, and safety. 6 hrs, 24 lab hrs, arr. Preregistration with department required. Not open to students who have completed a corresponding subdivision of 140. Prereq: Student must provide sleeping bag and appropriate clothing for river conditions. Travel and subsistence costs for activities will be borne by the student. This course is graded S/U.

139.03 Introductory Program of Outdoor Pursuits: UGRD 1

Backpacking I

Introduction to basic backpacking techniques, equipment, wilderness travel, emergency procedures, and environmental awareness. Preregistration with department required. Not open to students who have completed a corresponding subdivision of 140. Travel and subsistence costs for activities will be borne by the student. Student must provide sleeping bag and hiking boots. This course is graded S/U.

139.05 Introductory Program of Outdoor Pursuits: UGRD 1

Winter Backpacking

Designed for the experienced backpacker and covers winter camping, clothing, travel techniques, and advanced first aid. Preregistration with department required. Prereq: 139.03 or previous backpacking experience. Not open to students who have completed a corresponding subdivision of 140. Travel and subsistence costs for activities will be borne by the student. Student must provide sleeping bag and hiking boots. This course is graded S/U.

139.07 Introductory Program of Outdoor Pursuits: UGRD 1

Experimental Sections

Activities will be announced and publicized whenever an experimental section is deemed worthy of trial. Preregistration with department required. Not open to students who have completed a corresponding subdivision of 140. Travel and subsistence costs for activities will be borne by the student. This course is graded S/U.

139.09 Introductory Program of Outdoor Pursuits: UGRD 1

Caving I

Introduction to basic caving techniques, equipment, trip planning, and safety; cave related ecology, flora, and fauna will also be emphasized. Preregistration with department required. Not open to students who have completed a corresponding subdivision of 140. Travel and subsistence costs for activities will be borne by the student. Student must provide sleeping bag. This course is graded S/U.

139.10 Introductory Program of Outdoor Pursuits: UGRD 1

Lightweight Backpacking

Advanced backpacking activities including navigation, rope handling skills, and survival techniques. Preregistration with department required. Prereq: 139.03 or previous backpacking experience. Not open to students with credit for 140.05. Travel and subsistence costs for activities will be borne by the student. Student must provide sleeping bag and hiking boots. This course is graded S/U.

139.11 Introductory Program of Outdoor Pursuits: UGRD 1

Rock Climbing

Basic rock climbing techniques, rope handling, and safety systems will be covered. Preregistration with department required. Prereq: Good physical condition. Not open to students who have completed a corresponding subdivision of 140. Travel and subsistence costs for activities will be borne by the student. Students must provide sleeping bag, appropriate footgear for the climbing trip and a 20' length of new 1" nylon webbing. This course is graded S/U.

139.12 Introductory Program of Outdoor Pursuits: UGRD 1

Beginning Trap Shooting

An introductory course covering equipment selection and maintenance, shooting techniques, scoring, safety, and the opportunities for lifetime involvement. Preregistration with department required. Not open to students who have completed a corresponding subdivision of 140. Travel and subsistence costs for activities will be borne by the student. Cost of ammunition and targets must be borne by the student. This course is graded S/U.

139.13 Introductory Program of Outdoor Pursuits: UGRD 1

Orienteering

Introduction to the sport of orienteering involving compass skills, map reading, and cross-country travel; cross-country racing in its competitive form. Preregistration with department required. Not open to students who have completed a corresponding subdivision of 140. Travel and subsistence costs for activities will be borne by the student. Student must provide compass and bear transportation costs. This course is graded S/U.

139.14 Introductory Program of Outdoor Pursuits: UGRD 1

Skydiving

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. Au, Sp, Su Qtrs. This course is graded S/U.

139.16 Introductory Program of Outdoor Pursuits: UGRD 1

Small Bore Outdoor Prone Rifle Shooting

A continuation of 171.01 and 171.02 in the sport of outdoor prone shooting as practiced locally and nationally. Arr. Preregistration with department required. Prereq: 171.01 or 171.02 or permission of instructor. Not open to students who have completed a corresponding subdivision of 140. Repeatable to a maximum of 2 cr hrs. Travel and subsistence costs for activities will be borne by the student. Fee for supplies required. This course is graded S/U.

139.18 Hot Air Ballooning UGRD 1

Introduction to hot air ballooning. Covers history, design, structure, and flight procedures of the modern balloon. Students crew flights and act as balloon chasers. Au, Sp, Su Qtrs. This course is graded S/U.

140.03 Outdoor Pursuits Program: Backpacking II UGRD 3

Opportunity for practice in advanced camping and outing skills on an extended trip. Preregistration with dept is required. Prereq: Backpacking I or prior backpacking experience.

140.05 Outdoor Pursuits Program: Lake Erie Sport Fishing UGRD 3

Fishing

An introduction to techniques and equipment used in Lake Erie sport fishing featuring Lake Erie angling trips with lectures that include related aquatic science information. Su Qtr. 2-13 hrs/day. Preregistration with dept is required. Prereq: Permission of instructor. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

140.06 Outdoor Pursuits Program: Skiing UGRD 3

Preregistration with dept is required.

140.07 Outdoor Pursuits Program: Experimental Sections UGRD 3

Activities deemed worthy of developing on an experimental basis; activities will be announced and published when course is offered. Preregistration with dept is required.

140.10 Outdoor Pursuits Program: Wilderness Advanced First Aid

Will prepare students for emergency situations that involve prolonged patient care and transport, severe environments, and improvised gear. 4 day intensive live-in program. Arr. Preregistration with dept is required. Repeatable to a maximum of 6 cr hrs.

142.01 Archery I UGRD 1

Introductory skills and knowledge essential for target shooting.

143.01 Badminton I UGRD 1

Beginning skills and knowledge essential for playing badminton.

143.02 Badminton II UGRD 1

Continuation of 143.01 with emphasis on advanced strategy in doubles and singles; intermediate skills. Prereq: 143.01 or equiv racquet sport experience.

144.01 Basketball Women UGRD 1

Skill and strategy necessary for playing basketball. Prereq: Previous playing experience. Those with varsity experience should elect 631.02. Limited to Women only.

144.02 Basketball Men UGRD 1

Skill and strategy necessary for playing basketball. Prereq: Previous playing experience. Those with varsity experience should elect 631.02. Limited to Men only.

145.01 Bowling I UGRD 1

Introductory skills and knowledge essential for bowling. Students must provide bowling shoes (rentals available) and have ID card.

145.02 Bowling II UGRD 1

Emphasis on improving the average through increased efficiency in the use of the hook ball and spot bowling. Prereq: 145.01 or ability to average at least 125. Students must provide bowling shoes (rentals available) and have ID card.

146 Boxing for Beginners UGRD 1

Fundamentals of boxing.
140 Education: Physical Activity and Ed Services

147 Conditioning Principles UGRD 1
Students will have the opportunity to study conditioning materials and principles. Register for desired concurrent sections using 148 decimal designation. 1-1 hr class. Prereq: Must take 148.01 or 148.02 or 148.03 or 148.04 or 148.05 or 148.06 concurrently.
148.01 Conditioning Activities: Circuit Training UGRD 1
Students will have the opportunity to experience a conditioning activity of their choice. Prereq: Must be taken concurrently with 147.
148.02 Conditioning Activities: Jogging UGRD 1
Students will have the opportunity to experience a conditioning activity of their choice. Prereq: Must be taken concurrently with 147.
148.03 Conditioning Activities: Swimming UGRD 1
Students will have the opportunity to experience a conditioning activity of their choice. Prereq: Must be taken concurrently with 147.
148.04 Conditioning Activities: Weight Training UGRD 1
Students will have the opportunity to experience a conditioning activity of their choice. Prereq: Must be taken concurrently with 147.
148.05 Conditioning Activities: Cardio Equipment Training UGRD 1
Students will have the opportunity to experience a conditioning activity of their choice. Prereq: Must be taken concurrently with 147.
148.06 Conditioning Activities: Rhythmic Aerobics UGRD 1
Students will have the opportunity to experience a conditioning activity of their choice. Prereq: Must be taken concurrently with 147.
149.01 Lifetime Fitness Programs: Circuit Training UGRD 1
Continued application of the principles covered in 147 and 148. Prereq: Must have taken 147. This course is graded S/U.
149.02 Lifetime Fitness Programs: Jogging UGRD 1
Continued application of the principles covered in 147 and 148. Prereq: Must have taken 147.
149.03 Lifetime Fitness Programs: Swimming UGRD 1
Continued application of the principles covered in 147 and 148. Prereq: Must have taken 147.
149.04 Lifetime Fitness Programs: Weight Training UGRD 1
Continued application of the principles covered in 147 and 148. Prereq: Must have taken 147.
149.05 Lifetime Fitness Programs: Cardio Equipment Training UGRD 1
Continued application of the principles covered in 147 and 148. Prereq: Must have taken 147.
149.06 Lifetime Fitness Programs: Rhythmic Aerobics UGRD 1
Continued application of the principles covered in 147 and 148. Prereq: Must have taken 147.
150 Increasing Free Living Physical Activity UGRD 2
Web-based course to promote self-regulation skills to support adherence to physical activity.
152.01 Social Dance I Women UGRD 1
Opportunities provided to learn a variety of standard social dances such as foxtrot, waltz, swing dance positions; and related cultural paradigms. Introduction to basic steps and variations of selected dances. Cross-listed with 152.02.
152.02 Social Dance I Men UGRD 1
Opportunities provided to learn a variety of standard social dances such as foxtrot, waltz, swing dance positions; and related cultural paradigms. Social Dance I Men. Cross-listed with 152.01.
152.03 Social Dance II Women UGRD 2
Opportunities provided to learn a variety of standard social dances such as foxtrot, waltz, swing dance positions; and related cultural paradigms. Continuation of 152.01 with emphasis on style and technique; introduction of additional social dance contents. Prereq: 152.01 or equivalent experience. Cross-listed with 153.04.
152.04 Social Dance II Men UGRD 2
Opportunities provided to learn a variety of standard social dances such as foxtrot, waltz, swing dance positions; and related cultural paradigms. Continuation of 152.02 with emphasis on style and technique; introduction of additional social dance contents. Prereq: 152.02 or equivalent experience. Cross-listed with 152.03.
152.05 Social Dance III Women UGRD 2
Opportunities provided to learn a variety of standard social dances such as foxtrot, waltz, swing dance positions; and related cultural paradigms. Advanced social dance skills and techniques with increased emphasis on design and development of steps and variations; a performance project is required. Prereq: 152.03 or equivalent experience. Repeatable to a maximum of 4 or hrs. Cross-listed with 152.06.
152.06 Social Dance III Men UGRD 2
Opportunities provided to learn a variety of standard social dances such as foxtrot, waltz, swing dance positions; and related cultural paradigms. Advanced social dance skills and techniques with increased emphasis on design and development of steps and variations; a performance project is required. Prereq: 152.04 or equivalent experience. Repeatable to a maximum of 4 or hrs. Cross-listed with 152.05.
153.05 Recreational Dance: Folk and Square Dance I UGRD 1
Introduction to basic folk and square dance steps and patterns.
154.01 Fencing I UGRD 1
Fundamentals of foil fencing.
154.02 Fencing II UGRD 1
Continuation of 154.01 with emphasis on the bout. Prereq: 154.01 or equiv.
155.01 Physical Fitness Training for the ROTC: Army UGRD 1
Designed to allow ROTC student to demonstrate improvement in overall physical conditioning, body composition, and general health. Concurrent enrollment in Military Science Program. Limited to students enrolled in Reserve Officer Training Corps (ROTC). Repeatable to a maximum of 8 cr hrs. This course is graded S/U.
155.02 Physical Fitness Training for the ROTC: Navy UGRD 1
Designed to allow ROTC student to demonstrate improvement in overall physical conditioning, body composition, and general health. Concurrent enrollment in Military Science Program. Limited to students enrolled in Reserve Officer Training Corps (ROTC). Repeatable to a maximum of 8 cr hrs. This course is graded S/U.
156.03 Flag Football UGRD 1
Fundamental skills of touch football. Co-ed sections for experienced touch football players.
157.01 Golf I UGRD 1
Introductory skills and knowledge preparatory to course play with emphasis on irons.
157.02 Golf II UGRD 1
Continuation of 157.01 with emphasis on woods and on introduction to course play. Prereq: 157.01 or equiv. Advanced players should elect 631.06.
158.10 Tumbling I UGRD 1
Development and practice of gymnastic skills. Introduction to basic through advanced-basic tumbling skills. Subdivisions 158.01 and 158.04 not repeatable.
158.11 Tumbling II UGRD 1
Development and practice of gymnastic skills. Introduction to advanced-basic through intermediate tumbling skills. Prereq: 158.10 or previous experience. Subdivisions 158.01 and 158.04 not repeatable.
161.01 Horseback Riding: Western Style I UGRD 1
Student will safely halter, lead, groom, saddle, bridle, ride at a walk and jog/canter in the Western riding discipline. Travel and stable costs (rental of horse and equipment) for activities must be borne by the student. Offered only when arrangements can be made with local stables. Preregistration with dept required. This course is graded S/U.
161.02 Horseback Riding: Western Style II UGRD 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. Prereq: 161.01 or prior experience. Travel and stable costs (rental of horse and equipment) for activities must be borne by the student. Offered only when arrangements can be made with local stables. Preregistration with dept required. This course is graded S/U.
161.03 Horseback Riding: Western Style III UGRD 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). Prereq: 161.02 or equiv. Travel and stable costs (rental of horse and equipment) for activities must be borne by the student. Offered only when arrangements can be made with local stables. Preregistration with dept required. This course is graded S/U.
161.05 Horseback Riding: English Style I UGRD 1
Student will safely halter, lead, groom, saddle, bridle, ride at a walk and jog/canter in the English riding discipline. Travel and stable costs (rental of horse and equipment) for activities must be borne by the student. Offered only when arrangements can be made with local stables. Preregistration with dept required. This course is graded S/U.
161.06 Horseback Riding: English Style II UGRD 1
Student will effectively access equipment; walk, jog, or trot without breaking gait, halts on command; learn to centerlope, and good seat and control. 
Prereq: 161.05 or prior experience. Travel and stable costs (rental of horse and equipment) for activities must be borne by the student. Offered only when arrangements can be made with local stables. Preregistration with dept required. This course is graded S/U.

161.07 Horseback Riding: English Style III UGRD 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. 
Prereq: 161.06 or equiv. Travel and stable costs (rental of horse and equipment) for activities must be borne by the student. Offered only when arrangements can be made with local stables. Preregistration with dept required. This course is graded S/U.

162.01 Ice Skating I UGRD 1
Fundamentals of balance, movement, and safety on the ice; forward, backward, and stopping. 
Guidance in choice, use and care of equipment. 
Open only to beginners. Students must provide skates (rentals available). This course is graded S/U.

162.02 Ice Skating II UGRD 1
Elementary skating with emphasis on correct technique for basic skills. 
Prereq: 162.01 or ability to skate forward, backward, and stop with no balance problems. 
Students must provide skates (rentals available).

162.03 Ice Skating III UGRD 2
Power skating; designed for persons having had more than 30 hrs on ice and who can execute the basic strokes (including back crossovers) with correct techniques. 
Prereq: 162.02 or 162.04 or equiv skill level. Students must provide skates (rentals available).

163.01 Figure Skating I UGRD 2
Figure skating skills and techniques including the elements of free skating and compulsory figures. 
Lectures: survey of figure skating includes history, types of competition, judging, recreational, and show skating. Lab: introduction to free skating, compulsory figures, and dance skating. 
Prereq: 163.03 or permission of instructor. Students must provide figure skates (no rentals). 
VPA Admis Cond courses.

163.02 Figure Skating II UGRD 2
Intermediate and advanced freestyle; intermediate: all single jumps, basic spins, and advanced footwork; advanced: jump combinations, spin combinations, and double jumps. 
Prereq: 163.01 or permission of instructor. Students must provide figure skates (no rentals). 
VPA Admis Cond courses.

163.03 Creative Skating UGRD 2
Figure skating skills and techniques including the elements of free skating and compulsory figures. 
Students must provide figure skates (no rentals). VPA Admis Cond courses.

163.05 Competitive Figure Skating UGRD 2
Compulsory figures and freestyle designed to prepare skater for United States Figure Skating Association tests and competitions. 
Prereq: 163.02 or permission of instructor. Students must provide figure skates (no rentals). 
VPA Admis Cond courses.

164.01 Ice Hockey I UGRD 1
Introductory skills and techniques of ice hockey. 
Prereq: 164.02 or equiv. Open only to beginners. Students must provide hockey skates (rentals available).

164.03 Ice Hockey II UGRD 1
Intermediate advanced play. 
Prereq: 164.01 or previous playing experience. Students must provide hockey skates (rentals available).

168 Movement and Self Awareness UGRD 1
Student's natural movement vocabulary is expanded and extended through movement experiences designed to heighten self and social awareness; creative rather than imitative approach is used.

169.01 Martial Arts Forms: Aikido UGRD 1
An introduction to a harmonizing martial art, designed to increase physical and mental centeredness; to improve grace, balance, awareness, and general movement abilities; to aid in self defense.

169.04 Martial Arts Forms: Judo I UGRD 1
Introductory skills and knowledge essential in throwing techniques and mat work of Judo.

169.05 Martial Arts Forms: Judo II UGRD 2
Intermediate skills and techniques of Judo as well as an introduction to the skills involved in competitive Judo. 
Prereq: 164.04 or equiv or certified Gokyu by National Collegiate Judo Association.

169.06 Martial Arts Forms: Judo III UGRD 2
Advanced skill acquisition in techniques of sport Judo and experience in competitive Judo. 
Prereq: 169.05 or equiv or certified Yonkyu by National Collegiate Judo Association.

169.07 Martial Arts Forms: Karate I UGRD 1
Introduction to the fundamental forms and techniques of Karate.

169.08 Martial Arts Forms: Karate II UGRD 2
The refinement of basic forms and techniques and the introduction of advanced forms; more emphasis on free fighting. 
Prereq: 169.07 or equiv.

169.10 Martial Arts Forms: Shuai Chiao UGRD 1
Introduction to the various forms and techniques of Shuai Chiao-Chinese wrestling, a combination of Karate and Judo.

169.13 Martial Arts Forms: Tae Kwon Do I UGRD 1
Beginning course in the Korean martial art form; includes etiquette, basic blocking, thrusting and kicking techniques, and self defense.

169.14 Martial Arts Forms: Tae Kwon Do II UGRD 2
Continuation of Tae Kwon Do I, refinement of technique and form; introduction of intermediate forms and skills, breaking, and conditioning techniques. 
Prereq: 169.13.

169.16 Martial Arts Forms: Tai Chi Ch”uan UGRD 1
An introduction to Tai Chi Ch”uan with emphasis on an exploration of body/energy awareness. Repeatabler to a maximum of 3 cr hrs. 

169.17 Martial Arts Forms: Tai Chi Ch”uan II UGRD 1
Intermediate forms and techniques of Tai Chi Ch”uan and experience in joint hands operation as well as in combat Tai Chi Ch”uan. 
Prereq: 169.16 or equiv. Not open to students with credit for 169.17.

169.18 Martial Arts Forms: Tai Chi Ch”uan III UGRD 2
Further development of the form practiced in Tai Chi Ch”uan II; principles of breath control, mediation, and self massage are introduced. 
Prereq: 169.17. Repeatalbe to a maximum of 4 cr hrs.

170.01 Racquetball I UGRD 1
Beginning skills and knowledge for students with no prior experience in racquetball.

170.02 Racquetball II UGRD 1
Continuation of 170.01 with emphasis on strategy and the playing of singles. 
Prereq: 170.01 or equiv. 

171.01 Riflery I UGRD 1
Introduction to target shooting techniques in the prone and standing positions. 
Prereq: 171.01.

171.02 Riflery II UGRD 1
A continuation of 171.01 stressing the other shooting positions. 
Prereq: 171.01.

171.03 International Air Pistol Target Shooting UGRD 1
Introduction to the sport of international air pistol shooting.

172.01 Self Defense Women UGRD 1
Skills and understandings essential to defend oneself against an aggressor with emphasis on avoiding attack. 
Self Defense Women. Limited to women only.

172.02 Self Defense Men UGRD 1
Skills and understandings essential to defend oneself against an aggressor with emphasis on avoiding attack. 
Self Defense Men.

174.01 Soccer: Women UGRD 1
Techniques and knowledge essential for playing soccer.

174.03 Soccer: Men UGRD 1
Techniques and knowledge essential for playing soccer.

175.01 Softball: Women’s Slo Pitch I UGRD 1
Skills and knowledge necessary for playing softball.

175.02 Softball: Women’s Slo Pitch II UGRD 1
Skills and knowledge necessary for playing softball. 
Prereq: Intermediate level skills.

175.06 Softball: Men’s Slo Pitch I UGRD 1
Skills and knowledge necessary for playing softball. 
Prereq: Intermediate skills.

175.07 Softball: Men’s Slo Pitch II UGRD 1
Skills and knowledge necessary for playing softball. 
Prereq: Intermediate skills.

176.00 Squash UGRD 1
Skills and knowledge necessary for playing squash. 
2 lab hrs arr.

178.01 Swimming I UGRD 2
Beginning swimming. 
Open only to non-swimmers and students with no deep water experience. Student must provide bathing suit. See 147 and 148 for swim conditioning. This course is graded S/U.
178.02 Swimming II  
UGRD  2  
Elementary swimming skills for those who can swim in deep water but no farther than 2 pool lengths (50 yards). Student must provide bathing suit. See 147 and 148 for swim conditioning.

178.03 Swimming III  
UGRD  2  
Intermediate skills for those who can swim at least 100 yards using the front crawl and at least 2 other strokes. Prereq: 178.01 or equiv. Student must provide bathing suit. See 147 and 148 for swim conditioning.

179  Skin and Scuba Diving  
UGRD  3  
Skills and knowledge essential for safe diving and preparation for open water checkout dives. Prereq: Ability to swim 25-miles in 10 min. Student must provide bathing suit at a personal cost of special scuba medical exam. See 139 and 140 for additional offerings.

180.01 Springboard Diving I  
UGRD  1  
Fundamentals of diving from the one meter (low) board. Prereq: 178.02 or equiv. Student must provide bathing suit.

182.02 Water Safety Instructor  
UGRD  3  
Designed to lead to certification as an American Red Cross Water Safety Instructor. Student must provide bathing suit. Repeatable to a maximum of 12 hrs. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

182.05 Lifeguard Training I  
UGRD  3  
Designed to lead to ARC Lifeguard Training and CPR for the Professional Rescue certification. Prereq: 178.03 or equiv. Student must provide bathing suit. Repeatable to a maximum of 12 hrs. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

183  Water Polo  
UGRD  2  
Introductory skills and knowledge essential in the sport of water polo. Prereq: 178.03 or equiv. Student must provide bathing suit.

185.01 Table Tennis I  
UGRD  1  
Beginning skills and knowledge essential for playing table tennis with emphasis on the use of backspin and topspin in the singles game.

185.02 Table Tennis II  
UGRD  1  
Continuation of 185.01 with emphasis on advanced strokes and their application in the playing of singles and doubles. Prereq: 185.01 or the ability to do backspin and topspin serves.

188.01 Tennis I  
UGRD  1  
Skills and knowledge essential in playing tennis. Beginning skills; forehand, backhand, and serve-singles play. Student must provide racket and 6 balls; advanced students should elect 631.10.

188.02 Tennis II  
UGRD  1  
Skills and knowledge essential in playing tennis. Elementary skills; introduction to doubles play. Prereq: 188.01 or equiv. Student must provide racket and 6 balls; advanced students should elect 631.10.

190.04 Acrrosport I  
UGRD  1  
Basic skills in tumbling, and hand balancing, subdivisions not repeatable.

191.01 Volleyball I  
UGRD  2  
Introduction to power volleyball. Advanced students should elect 631.14.

191.02 Volleyball II  
UGRD  2  
Continuation of power volleyball fundamental skill perfection and game strategies woven to produce an intermediate playing experience. Prereq: 191.01 or equiv. Advanced students should elect 631.14.

195.01 Yoga I  
UGRD  1  
Introduction to fundamental techniques and basic yogaic principles of pranayama (breath control), asana (posture), relaxation, and meditation; emphasis on major postures.

195.02 Yoga II  
UGRD  1  
Introduction to fundamental techniques and basic yogaic principles of pranayama (breath control), asana (posture), relaxation, and meditation; emphasis on major postures. Asanas (postures) at the intermediate level of Hatha yoga are introduced; continued development and practice of relaxation and meditative techniques; further exploration of yogaic philosophy. Prereq: 195.01 or equiv.

195.03 Yoga in Depth  
UGRD  3  
This course will allow students the opportunity to explore the theory behind the practice of yoga in addition to its meditative benefits. Prereq: 195.01 or permission of instructor.

196.01 Varsity Squads: Baseball  
UGRD  2  
Participation as a player on a varsity squad. Prereq: Admission by tryout. Repeatable to a maximum of 10 cr hrs in any combination of decimal subdivisions. This course is graded S/U.

196.02 Varsity Squads: Basketball  
UGRD  2  
Participation as a player on a varsity squad. Prereq: Admission by tryout. Repeatable to a maximum of 10 cr hrs in any combination of decimal subdivisions. This course is graded S/U.

196.03 Varsity Squads: Cross Country  
UGRD  2  
Participation as a player on a varsity squad. Prereq: Admission by tryout. Repeatable to a maximum of 10 cr hrs in any combination of decimal subdivisions. This course is graded S/U.

196.04 Varsity Squads: Fencing  
UGRD  2  
Participation as a player on a varsity squad. Prereq: Admission by tryout. Repeatable to a maximum of 10 cr hrs in any combination of decimal subdivisions. This course is graded S/U.

196.05 Varsity Squads: Field Hockey  
UGRD  2  
Participation as a player on a varsity squad. Prereq: Admission by tryout. Repeatable to a maximum of 10 cr hrs in any combination of decimal subdivisions. This course is graded S/U.

196.06 Varsity Squads: Football  
UGRD  2  
Participation as a player on a varsity squad. Prereq: Admission by tryout. Repeatable to a maximum of 10 cr hrs in any combination of decimal subdivisions. This course is graded S/U.

196.07 Varsity Squads: Golf  
UGRD  2  
Participation as a player on a varsity squad. Prereq: Admission by tryout. Repeatable to a maximum of 10 cr hrs in any combination of decimal subdivisions. This course is graded S/U.

196.08 Varsity Squads: Gymnastics  
UGRD  2  
Participation as a player on a varsity squad. Prereq: Admission by tryout. Repeatable to a maximum of 10 cr hrs in any combination of decimal subdivisions. This course is graded S/U.

196.09 Varsity Squads: Ice Hockey  
UGRD  2  
Participation as a player on a varsity squad. Prereq: Admission by tryout. Repeatable to a maximum of 10 cr hrs in any combination of decimal subdivisions. This course is graded S/U.

196.10 Varsity Squads: Lacrosse  
UGRD  2  
Participation as a player on a varsity squad. Prereq: Admission by tryout. Repeatable to a maximum of 10 cr hrs in any combination of decimal subdivisions. This course is graded S/U.

196.11 Varsity Squads: Pistol  
UGRD  2  
Participation as a player on a varsity squad. Prereq: Admission by tryout. Repeatable to a maximum of 10 cr hrs in any combination of decimal subdivisions. This course is graded S/U.

196.12 Varsity Squads: Riflery  
UGRD  2  
Participation as a player on a varsity squad. Prereq: Admission by tryout. Repeatable to a maximum of 10 cr hrs in any combination of decimal subdivisions. This course is graded S/U.

196.13 Varsity Squads: Soccer  
UGRD  2  
Participation as a player on a varsity squad. Prereq: Admission by tryout. Repeatable to a maximum of 10 cr hrs in any combination of decimal subdivisions. This course is graded S/U.

196.14 Varsity Squads: Softball  
UGRD  2  
Participation as a player on a varsity squad. Prereq: Admission by tryout. Repeatable to a maximum of 10 cr hrs in any combination of decimal subdivisions. This course is graded S/U.

196.15 Varsity Squads: Swimming  
UGRD  2  
Participation as a player on a varsity squad. Prereq: Admission by tryout. Repeatable to a maximum of 10 cr hrs in any combination of decimal subdivisions. This course is graded S/U.

196.16 Varsity Squads: Swimming (Synchronized)  
UGRD  2  
Participation as a player on a varsity squad. Prereq: Admission by tryout. Repeatable to a maximum of 10 cr hrs in any combination of decimal subdivisions. This course is graded S/U.

196.17 Varsity Squads: Tennis  
UGRD  2  
Participation as a player on a varsity squad. Prereq: Admission by tryout. Repeatable to a maximum of 10 cr hrs in any combination of decimal subdivisions. This course is graded S/U.

196.18 Varsity Squads: Track and Field  
UGRD  2  
Participation as a player on a varsity squad. Prereq: Admission by tryout. Repeatable to a maximum of 10 cr hrs in any combination of decimal subdivisions. This course is graded S/U.

196.19 Varsity Squads: Volleyball  
UGRD  2  
Participation as a player on a varsity squad. Prereq: Admission by tryout. Repeatable to a maximum of 10 cr hrs in any combination of decimal subdivisions. This course is graded S/U.
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196.20  Varsity Squads: Wrestling UGRD 2
Participation as a player on a varsity squad.
Prereq: Admission by tryout. Repeatable to a maximum of 10 cr hrs in any combination of
decimal subdivisions. This course is graded S/U.

196.21  Varsity Squads: Rowing UGRD 2
Participation as a player on a varsity squad.
Prereq: Admission by tryout. Repeatable to a maximum of 10 cr hrs in any combination of
decimal subdivisions. This course is graded S/U.

196.22  Varsity Squads: Diving UGRD 2
Participation as a player on a varsity squad.
Prereq: Admission by tryout. Repeatable to a maximum of 10 cr hrs in any combination of
decimal subdivisions. This course is graded S/U.

197  Competitive Club Sports UGRD 1
Participation as a member of a competitive club sport team.
Prereq: Prior experience on at least one competitive club sport team and top standing.
Repeatable to a maximum of 3 cr hrs. Preregistration with dept required. This course is graded S/U.

204  Sexuality and Health UGRD 3
The study of sexuality as an aspect of the healthy individual; the demythologizing of sexual
beliefs and behaviors; sexual behavior and attitudes in young adults.

205  Social Recreation UGRD 2
Age characteristics and developmental levels relative to social activities; techniques, rules,
strategy and social behaviors in a range of cultural activities, i.e., social games and pastimes.
SS Admis Cond course.

208  Orientation to Sport and Leisure Studies UGRD 3
A general introduction to sport and leisure studies. Examination of the current scene, curricular
opportunities, careers, and needed personal competencies. Two observations in various sport
and leisure settings.

209  Orientation to Exercise Science UGRD 1
A general introduction to exercise science focusing on instrumentation; measurement, and
training equipment.
Open only to students admitted to the Exercise Science program.

210  History of Sport, Physical Culture and the Body in Nineteenth Century America UGRD 5
Examines sport and sociology in 19th century America. Looks at influences of
modernity; economics, class, race, gender, ethnicity; religion, intellectual and scientific thought.
Au, Wi, Sp Ctrns. 5 1-hr cl. GEC historical survey course.

211  History of Sport, Physical Culture and the Body in Twentieth Century America UGRD 5
Examines sport and society in 20th century America. Looks at influences of
consumer society; commercialization; class, race, gender, ethnicity; media; international sport.
Au, Wi, Sp Ctrns. 5 1-hr cl. GEC historical survey course.

214  Introduction to Sexuality Studies UGRD 5
This course will provide an introduction to sexuality studies through an interdisciplinary
approach. To apply the knowledge learned, this course requires a fieldwork component.
2 2-hr hrs. Prereq: English 110 or 110.01 or 110.02 or 110.03. Not open to students with credit for
CompStd 214. Cross-listed in Comparative Studies.

221.01  Sports Officiating: Baseball UGRD 2
Study of playing rules, rule interpretation, techniques, and mechanics of officiating various
interscholastic and intercollege athletic sports.
Prereq: Satisfactory evidence of playing skill in the elected athletic sport.

221.02  Sports Officiating: Basketball UGRD 2
Study of playing rules, rule interpretation, techniques, and mechanics of officiating various
interscholastic and intercollege athletic sports.
Students completing the course are eligible for certification to officiate in Ohio schools.
Prereq: Satisfactory evidence of playing skill in the elected athletic sport.

221.04  Sports Officiating: Football UGRD 2
Study of playing rules, rule interpretation, techniques, and mechanics of officiating various
interscholastic and intercollege athletic sports.
Students completing the course are eligible for certification to officiate in Ohio schools.
Prereq: Satisfactory evidence of playing skill in the elected athletic sport.

221.12  Sports Officiating: Wrestling UGRD 2
Study of playing rules, rule interpretation, techniques, and mechanics of officiating various
interscholastic and intercollege athletic sports.
Students completing the course are eligible for certification to officiate in Ohio schools.
Prereq: Satisfactory evidence of playing skill in the elected athletic sport.

221.14  Sports Officiating: Volleyball UGRD 2
Study of playing rules, rule interpretation, techniques, and mechanics of officiating various
interscholastic and intercollege athletic sports.
Prereq: Satisfactory evidence of playing skill in the elected athletic sport.

221.15  Sports Officiating: Softball UGRD 2
Study of playing rules, rule interpretation, techniques, and mechanics of officiating various
interscholastic and intercollege athletic sports.
Prereq: Satisfactory evidence of playing skill in the elected athletic sport.

245  Sport and Recreation Leadership UGRD 3
Methods and materials for comprehensive programming with individuals and different groups in
a variety of sport and recreation settings.

250  How to Avoid Dying from Cancer Now and Later UGRD 2
Discussion of the latest findings on avoiding cancer through lifestyle choices and assessment of
one's family health history.

251  Introduction to the Special Education Profession UGRD 5
Overview of Special Education, including individuals identified as gifted, and those with
sensory, orthopedic, behavioral, and learning problems.
5 cl.

260  Sport in Contemporary America UGRD 3
A study of the contemporary sport scene in America; the issues, the controversies confronting the
athlete, the coach, the administrator, and the general public.
Not open to students with credit for EduPL 260.

262  Coaching the Young Athlete UGRD 3
Skills and knowledges essential to planning, coaching, and supervising competitive sports
programs which are consistent with the needs of children.

263  Special Issues Affecting Contemporary Student-Athletes UGRD 3
An exploration of current topics and problems concerning collegiate athletes and the decision-
making skills needed to facilitate college adjustment.

270.01  Seminar: Self-Career Development UGRD 3
Designed to provide opportunities for self-exploration and skill development; exploration of and
clarification of vocational and educational interests.
Repeatable hrs, including cr hrs in EduPL 270.04; with a maximum of 3 cr hrs in any decimal
subdivision. This course is graded S/U.

270.02  Seminar: Personal Growth to Increase Career Competencies UGRD 3
Designed to provide opportunities to assist in self-exploration of and clarification for more
effective development beyond the level of average performance.
Repeatable hrs, including cr hrs in EduPL 270.04; with a maximum of 3 cr hrs in any decimal
subdivision. This course is graded S/U.

270.03  Seminars: Study Skills Related to Career Goals UGRD 3
Designed to assist underachieving students with their efforts to ascertain and resolve the
causes of low academic productivity; attitudinal and behavioral skills emphasized.
Repeatable hrs, including cr hrs in EduPL 270.04; with a maximum of 3 cr hrs in any decimal
subdivision. This course is graded S/U.

270.04  Seminar: Career Development and Leadership Training in Higher Education UGRD 3
Designed to explore possible careers in higher education and to conduct leadership training in terms of
higher educational functions and organizations.
Repeatable hrs, including cr hrs in EduPL 270.04; with a maximum of 3 cr hrs in any decimal
subdivision. This course is graded S/U.

271  Seminar in Exploring Helping Relationships: Teaching/Learning UGRD 3
Focus on self development, decision making, world of work for students exploring careers
through placement in educational, and community agency settings. Repeatable to a maximum
with special written permission, when unusual circumstances warrant.
Repeatable to a maximum of 6 cr hrs. To be taken concurrently with field experience 289.01.

289.01  Field Experience: Intro Experience in a School System UGRD 2-5
Professional service in school or community settings.
Preregistration with school required. Repeatable to a maximum of 20 cr hrs. This course is
graded S/U.

289.02  Field Experience: Experience in a Community Agency UGRD 2-5
Professional service in school or community settings.
Preregistration with school required. Repeatable to a maximum of 20 cr hrs. This course is
graded S/U.

289.03  Field Experience: Sport and Leisure Studies I UGRD 2-3
Professional service in school or community settings.
Preregistration with school required. Open only to students admitted to a major in PAES or
permission of instructor. Repeatable to a maximum of 20 cr hrs.

289.04  Sport and Leisure Studies II UGRD 3
Professional service in school or community settings.
Preregistration with school required. Open only to students admitted to a major in PAES or
permission of instructor. Repeatable to a maximum of 20 cr hrs.

289.10  Field Experience: General Special Education UGRD 2-5
Professional service in school or community settings.
Preregistration with school required. Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>UGRD</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>293.20</td>
<td>Sport and Exercise Education</td>
<td>UGRD</td>
<td>1-4</td>
</tr>
<tr>
<td>293.21</td>
<td>Individual Studies: Sport and Exercise Humanities</td>
<td>UGRD</td>
<td>1-4</td>
</tr>
<tr>
<td>293.22</td>
<td>Individual Studies: Sport and Exercise Management</td>
<td>UGRD</td>
<td>1-4</td>
</tr>
<tr>
<td>300</td>
<td>Health Education for Elementary Teachers</td>
<td>UGRD</td>
<td>3</td>
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<tr>
<td>301</td>
<td>Field Sports</td>
<td>UGRD</td>
<td>3</td>
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<tr>
<td>302</td>
<td>Racquet Sports</td>
<td>UGRD</td>
<td>3</td>
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<tr>
<td>303</td>
<td>Individual Sports</td>
<td>UGRD</td>
<td>3</td>
</tr>
<tr>
<td>305</td>
<td>Court Games</td>
<td>UGRD</td>
<td>3</td>
</tr>
<tr>
<td>307</td>
<td>Adventure/Experiential-Based Activities</td>
<td>UGRD</td>
<td>3</td>
</tr>
<tr>
<td>311</td>
<td>Interpersonal and Coping Skills For College and</td>
<td>UGRD</td>
<td>3</td>
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<td></td>
<td>the Workplace</td>
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<tr>
<td>312</td>
<td>Issues in Alcohol/Drug Use and Abuse</td>
<td>UGRD</td>
<td>3</td>
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<tr>
<td>314</td>
<td>AIDS: What Every College Student Should Know</td>
<td>UGRD</td>
<td>3</td>
</tr>
<tr>
<td>315</td>
<td>Positive Transitions for Intercollegiate Student-</td>
<td>UGRD</td>
<td>2</td>
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<td></td>
<td>Athletes</td>
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<tr>
<td>360</td>
<td>Kinesiology</td>
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<tr>
<td>361</td>
<td>Kinesiology Laboratory</td>
<td>UGRD</td>
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<tr>
<td>380</td>
<td>Exercise Physiology and Sport Performance</td>
<td>UGRD</td>
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<tr>
<td>401</td>
<td>Fundamentals of Epidemiology and Biostatistics</td>
<td>UGRD</td>
<td>3</td>
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<tr>
<td>410</td>
<td>History of Leisure and Physical Activities</td>
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<td>3</td>
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<tr>
<td>411</td>
<td>College Sport</td>
<td>UGRD</td>
<td>3</td>
</tr>
<tr>
<td>414</td>
<td>Applied Physiology of Exercise I</td>
<td>UGRD</td>
<td>3</td>
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<tr>
<td>415</td>
<td>Applied Physiology of Exercise Laboratory</td>
<td>UGRD</td>
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<td>489.05</td>
<td>Advanced Field Experience: Interscholastic</td>
<td>UGRD</td>
<td>6-8</td>
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<td></td>
<td>Coaching</td>
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<td>489.09</td>
<td>Advanced Field Experience: Teaching in</td>
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<td>Physical Activity Settings</td>
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<td>490.09</td>
<td>Fitness Program Development and Evaluation</td>
<td>UGRD</td>
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<tr>
<td></td>
<td>Graded Exercise Testing</td>
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<tr>
<td>490.10</td>
<td>Fitness Program Development and Evaluation</td>
<td>UGRD</td>
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<tr>
<td></td>
<td>Body Composition Evaluation</td>
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<td>490.11</td>
<td>Fitness Program Development and Evaluation</td>
<td>UGRD</td>
<td>2</td>
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<tr>
<td></td>
<td>Muscular Strength and Endurance</td>
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<tr>
<td>490.12</td>
<td>Fitness Program Development and Evaluation</td>
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<td>Psychological Assessment</td>
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<td>490.13</td>
<td>Fitness Program Development and Evaluation</td>
<td>UGRD</td>
<td>2</td>
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<tr>
<td></td>
<td>Older Adult Exercise Prescription</td>
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<tr>
<td>500</td>
<td>Science of Physical Activity for Health Care</td>
<td>UGRD</td>
<td>3</td>
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<tr>
<td></td>
<td>Professionals</td>
<td></td>
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</tr>
</tbody>
</table>

**Course Descriptions:**

- **293.20 Sport and Exercise Education**: For individuals who wish to pursue special studies in work not normally offered in courses. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

- **293.21 Individual Studies: Sport and Exercise Humanities**: For individuals who wish to pursue special studies in work not normally offered in courses. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

- **293.22 Individual Studies: Sport and Exercise Management**: For individuals who wish to pursue special studies in work not normally offered in courses. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

- **300 Health Education for Elementary Teachers**: The teacher's responsibility for health of school child: screening, referral, vision and hearing, nutritional problems, instructional programs, emergency care, and teacher's health. Prereq: 103 and, admission to EDU.

- **301 Field Sports**: Acquisition of performance skills in a variety of field sports, including rules, traditions, and values of the sports and their roles in various sport cultures. Open only to students admitted to a major in PAES or permission of the instructor.

- **302 Racquet Sports**: Acquisition of performance skills in a variety of racquet sports, including rules, traditions, and values of the sports and their roles in various sport cultures. Open only to students admitted to a major in PAES or permission of the instructor.

- **303 Individual Sports**: Acquisition of performance skills in a variety of individual sports, including rules, traditions, and values of the sports and their roles in various sport cultures. Open only to students admitted to a major in PAES or permission of the instructor.

- **305 Court Games**: Acquisition of performance skills in a variety of court games, including rules, traditions, and values of the games and their role in various sport cultures. Open only to students admitted to a major in PAES or permission of the instructor.

- **307 Adventure/Experiential-Based Activities**: Acquisition of performance skills including philosophy, facilitation techniques, and safety of adventure/experiential-based activities and their roles in various sport cultures. Open only to students admitted to a major in PAES or permission of instructor.

- **311 Interpersonal and Coping Skills For College and the Workplace**: Student will learn models and skills necessary for effective functioning in college and the workplace. Au, Sp Qtr.

- **312 Issues in Alcohol/Drug Use and Abuse**: Provides an understanding of the dynamics of substance abuse.

- **314 AIDS: What Every College Student Should Know**: A review of the physiological, psychological, social, legal, and moral issues surrounding the disease AIDS with emphasis placed on responsible decision making about one's lifestyle.

- **315 Positive Transitions for Intercollegiate Student-Athletes**: Addresses transitional issues unique to intercollegiate student-athletes. Students will learn appropriate developmental "Life Skills" needed to facilitate their personal and career adjustment. Prereq: Jr standing or permission of instructor. This course is graded S/U.

- **360 Kinesiology**: A study of functional anatomy and biomechanics and their application to human movement.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>501</td>
<td>Science of Exercise for Health Care Professionals Laboratory</td>
<td>1</td>
<td>Exercise physiology-related laboratory assessment techniques. Au Qtr: 2-hr lab. Prereq: ECOB 232. Repeatable to a maximum of 2 cr hrs.</td>
</tr>
<tr>
<td>509</td>
<td>Sport and Leisure Service Delivery and Promotion</td>
<td>3</td>
<td>The purpose of this course is to acquaint students with issues related to the promotion of sport and leisure services. Open only to students admitted to a major in PAES or permission of instructor.</td>
</tr>
<tr>
<td>514</td>
<td>Applied Physiology of Exercise II</td>
<td>3</td>
<td>Continuation of 414. Prereq: 414; concur: 515.</td>
</tr>
<tr>
<td>515</td>
<td>Applied Physiology of Exercise Laboratory Experience II</td>
<td>1</td>
<td>Continuation of the laboratory experience of 415. Prereq: 414 and 415; concur: 514.</td>
</tr>
<tr>
<td>520</td>
<td>Content in Elementary Physical Education</td>
<td>6</td>
<td>Development and application of content and teaching strategies in elementary physical education. 2-3 hr cl. Prereq: 301, 302, 303, 307, 360, 380, 489.09, 521, 531, 542, and 601. Student must receive a B- or higher to be prepared for subsequent courses.</td>
</tr>
<tr>
<td>521</td>
<td>Sport Skill and Strategy Analysis I</td>
<td>3</td>
<td>Analysis and diagnosis of closed sport and movement skill performance. Open only to students admitted to a major in PAES or permission of instructor.</td>
</tr>
<tr>
<td>525</td>
<td>Promoting Behavior Change in Sport, Leisure and Exercise</td>
<td></td>
<td>Introduction to behavior change strategies, to include the acquisition, maintenance, and generalization of behavior change useful in sport and exercise settings, and leisure activities. Open only to students admitted to a major in PAES or permission of instructor.</td>
</tr>
<tr>
<td>531</td>
<td>Social Issues and Concerns in Sport, Leisure, and Exercise Behavior</td>
<td>5</td>
<td>Examination of social and ethical issues such as discrimination, drug use, and the significance of the sport experience to individuals and sub-groups in the United States. Prereq: Completion of first and second writing courses. Open only to students admitted to a major in PAES or permission of instructor. GE/CLAR course.</td>
</tr>
<tr>
<td>542</td>
<td>Lifespan Motor Development</td>
<td>5</td>
<td>Physical growth, development, and motor behavior across the lifespan. 3 cl and 2-3 hr clinical experiences. BCII and FIB background check required. TB test required.</td>
</tr>
<tr>
<td>544</td>
<td>Sport and Leisure Perspectives for Special Populations</td>
<td>5</td>
<td>Introduction to sport and leisure for persons with special needs across school, community, and clinical based programs. Open only to students admitted to a major in PAES or permission of the instructor.</td>
</tr>
<tr>
<td>545</td>
<td>Programming in Sport and Recreation</td>
<td>3</td>
<td>Examination of the development, organization, and implementation of programs and activities in sport, recreation, and leisure. Open only to students admitted to a major in PAES or permission of instructor.</td>
</tr>
<tr>
<td>575.02</td>
<td>Career and Technical Education Teacher</td>
<td>2</td>
<td>Development of basic cognitive and performance skills required to earn a two-year teaching license by new career and technical education teachers. Prereq: Current employment as a career and technical education teacher. Repeatable to a maximum of 24 cr hrs.</td>
</tr>
<tr>
<td>575.03</td>
<td>Career and Technical Education Teacher Licensure Clinics: Inservice I</td>
<td>2</td>
<td>Development of basic cognitive and performance skills required to earn a two-year teaching license by new career and technical education teachers. Prereq: Current employment as a career and technical education teacher. Prereq: 575.02. Repeatable to a maximum of 24 cr hrs.</td>
</tr>
<tr>
<td>575.04</td>
<td>Career and Technical Education Teacher Licensure Clinics: Inservice II</td>
<td>2</td>
<td>Development of basic cognitive and performance skills required to earn a two-year teaching license by new career and technical education teachers. Prereq: Current employment as a career and technical education teacher. Prereq: 575.03. Repeatable to a maximum of 24 cr hrs.</td>
</tr>
<tr>
<td>575.05</td>
<td>Career and Technical Education Teacher Licensure Clinics: Two Week Followup Program</td>
<td>4</td>
<td>The refinement of curriculum development leadership and human relations skills required by employed, two-year licensed career and technical education teachers. 8 hrs/day for 10 days. Prereq: Current employment as a career and technical education teacher. Prereq: 575.04. Repeatable to a maximum of 24 cr hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>575.06</td>
<td>Career and Technical Education Teaching: Inservice IV</td>
<td>1</td>
<td>The development and refinement of basic design and development skills required of a second year career and technical education teacher to earn a two-year teaching license. Prereq: Current employment as a career and technical education teacher.</td>
</tr>
<tr>
<td>575.07</td>
<td>Career and Technical Education Teaching: Inservice V</td>
<td>1</td>
<td>Development of basic cognitive and performance skills required to earn a two-year teaching license by new career and technical education teachers. Continuation of 575.06. Prereq: Current employment as a career and technical education teacher.</td>
</tr>
<tr>
<td>575.08</td>
<td>Career and Technical Education Teaching: Inservice VI</td>
<td>1</td>
<td>Development of basic cognitive and performance skills required to earn a two-year teaching license by new career and technical education teachers. Continuation of 575.07. Prereq: Current employment as a career and technical education teacher.</td>
</tr>
<tr>
<td>589.01</td>
<td>Internship: Exercise Science</td>
<td>6-15</td>
<td>Directed and supervised experience in a professional setting. Preregistration with the school required. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>589.02</td>
<td>Internship: Health Promotion</td>
<td>6-15</td>
<td>Directed and supervised experience in a professional setting. Preregistration with the school required. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>589.03</td>
<td>Internship: Sport and Leisure Studies</td>
<td>6-15</td>
<td>Directed and supervised experience in a professional setting. Prereq: Open only to students admitted to a major in PAES with senior standing who have completed 289.03 or permission of instructor. Preregistration with the school required. Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>601</td>
<td>Teaching Sport, Leisure, and Exercise</td>
<td>3</td>
<td>To introduce teaching and management skills associated with student learning, design of instructional materials and techniques for implementation, and strategies to teach diverse learners in various sport, leisure, and exercise settings. BCII and FIB background checks required. Open only to students admitted to a major in PAES or permission of the instructor. Taken concurrently with 489.09. Student must receive a B- or higher to be prepared for subsequent courses.</td>
</tr>
<tr>
<td>605</td>
<td>Health Counseling</td>
<td>3</td>
<td>To provide educators and counselors opportunity to develop skills and knowledge to advise students and clients confronted with personal health concerns. Prereq: 5 hrs of psych; admission to EDU.</td>
</tr>
<tr>
<td>607</td>
<td>Legal Aspects of Sport and Physical Activity</td>
<td>4</td>
<td>Development of a responsible and safe attitude toward sport programming; identification of procedures to reduce the probability of injuries/lawsuits resulting from sport and physical activity Prereq: Jr standing. Open only to students admitted to a PAES major, the coaching education minor, or permission of instructor.</td>
</tr>
<tr>
<td>610</td>
<td>Women's Sport History</td>
<td>4</td>
<td>Examines women's sporting experiences from primitive cultures to contemporary societies; investigates influence of class, economics, power relationships, education, and views of the body. * Not open to students with credit for EduPL 610.</td>
</tr>
<tr>
<td>611</td>
<td>History of Physical Education and Sports from Ancient Times to 19th-Century Europe</td>
<td>3</td>
<td>A history of physical education and sports which includes primitive societies, Greek and Roman civilizations, the medieval period, and European countries in the 18th and 19th centuries. Not open to students with credit for EduPL 622.</td>
</tr>
<tr>
<td>612</td>
<td>Alcohol and Drug Education</td>
<td>3</td>
<td>The study and development of techniques and programs to prevent or reduce psycho-social problems associated with drug misuse.</td>
</tr>
<tr>
<td>614</td>
<td>Sexuality and Sport</td>
<td>5</td>
<td>Course uses an interdisciplinary lens to examine how conceptions of sexuality shape and are shaped by US sport.</td>
</tr>
<tr>
<td>615</td>
<td>Sport and Social Values</td>
<td>3</td>
<td>Explores the role social values play in sport; examines (1) sport and civic virtue; (2) relationship between sports and fair play/social justice; (3) violence/abuses in sport.</td>
</tr>
<tr>
<td>620.01</td>
<td>Coaching: Baseball</td>
<td>3</td>
<td>Study in the theory, strategy, and mechanics of coaching various interscholastic; intercollegiate athletic sports. Prereq: Advanced skill level in the elected sport; jr standing and permission of instructor.</td>
</tr>
<tr>
<td>620.02</td>
<td>Coaching: Basketball</td>
<td>3</td>
<td>Study in the theory, strategy, and mechanics of coaching various interscholastic; intercollegiate athletic sports. Prereq: Advanced skill level in the elected sport; jr standing and permission of instructor.</td>
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<tr>
<td>Course Code</td>
<td>Course Title</td>
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<tr>
<td>620.04</td>
<td>Coaching: Football</td>
<td>UGRD 3</td>
<td>Study in the theory, strategy, and mechanics of coaching various interscholastic; intercollegiate athletic sports. Prereq: Advanced skill level in the elected sport, jr standing and permission of instructor.</td>
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<tr>
<td>620.08</td>
<td>Coaching: Soccer</td>
<td>UGRD 3</td>
<td>Study in the theory, strategy, and mechanics of coaching various interscholastic; intercollegiate athletic sports. Prereq: Advanced skill level in the elected sport, jr standing and permission of instructor.</td>
</tr>
<tr>
<td>620.12</td>
<td>Coaching: Wrestling</td>
<td>UGRD 2</td>
<td>Study in the theory, strategy, and mechanics of coaching various interscholastic; intercollegiate athletic sports. Prereq: Advanced skill level in the elected sport, jr standing and permission of instructor.</td>
</tr>
<tr>
<td>620.14</td>
<td>Coaching: Volleyball</td>
<td>UGRD 2</td>
<td>Study in the theory, strategy, and mechanics of coaching various interscholastic; intercollegiate athletic sports. Prereq: Advanced skill level in the elected sport, jr standing and permission of instructor.</td>
</tr>
<tr>
<td>622</td>
<td>Business Technology Education I</td>
<td>UGRD 3</td>
<td>The relationship of business technology to business education subjects is discussed; foundational understanding and skill/application development in business education subjects.</td>
</tr>
<tr>
<td>623</td>
<td>Business Technology Education II</td>
<td>UGRD 3</td>
<td>Advanced applications of business technology to business education subjects.</td>
</tr>
<tr>
<td>624</td>
<td>Foundations of Workforce Development and Education</td>
<td>UGRD 4</td>
<td>Study of an integrated approach to workforce development and education programs and issues.</td>
</tr>
<tr>
<td>625</td>
<td>History of Physical Education and Sports in the United States</td>
<td>UGRD 3</td>
<td>The development of physical education and sports in the United States from colonial times to the present and the factors which have affected their growth.</td>
</tr>
<tr>
<td>626.01</td>
<td>Sport and Popular Culture Overview</td>
<td>UGRD 3</td>
<td>A variety of themes present in selected popular cultural forms dealing with a variety of sports such as football, basketball, baseball, and track and field.</td>
</tr>
<tr>
<td>626.02</td>
<td>Sport and Popular Culture - Race and Gender</td>
<td>UGRD 3</td>
<td>A variety of themes present in selected popular cultural forms dealing with a variety of sports such as football, basketball, baseball, and track and field.</td>
</tr>
<tr>
<td>626.03</td>
<td>Sport and Popular Culture - Baseball</td>
<td>UGRD 3</td>
<td>Focus on baseball as it has appeared in film and literature of and about the early 1900’s to the present day.</td>
</tr>
<tr>
<td>628.01</td>
<td>Clinical Internship: Classroom Observations</td>
<td>UGRD 3-15</td>
<td>Observation of career and technical classroom instruction in field-based educational setting. 20 hrs minimum equal 1 cr hr. Prereq: EDP students with a CPRH of 2.50 or above, or grad students in good standing. Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>628.02</td>
<td>Clinical Internship: Experience in Business</td>
<td>UGRD 3-6</td>
<td>Practical work experience in a private sector setting to gain knowledge of an industry and to develop new skills and knowledge. 20 hrs minimum equal 1 cr hr. Prereq: EDP students with a CPRH of 2.50 or above, or grad students in good standing. Repeatable to a maximum of 9 cr hrs.</td>
</tr>
<tr>
<td>628.03</td>
<td>Clinical Internship: Teacher Aide</td>
<td>GRAD 4-8</td>
<td>Practical experience as a professor’s aide in a summer teacher licensure training clinic or workshop. 20 hrs minimum equal 1 cr hr. Prereq: EDP students with a CPRH of 2.50 or above, or grad students in good standing. Repeatable to a maximum of 8 cr hrs.</td>
</tr>
<tr>
<td>630</td>
<td>Problems in Intramural Sports</td>
<td>UGRD 2</td>
<td>A critical analysis of intramural sports programs; problems of policy and administration of programs on the elementary, secondary, and college levels will be studied.</td>
</tr>
<tr>
<td>631.02</td>
<td>Advanced Skill Techniques: Basketball</td>
<td>UGRD 2</td>
<td>Advanced techniques of performance and a specialized and intense study of appropriate technical literature. This course will assist students in acquiring advanced performance skills and strategies in basketball. Prereq: Advanced skill level, jr standing and permission of instructor.</td>
</tr>
<tr>
<td>631.04</td>
<td>Advanced Skill Techniques: Football</td>
<td>UGRD 2</td>
<td>Advanced techniques of performance and a specialized and intense study of appropriate technical literature. This course will assist students in acquiring advanced performance skills and strategies in flag touch football. Prereq: Advanced skill level, jr standing and permission of instructor.</td>
</tr>
<tr>
<td>631.05</td>
<td>Advanced Skill Techniques: Gymnastics</td>
<td>UGRD 2</td>
<td>Advanced techniques of performance and a specialized and intense study of appropriate technical literature. Prereq: Advanced skill level, jr standing and permission of instructor.</td>
</tr>
<tr>
<td>631.06</td>
<td>Advanced Skill Techniques: Golf</td>
<td>UGRD 2</td>
<td>Advanced techniques of performance and a specialized and intense study of appropriate technical literature. Prereq: Advanced skill level, jr standing and permission of instructor.</td>
</tr>
<tr>
<td>631.08</td>
<td>Advanced Skill Techniques: Soccer</td>
<td>UGRD 2</td>
<td>Advanced techniques of performance and a specialized and intense study of appropriate technical literature. This course will assist students in acquiring advanced performance skills and strategies in soccer. Prereq: Advanced skill level, jr standing and permission of instructor.</td>
</tr>
<tr>
<td>631.10</td>
<td>Advanced Skill Techniques: Tennis</td>
<td>UGRD 2</td>
<td>Advanced techniques of performance and a specialized and intense study of appropriate technical literature. Prereq: Advanced skill level, jr standing and permission of instructor.</td>
</tr>
<tr>
<td>631.14</td>
<td>Advanced Skill Techniques: Volleyball</td>
<td>UGRD 2</td>
<td>Advanced techniques of performance and a specialized and intense study of appropriate technical literature. Prereq: Advanced skill level, jr standing and permission of instructor.</td>
</tr>
<tr>
<td>631.15</td>
<td>Advanced Skill Techniques: Softball</td>
<td>UGRD 2</td>
<td>Advanced techniques of performance and a specialized and intense study of appropriate technical literature. Prereq: Advanced skill level, jr standing and permission of instructor.</td>
</tr>
<tr>
<td>631.20</td>
<td>Advanced Skill Techniques: Special Offerings</td>
<td>UGRD 2</td>
<td>Advanced techniques of performance and a specialized and intense study of appropriate technical literature. Prereq: Advanced skill level, jr standing and permission of instructor. Repeatable to a maximum of 10 cr hrs.</td>
</tr>
<tr>
<td>632</td>
<td>Software Applications for Business/Industry</td>
<td>UGRD 3</td>
<td>Business/Industry-oriented foundation to microcomputer applications frequently used by trainers and career and technical education teachers. 1.25 hr cr.</td>
</tr>
<tr>
<td>633</td>
<td>Instructional Strategies for Career Based Intervention Programs</td>
<td>UGRD 3</td>
<td>Preparation and delivery of lessons, placement, and follow-up of students on-the-job. Prereq: Edu major.</td>
</tr>
<tr>
<td>634</td>
<td>Health and Physical Education for the Young Child</td>
<td>UGRD 4</td>
<td>Methods and materials dealing with instruction and evaluation of health and physical education for the young child. This is a service course for the proposed Early Childhood Program in the School of Teaching and Learning, College of Education.</td>
</tr>
<tr>
<td>635</td>
<td>School Health Services</td>
<td>UGRD 3</td>
<td>Consideration of healthful school living and health services, including health appraisal, counseling, educational adjustments, communicable diseases, and emergency programs. Prereq: 200 or equiv. For majors and minors in health sciences and health education.</td>
</tr>
<tr>
<td>636</td>
<td>Teaching of Health</td>
<td>UGRD 3</td>
<td>Principles, methods, materials, and resources involved in teaching health; direct, correlated, and integrated curriculum patterns; individual teaching experience.</td>
</tr>
<tr>
<td>637</td>
<td>Health Agencies</td>
<td>UGRD 3</td>
<td>Health agencies: purposes, location, affiliations, sources of funding, staff responsibilities, volunteer opportunities, services, educational materials, and media, with emphasis on writing materials.</td>
</tr>
<tr>
<td>638</td>
<td>Coaching Effectiveness</td>
<td>UGRD 4</td>
<td>Introduction to the teaching/learning process with emphasis on pedagogical skills necessary for coaching effectiveness. Prereq: Majors in PAES, coaching education minor or permission of instructor.</td>
</tr>
<tr>
<td>644</td>
<td>Coordination of Cooperative Career and Technical Education Programs</td>
<td>UGRD 3</td>
<td>Designed to develop the knowledge, attitudes, and competencies to effectively operate a cooperative career-technical education program.</td>
</tr>
<tr>
<td>648</td>
<td>Adult Literacy Education</td>
<td>UGRD 3</td>
<td>Historical/social context of current adult basic education issues and practices related to participation, institutional processes, program planning, evaluation, and research needs.</td>
</tr>
<tr>
<td>649</td>
<td>Theory and Practice of Teaching Adult Learners</td>
<td>UGRD 3</td>
<td>Selection, integration, and evaluation of methods, techniques, and devices to facilitate the learning of adults. Au Qtr. 1-hr cr, 1 1.5-hr community teaching experience.</td>
</tr>
<tr>
<td>650</td>
<td>Introduction to Exceptional Children</td>
<td>UGRD 3</td>
<td>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. Not open to students with credit for Psych 570.</td>
</tr>
<tr>
<td>651</td>
<td>Health Program Planning</td>
<td>UGRD 3</td>
<td>Competency development in formulating and implementing health programs; includes understanding community organization and the health care system, administration, and sustaining programs.</td>
</tr>
</tbody>
</table>
Education: Physical Activity and Ed Services  

652 Health Promotion in the Workplace  
UGRD 3  
Theoretical and pragmatic aspects of conducting health promotion programs in the workplace; discussion of rationale and relative effectiveness of various health components.  
Prereq: Sr standing or above.

655 Class and Laboratory Organization and Management in Career and Technical Education  
UGRD 3  
Designed to help career and technical education teachers to plan, organize, and manage career and technical education classrooms and laboratories used in various educational settings.

657 Sport and Disability  
UGRD 3  
Overview of sport for individuals with disabilities with special emphasis given to physiological, psychological, and socio-cultural perspectives.  
Prereq: Acceptance into the Sport and Exercise Studies graduate program or undergrad major in PAES or coaching education minor or permission of instructor.

660.01 Laboratories in Exercise Physiology: Introductory  
UGRD 1  
Selected laboratory experiences to include cardiovascular and muscle function testing. To be taken concurrently with 685.  
Subdivisions are not repeatable.

660.02 Laboratories in Exercise Physiology: Intermediate  
GRAD 1  
Selected laboratory experiences to include cardiovascular and muscle function testing.  
Prereq: 660.01 or equiv. Subdivisions are not repeatable.

660.03 Laboratories in Exercise Physiology: Advanced  
GRAD 1  
Selected laboratory experiences to include cardiovascular and muscle function testing.  
Prereq: 660.02 or equiv. Subdivisions are not repeatable.

662 Determining Instructional Content of Technical- Skill Training Programs  
UGRD 3  
Systematic investigation of data collection and analysis procedures used to determine the content of technical skill jobs.

663 Organizing Technical-Skill Training Programs  
UGRD 3  
Investigation of processes used to prepare objectives, evaluate items and budgets, and select and sequence appropriate strategies.

665 Making Effective Technical-Skill Presentations  
UGRD 4  
Delivery strategies used to present technical and skill information to groups of learners.

667 Essentials of Career and Technical Education Curriculum and Instruction  
UGRD 3  
Study of literature on curriculum and instruction used to prepare future employees, upgrade current employees, and prepare for changes in technology.

668.01 Career and Technical Education Teacher Licensure Clinic: Clinic 1  
UGRD 6  
Development of basic cognitive and performance skills required to earn a two-year career and technical education teachers.  
5 6-hr cl for 3 weeks. Prereq: Employment as a career and technical education teacher. This course is graded SU/U.

668.02 Career and Technical Education Teacher Licensure Clinic: Clinic 2  
GRAD 2  
Supervised clinical work while teaching in a career and technical education program.  
Prereq: Employment as a career and technical education teacher. Continuation of 668.01.

668.03 Career and Technical Education Teacher Licensure Clinic: Clinic 3  
GRAD 2  
Continuation of 668.02.  
Prereq: Employment as a career and technical education teacher. Prereq: 668.02.

668.04 Career and Technical Education Teacher Licensure Clinic: Clinic 4  
GRAD 2  
Continuation of 668.03.  
Prereq: Employment as a career and technical education teacher. Prereq: 668.03.

668.05 Career and Technical Education Teacher Licensure Clinic: Clinic 5  
GRAD 4  
Refinement of curriculum development skills and the development of leadership and human relations skills required by employed, two-year licensed career and technical education teachers.  
$ 5 6-hr cl for two wks. Prereq: Employment as a career and technical education teacher.

668.06 Career and Technical Education Teacher Licensure Clinic: Clinic 6  
GRAD 1  
Development and refinement of basic curriculum design and development skills required of a two-year career and technical education teacher.  
Prereq: Employment as a career and technical education teacher.

669 Teaching Students with Disabilities in Inclusive Settings  
GRAD 3  
Emphasizes practical, low-cost, empirically supported, and classroom tested approaches to teach students with disabilities effectively in general education classrooms.  
Prereq: Permission of instructor.

672 Adult Learning in Society  
UGRD 3  
Prereq: 4th yr standing. Edu majors.

675 Measuring Student Outcomes in Career and Technical Education  
UGRD 3  
Provides career/technical education teachers and training/development professionals with information relative to testing and assessment of students/trainees and the education/training programs in which they are enrolled.

676 Programming for Severe Physical Impairments  
UGRD 3  
Background information and survey of programmatic considerations related to physical, motor, and fitness training of the severely handicapped.

677 The Parent/Professional Partnership  
GRAD 3  
Knowledge and skills necessary for educators to assist parents in facilitating the development, education, and socialization of children and youth and handicaps.  
Prereq: Permission of instructor. Open only to special education majors; others by permission of instructor.

678 Career Based Intervention Clinic  
UGRD 3  
The initial course for adding the Career Based Intervention Endorsement to an existing teaching license.  
Su Qtr. 5 6-hr cl (1 week). Open only to students pursuing a teaching endorsement in Career Based Intervention.

685 Adult Exercise Program - Implementation  
UGRD 3  
Introduction to adult exercise training and evaluation methods; emphasis on the implementation of programs for the normal healthy adult.  
Prereq: 380 or 414/415. To be taken concurrently with 660.01.

686 Exercise Training for Fitness and Cardiac Rehabilitation  
UGRD 3  
Continuation of 665; exercise testing for special populations; cardiac rehabilitation procedures; preventive exercise training programs.  
Prereq: 685.

689.01 Field Experience in Elementary Physical Education  
UGRD 3  
Observation, participation and teaching to small groups and classes in elementary physical education.  
Prereq: Admission into SLS undergraduate teacher education program or permission of instructor.  
Prereq: Cumulative GPA 2.75; 520; taken concurrently with 740.

689.02 Field Experience in Secondary Physical Education  
UGRD 3  
Observation, participation and teaching to small groups and classes in secondary physical education.  
Prereq: Admission into SLS undergraduate teacher education program or permission of instructor.  
Prereq: Cumulative GPA 2.75; 709 and 741.

690 Cultural Theories of Sport  
UGRD 3  
This course will focus on the cultural significance of sport, and examine theories of culture in terms of their implications for the study of sport.

692.10 Workshops: Special Education  
UGRD 1-8  
Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it.  
Prereq: Written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs.

692.20 Workshops: Sport and Exercise Education  
UGRD 1-8  
Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it.  
Prereq: Written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs.

692.21 Workshops: Sport and Exercise Humanities  
UGRD 1-8  
Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it.  
Prereq: Written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs.

692.22 Workshops: Sport and Exercise Management  
UGRD 1-8  
Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it.  
Prereq: Written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs.

692.23 Workshops: Sport and Exercise Science  
UGRD 1-8  
Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it.  
Prereq: Written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs.
693.40 Individual Studies: Workforce Development and Education UGRD 1-15
Workforce Development and Education.
Prereq: Permission of instructor. A total of not more than 30 cr hrs of any 693 will apply toward graduation for undergraduate students. For plan A, not more than 15 hrs of any 693 and/or 893 will apply toward the master's degree; for Plan B, not more than 20 cr hrs will apply. Not more than 30 cr hrs will apply toward the doctoral degree. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

693.63 Individual Studies: School Psychology UGRD 1-15
School Psychology.
Prereq: Permission of instructor. A total of not more than 30 cr hrs of any 693 will apply toward graduation for undergraduate students. For plan A, not more than 15 hrs of any 693 and/or 893 will apply toward the master's degree; for Plan B, not more than 20 cr hrs will apply. Not more than 30 cr hrs will apply toward the doctoral degree. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

694.10 Group Studies: Special Education UGRD 1-5
Group studies on special problems in education.
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs, including cr hrs in EduTL 694. Repeatable to a maximum of 20 cr hrs.

694.20 Group Studies: Sport and Exercise Education UGRD 1-5
Group studies on special problems in education.
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs, including cr hrs in EduTL 694.

694.21 Group Studies: Sport and Exercise Humanities UGRD 1-5
Group studies on special problems in education.
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs, including cr hrs in EduTL 694.

694.22 Group Studies: Sport and Exercise Management UGRD 1-5
Group studies on special problems in education.
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs, including cr hrs in EduTL 694.

694.23 Group Studies: Sport and Exercise Science UGRD 1-5
Group studies on special problems in education.
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs, including cr hrs in EduTL 694.

694.25 Group Studies: Rehabilitation Services UGRD 1-5
Group studies on special problems in education.
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs, including cr hrs in EduTL 694.

694.34 Group Studies: Counselor Education UGRD 1-5
Group studies on special problems in education.
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs, including cr hrs in EduTL 694.

694.40 Group Studies: Workforce Development and Education UGRD 1-5
Group studies on special problems in education.
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs, including cr hrs in EduTL 694.

694.63 Group Studies: School Psychology UGRD 1-5
Group studies on special problems in education.
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs, including cr hrs in EduTL 694.

695H Workforce Development Programs and Training UGRD 3
Strategies for Low Skilled Workers
Focuses on the programs and training strategies needed to serve workers with low skills, such as high school drop outs and workers in need of skills upgrading.

696 International Perspectives on Workforce Development and Education UGRD 3
Explores international workforce development strategies to strengthen human capital of developing and developed countries.

697 Foreign Study UGRD 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that experience.
Arr. Prereq: Written permission of department chairperson. Repeatable to a maximum of 12 cr hrs. This course is Progress (P) graded. Repeatable not more than 4 workshops. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

698.01 Study Tour: Domestic UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Repeatable for different titled study tours only.

698.02 Study Tour: Foreign UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Repeatable for different titled study tours only.
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699 Undergraduate Research in Physical Activity and Educational Services UGRD 0-15
Undergraduate research in areas of study related to the unit and the instructor's research agenda. 99RH (honors) may be available.
Pre req: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

700.01 Interprofessional Education: Seminar of Interprofessional Care GRAD 3
Treatment of the whole person through the analysis of the interrelated problems of actual cases
Pre req: Limited to students enrolled in allied medical professions, education, law, medicine, nursing, social work and theology. Cross-listed in EdUPL and EduTL.

700.02 Interprofessional Education: Changing Societal Values UGRD 3
Identification and clarification of values considerations as they relate to professional problems in dealing with consumers/clients/patients.
Pre req: Limited to students enrolled in allied medical professions, education, law, medicine, nursing, social work and theology. Cross-listed in EdUPL and EduTL.

700.03 Interprofessional Education: Seminar on Ethical Issues Common to the Helping Professions GRAD 3
Ethical issues of concern to the professions and arising out of advanced technology; euthanasia, enforced treatment, privacy and confidentiality, malpractice, and the social responsibility of the professions.
Pre req: Limited to students enrolled in allied medical professions, education, law, medicine, nursing, social work and theology. Cross-listed in EdUPL and EduTL.

700.04 Interprofessional Practicum in Clinical Settings UGRD 3-5
Interprofessional teamwork in clinical settings.
Pre req: Permission of instructor. Limited to students enrolled in allied medical professions, education, law, medicine, nursing, social work and theology. Cross-listed in EdUPL and EduTL. Repeatable to a maximum of 10 cr hrs.

700.05 Interprofessional Seminar in Policy Analysis UGRD 3
Explores interprofessionally to history, formation, and implementation of public policy issues of significance to seven helping professions.
Pre req: Permission of instructor. Limited to students enrolled in allied medical professions, education, law, medicine, nursing, social work and theology. Cross-listed in EdUPL and EduTL.

700.06 Interprofessional Education: Care of Chemically Dependent Families UGRD 3
Interprofessionally explores issues in the identification and treatment of chemical dependency within the family context.
Pre req: Limited to students enrolled in allied medical professions, education, law, medicine, nursing, social work and theology. Cross-listed in EdUPL and EduTL.

700.07 Interprofessional Education: Interprofessional Approaches to Child Abuse and Neglect GRAD 3
Interprofessionally explores issues in the identification, treatment, and prevention of child abuse and neglect.
Pre req: Permission of instructor. Limited to students enrolled in allied medical professions, education, law, medicine, nursing, social work and theology. Limited to 12 students each in allied medicine, education, law, medicine, nursing, psychology, social work, and theology through Columbus Cluster. Cross-listed in EdUPL and EduTL.

701 Fundamentals of Teaching Adults Online GRAD 3
The course focuses on developing, delivering, and facilitating online learning experiences to adults in formal and non-formal learning environments.
Su Qtr: Distance Learning Course (Web taught).

702 Health After 60 UGRD 3
Designed to develop an awareness of the health concerns of the elderly and a willingness to help improve their quality of life.
Pre req: 4th yr standing in a health science or behavioral science area or permission of instructor.

703 Health Behavior Change in Adulthood and Later Years UGRD 3
Review of research on changing health behavior; includes smoking cessation, weight control, hypertension, stress, health promotion programs, and changing health behavior after 65.

704 Evaluation in Health Education UGRD 3
Identification and application of various techniques for evaluating learning processes and programs in health education.

705 Introduction to Gifted Education GRAD 3
An examination of historical trends, educational, psychological, and philosophical factors in the education of gifted persons.

708 Analysis of Teaching and Learning Processes GRAD 3
Techniques for defining, observing, and assessing teaching/learning processes with emphasis on verifying relationships between teaching strategies and student outcomes.
Pre req: Admission to M.Ed. program. Not open to students with credit for 871.

709 Curriculum and Instructional Design UGRD 3
Systematic planning and design of the curriculum and its implementation using principles of instructional design and evaluation.
Pre req: Admission to SLS teacher certification program strand or permission of instructor; taken concurrently with 689.02 and 741. Student must receive a B- or higher to be prepared for subsequent courses.

711 American Sport History UGRD 5
Examines intersection of sport and society in America. Investigates influence of city, modernization, race, class, gender, consumer society, media on sporting structures, attitudes, and meaning.
2 2-hr cl, 1 hr arr. Not open to students with credit for EduPL 704.

713 Foundations of Physical Activity Behavior UGRD 3
Introduction to physical activity behavior; population distributions and relationship to health; E-mail; internet access.

714 Responses and Adaptations to Exercise UGRD 5
Study of responses and adaptations to the stress of exercise in humans and animals. Pre req: 10 cr hrs Physiol or 10 cr hrs Chem or 10 cr hrs Biology, or equiv.

716 Assistive Technologies for Individuals with Disabilities UGRD 3
The purpose of this course is to prepare students to assist persons with disabilities in the selection and use of adaptive and assistive technology.
Pre req: Admission to the special education teacher preparation program or graduate student status. Not open to students with credit for AlliMed 802. Cross-listed with AlliMed 802.

717.01 Nisonger Center Course: An Interdisciplinary Approach to Families of Handicapped Children UGRD 3
Focus on interdisciplinary topics in mental retardation and developmental disabilities. Qualitative and quantitative approaches for resource and problem identification with families of handicapped children, effective parenting skills, strategies to follow at-risk families, and family intervention models.
Pre req: Permission of instructor. Not open to students with credit in 717.01 in any cross-listed areas. Cross-listed in Allied Medicine, Human Development and Family Science, Human Nutrition, Nursing, Psychology, Social Work, and Speech and Hearing Science.

717.02 Nisonger Center Course: The Interdisciplinary Team: Clinical and Administrative Issues UGRD 3
Focus on interdisciplinary topics in mental retardation and developmental disabilities. Investigation and critical examination of function of interdisciplinary clinical and administrative teams in mental retardation and developmental disabilities.
Pre req: Permission of instructor. Not open to students with credit in 717.02 in any cross-listed areas. Cross-listed in Allied Medicine, Human Development and Family Science, Human Nutrition, Nursing, Psychology, Social Work, and Speech and Hearing Science.

717.03 Nisonger Center Course: Developmental Disabilities UGRD 3
Focus on interdisciplinary topics in mental retardation and developmental disabilities. Focus on the most pertinent scientific and societal issues of developmental disabilities.
Pre req: Permission of instructor. Not open to students with credit for 717.03 in any cross-listed areas. Cross-listed in Allied Medicine, Human Development and Family Science, Human Nutrition, Nursing, Psychology, Social Work, and Speech and Hearing Science.

719 Early Intervention Interdisciplinary Team Dynamics GRAD 3
Interdisciplinary team-taught course with a focus on early intervention/early education services for children birth to three and their families.

720 Measurement of Physical Activity UGRD 3
Examination of the theory and application of techniques used to assess physical activity behavior and its mediators.
1 2.5-hr cl. Pre req: 713. Email; internet access.

721 Classroom Management for Children with Special Needs UGRD 3
Principles and application of classroom management techniques appropriate for exceptional children and youth. Methods for positive behavior supports with an emphasis on developing class-wide management systems.
Pre req: Admission to the Special Education Teacher Preparation Program or graduate student status. 742. To be taken concurrently with 289.10.

722 Communication Skills for Children with Moderate/Intensive Needs UGRD 3
Examines current principles in the development of alternative communication programs for individuals with moderate/intensive disabilities who do not spontaneously use speech.
Pre req: Admission to the Special Education Teacher Preparation Program or graduate student status.

723 Physical Education for Young Children GRAD 2
Methods and materials of school physical education dealing with the selection, instruction, and evaluation of activities for young children.
Pre req: Admission into the Early-middle Childhood Education M.Ed. program.
510 Education: Physical Activity and Ed Services

724 Elementary School Health Education GRAD 3
Health appraisal of the school aged child and teaching methods dealing with instruction and evaluation of Health Education.
Prereq: Grad standing or permission of instructor. Acceptance to the Early-middle Childhood Education M. Ed. program.

726 Changing Physical Activity Behavior GRAD 3
Introduction to the theoretical foundations, research base, and intervention strategies for enhancing exercise participation in fitness and recreational settings.

727.10 Special Topics: Special Education GRAD 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. This course is graded S/U.

727.20 Special Topics: Sport and Exercise Education GRAD 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. This course is graded S/U.

727.21 Special Topics: Sport and Exercise Humanities GRAD 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. This course is graded S/U.

727.22 Special Topics: Sport and Exercise Management GRAD 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. This course is graded S/U.

727.23 Special Topics: Sport and Exercise Science GRAD 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. This course is graded S/U.

727.25 Special Topics: Rehabilitation Services GRAD 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. This course is graded S/U.

727.30 Special Topics: Wellness and Human Services GRAD 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. This course is graded S/U.

727.34 Special Topics: Counselor Education GRAD 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. This course is graded S/U.

727.40 Special Topics: Workforce Development and Education GRAD 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. This course is graded S/U.

727.63 Special Topics: School Psychology GRAD 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. This course is graded S/U.

728 Cultural Diversity: Developing a Multicultural Perspective GRAD 3
Students will have the opportunity to develop a multicultural awareness as they explore the impact of an increasingly diverse society in the United States. Prereq: Grad level status and permission of instructor.

729 Urban Issues in Education GRAD 3
Focus is on gaining a better understanding of the dynamics of urban schools and the relationship between minority status, poverty, academic achievement and resiliency.

730 Philosophical Perspectives of Sport and Leisure GRAD 5
Examination of philosophical sport and leisure scholarship with emphasis on contemporary theoretical literature and issues. Not open to students with credit for EduPL 730.

732 Current Topics in Sport and Exercise Management GRAD 2
Examines the areas of specialization within sport management and current issues relative to the field. Prereq: Permission of instructor or enrollment in sport and exercise sciences.

733 Financing Sport Operations GRAD 3
This course examines the application of basic concepts of public and private sector financing to collegiate and professional sport organizations. Prereq: Sport Management major or permission of instructor.

734 Methods of Instruction I for Students with Mild/Moderate Disabilities UGRD 3
Designed to teach pre-service teachers effective instructional strategies for elementary learners with mild disabilities. Prereq: Admission to the Special Education Teacher Preparation Program or graduate student status. To be taken concurrently with 289.10.

735 Methods of Instruction II for Students with Mild/Moderate Disabilities: Middle and Upper Grades UGRD 3
Designed to provide advanced training in methods for middle and secondary students with mild disabilities. Prereq: Admission to the Special Education Teacher Preparation Program or graduate student status; 734. To be taken concurrently with 289.10.

736 Methods of Instruction I for Students with Moderate/Intensive Disabilities: Planning for and Develop UGRD 3
Provides an introduction to designing and developing instructional programs for individuals with moderate/intensive disabilities. Prereq: Admission to the Special Education Teacher Preparation Program or graduate student status; 722; 743. To be taken concurrently with 289.10.

737 Methods of Instruction II for Students with Moderate/Intensive Disabilities: Implementing and Evalua UGRD 3
Provides students with an introduction to implementing and evaluating instructional programs for students with moderate to intensive disabilities. Prereq: Admission to the Special Education Teacher Preparation Program or graduate student status; 736. To be taken concurrently with 289.10.

738 Reading Instruction for Children with Disabilities and Severe Reading Deficits UGRD 5
Prepares special educators to use empirically validated reading pedagogy when teaching children with disabilities who have severe reading problems. Au, Wk Qtrs. 2.5-hr cl. 1.5-hr lab. Prereq; 742 and 650, 251 or equiv. Open only to special education majors. Repeatable to a maximum of 10 cr hrs. Format of the course is an on-campus lecture with an off-campus tutoring experience. Course will count toward special education licensure.

740 Teaching Physical Education in the Elementary School UGRD 3
Effective strategies for teaching physical education in the elementary school. 3 hrs daily for first 10 days of the qr. Prereq; 530; taken concurrently with 689.01. Student must receive a B- or higher to be prepared for subsequent courses.

741 Teaching Physical Education in Middle and High School UGRD 3
Teaching and curricular issues as they relate to middle and high school physical education programming. 3 hrs daily for first 10 days of the qtr. Prereq; 740; taken concurrently with 689.02 and 709. Student must receive a B- or higher to be prepared for subsequent courses.

742 Applied Behavior Analysis for Teachers UGRD 3
Study of principles of behavior for the development and maintenance of academic and social behaviors.

743 Educational Assessment of Exceptional Learners UGRD 3
Examination of issues and procedures associated with planning, conducting, scoring, and interpreting educational assessments. Prereq; 251 and 650 or equiv. Open only to special education majors; others by permission of instructor.

744 Sexuality and Education GRAD 4
Explores rights and duties of educators with respect to sexuality and considers how to make classrooms inclusive to educational experience for all students. Prereq: Grad standing. Not open to students with credit for EduTL 744. Cross-listed in EduTL.

746 Behavioral Consultation in School, Clinic, and Home Settings GRAD 3
Focuses on providing behavioral consultation to regular and special education teachers, administrators, students, and parents; analyses the development, implementation, and evaluation of consultation programs in school, clinics, and home settings. Open only to special education majors; others by permission of instructor.
747  Transition from School to Adult Life  \textit{UGRD 3}
Programming to promote successful transition of students with special needs from school to adult life. Encompasses employment, post-secondary education, residential, and community supports.
Prereq: Admission to the special education teacher preparation program or graduate student status.

750  Teaching Social Behavior to Students with Disabilities  \textit{UGRD 3}
Nature of social skills, importance of social skills planning in the curriculum, and the special social-skill needs of learners with disabilities.
Prereq: Permission of instructor. Open only to special education majors; others by permission of instructor.

754  Physical Growth and Motor Development  \textit{GRAD 3}
Study of growth in phylogenetic and ontogenetic sequence; motor development; critical analysis of research in motor ability, fitness, and athletics, as related to growth and development.
Prereq: Grad standing, or permission of instructor.

755  Inclusion in Sport and Exercise Education  \textit{GRAD 3}
Designed to familiarize teachers and other professionals with inclusion/integration in Sport and Exercise Education.
Prereq: 544 or equiv. Required for grad students in Sport and Exercise Education.

757  Aspects of Human Resource Development  \textit{UGRD 3}
Frameworks and practices related to human resource development in workforce education.

760  Educational Assessment in Early Childhood  \textit{UGRD 3}
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 the special education teacher preparation program or graduate student status. Open only to special education majors, others by permission of instructor. Assessments to be completed in early intervention and early childhood settings.

761  Educational Intervention for Young Children with Disabilities  \textit{UGRD 3}
Study of instructional programming for language, communication, sensorimotor, cognitive, and social development in early childhood environments.
Prereq: Admission to the special education teacher preparation program or graduate student status.

762  Motor and Physical Assessment of Children with Handicapping Conditions  \textit{GRAD 3}
Survey of validity data on the most used assessment tools and practices in collecting motor and physical performance data on children with handicapping conditions.
Prereq: 650 and 662.

763  Inclusion in Early Childhood Special Education  \textit{UGRD 3}
Study of the diverse factors influencing the inclusion of young children with disabilities in community settings.
Prereq: Admission to the special education teacher preparation program or graduate student status.

765  Grant Writing  \textit{GRAD 3}
Analysis of how applications for external funding in the School of PAES are developed and submitted.
Prereq: Permission of instructor.

767  Assessment in Counseling: Instrumentation  \textit{UGRD 3}
An introduction to the concepts and techniques in the appraisal of the individual with an emphasis on basic statistical concepts, and an overview of the instrumentation; designed for counselors who will be working in school, mental health, and rehabilitation settings.
Prereq: 773 or permission of instructor.

768  Assessment in Counseling: Interpretation  \textit{UGRD 3}
A continuation of 767 involving a more advanced study of concepts and techniques in the appraisal of the individual with an emphasis on the development of case studies, and interpretation of standardized and non-standardized assessment instruments; designed for counselors who will be working in school, mental health, and rehabilitation settings.
Prereq: 767.

769  Delivering Effective Services to Enhance the Inclusion of Students with Special Needs  \textit{UGRD 3}
Designed to prepare special education teachers to work with administrators, general education teachers, parents and paraprofessionals to deliver instruction in inclusive settings.
Prereq: Admission to the Special Education Teacher Preparation Program or graduate student status.

770  Introduction to Helping Skills: Theory and Practice  \textit{GRAD 3}
Examination of theories of counseling and helping and application to a variety of professional settings: examination of techniques and professional issues in counseling and other helping professions.

771  Individual Helping Skills Development  \textit{GRAD 3}
Laboratory for the development of helping skills for beginning and advanced students who are not in the clinical counseling program.

772  Exploring Careers in Counseling  \textit{GRAD 3}
Introduction to careers in counseling, settings in which it is practiced and professional issues as well as introduction to techniques.

773  Counseling Services and Techniques  \textit{UGRD 3}
Counseling services and techniques used to help individuals live and work effectively in a complex society.

774  Introduction to Counseling  \textit{UGRD 3}
Introduction to counseling theories with emphasis on theoretical bases and applications in selected school and community settings.
Prereq: 773.

775  Group Counseling  \textit{UGRD 3}
An overview of theories, issues, and trends of group counseling.
Prereq: Permission of instructor.

776  Counseling Children  \textit{UGRD 3}
An overview of child behavior and concerns with emphasis on counseling theory as applied to children and general treatment modalities.

779  Educational and Career Counseling  \textit{UGRD 5}
Theories, instruments, and resources for educational and career counseling of individuals and groups.
Prereq: 768 and written permission of instructor.

780  Seminar for Student Teaching  \textit{UGRD 3}
Seminar designed to connect students’ school-based internship experiences with pedagogical content knowledge through discussions and reflections about teaching physical education.
Prereq: Cumulative GPA 2.75; 741; taken concurrently with 786 and 787. Designed to facilitate growth as a prospective teacher, facilitate understanding of roles and responsibilities of teachers, and provide opportunities to discuss and reflect on pedagogy in schools.

784  Student Teaching in Technical Education and Training  \textit{UGRD 12}
Provides career/technical education teachers with a culminating field experience with the guidance of a cooperating teacher and a university supervisor in a school setting.
Prereq: 528, 655, 667.

785  Management in Leisure Programs  \textit{UGRD 3}
An analysis of contemporary approaches to management in the leisure field.
Prereq: 245, 545; Edu PAES major or permission of instructor. Jr standing or above.

786  Internship in Physical Education at the Elementary School  \textit{UGRD 8}
Observation, participation, and responsible teaching in an elementary school setting.
Prereq: Cumulative GPA 2.75; 741; taken concurrently with 780 and 787.

787  Internship in Secondary Physical Education  \textit{UGRD 7}
Observation, analysis, and teaching in a public secondary school, dual and three-way conferences with supervisor and cooperating teacher.
Prereq: Cumulative GPA 2.75; 741; taken concurrently with 780 and 786.

788  Practicum for School Nurses  \textit{UGRD 3-15}
A supervised opportunity is provided to practice the school nursing specialty in a public school health services setting.
1 conf per wk; hrs of field exp varies with cr hrs. Prereq: Written permission of area advisor. Limited to student nurses and RN’s with courses required for school nurse certification. Repeatable to a maximum of 15 cr hrs. This course is graded SU.

789  Practicum in Health Education  \textit{UGRD 2-15}
Opportunity is provided for putting educational research and theory into practice by teaching, administration, and agency experience under supervision in university, school, and agency situations.
1 cr conf and arr field exp. Prereq: Written permission of instructor and departmental advisor based upon submitted evidence of appropriate knowledge and skill in the selected course.
Repeatable to a maximum of 15 cr hrs. This course is graded SU.

790  Principles and Practices of Rehabilitation Counseling  \textit{UGRD 3}
Orientation to the vocational rehabilitation process; a survey of principles, history, philosophies, legislation, and techniques.
Prereq: Permission of instructor.

791  Orientation to Disabling Conditions  \textit{UGRD 3}
An overview of major disabling conditions focusing on: etiology, treatment, and prognosis; physical restoration; the vocational and functional limitations created by the conditions.
Prereq: Permission of instructor.
152 Education: Physical Activity and Ed Services

792 Job Placement and Job Development for Persons with Disabilities
An analysis of the theories and techniques involved in vocational counseling, job restructuring, and job development for the disabled worker; an introduction to models of interagency linkage and cooperation.
Prereq: 790 or permission of instructor

795 Socio-Cultural Issues in Physical Education
Designed for students to develop a multicultural perspective in understanding the teaching-learning process; especially in sport and physical activity classes.
Prereq: 520. Recommended for all new GTAs in Sport and Exercise Sciences.

796 Designing Accessible Internet Content for Persons with Disabilities
Teaches the design of World Wide Web content that is accessible to persons with disabilities and complies with applicable accessibility standards.
General computer knowledge required and some knowledge of HTML is highly desirable.

798.11 Supervised Teaching in Special Education: Mild Moderate Intervention Specialist
Student teaching for qualified students in the area of special education.
Arr. Prereq: Written permission of instructor. This course is graded S/U.

798.12 Supervised Teaching in Special Education: Moderate Intensive Intervention Specialist
Student teaching for qualified students in the area of special education.
Arr. Prereq: Written permission of instructor. This course is graded S/U.

800.01 Counseling: Practica in Basic Helping Steps: Individual Counseling
Provides the experiential component of 774: Introduction to Counseling and 775: Group Process.
Intensive training in basic interviewing and counseling skills with a focus on self-assessment, and on increasing one's understanding of the complexities of interpersonal processes.

800.02 Counseling: Practica in Basic Helping Steps: Group Counseling
Provides the experiential component of 774: Introduction to Counseling and 775: Group Process.
An opportunity to experience the group process from a member's perspective, and to observe the role and function of a group facilitator.

801.01 Multicultural Issues in Counseling
An exploration of multicultural concerns related to the knowledge, beliefs, attitudes, and skills of counselors.
Prereq: 774 or permission of instructor.

801.02 Multicultural Research in Counseling
An examination of multicultural research design and methodology, and the impact these findings have on counseling.
Prereq: EduPL 785 and/or EduPL 786 or equivs and 801.01 or equiv.

802.01 Introduction to Exercise Physiology
Introduction to the field of exercise physiology with emphasis on energy liberation factors affecting performance, health, and fitness and physical training.
* Prereq: PhysioCB 602 or equiv.

802.02 Exercise Physiology: Metabolism, Temperature, Water, and Electrolyte Balances
Continuation of 802.01; discussion of metabolism, temperature, water, and electrolyte balances during exercise and of the effects of physical training.
Prereq: 802.01 and permission of instructor.

802.03 Exercise Physiology: Cardio-respiratory System, Physical Training, and Muscular Strength Training
Continuation of 802.02; discussion of cardio-respiratory system during exercise and effects of physical training.
* Prereq: 802.02 and permission of instructor.

802.04 Muscle Structure and Function: Overload and Disuse
Muscle structure and function as related to normal physiology, overload, disuse, and exercise.
* Prereq: 802.01; PhysioCB 602 or permission of instructor. Limited to 10 students.

803 Improvement of Instruction in Basic Business Subjects
A study of objectives, methods, materials, and methods of evaluation for courses such as general business, consumer education, and business law.

805 Teaching the Gifted: Instructional and Curriculum Adaptations
Information and skills for modifying curriculum for gifted presented in a workshop format.
Prereq: 705. Open only to special education majors; others by permission of instructor.

806 Sport Management and Administration
The various aspects of athletic, intramural, and recreation administration.
Prereq: At least 2 qtrs in sports administration program or psyh ed PhD candidate with minor area of athletic administration.

807 Legal Issues Affecting Sport
A study of legal issues affecting the delivery of sport services; focus on liability in sport activities.

808 Effective Management of Sport Delivery Systems
Application of contemporary management techniques used in the design and operation of sport delivery systems.
Prereq: 3 hrs of management sci, 806, or permission of instructor.

809 Sport Marketing
Examination and utilization of basic marketing principles in the areas of sport (collegiate and professional) recreation.
Prereq: BusMgt 650.

811 Occupational Analysis
Development and utilization of procedures used in analyzing a technical occupation for teaching content.
3 cl arr field experience.

817 Developing Instruction for Business and Industry
The systematic development of instructional programs for business and industry; role of the instructional developer in business and industry will also be examined.
Prereq: permission of instructor.

818 Designing Individualized Training Systems
The design of individualized training and performance systems for business and industry.

824 Underachieving Gifted Students
Focuses on characteristics and needs of gifted students who underachieve.
Credit counts toward Gifted Education licensure and MA.

825 Principles and Programming for Persons Who are Severely or Multiply Disabled
Includes transdisciplinary focus, community-based curriculum, integration with nondisabled peers, and nonverbal communication.
Prereq: A course in educational programming for children with low-incidence disabilities, and a course in language development and permission of instructor. Open only to special education majors; others by permission of instructor.

827 Structured Learning in the Work Setting
Examines and applies theories and practices related to structured learning in the work setting; will be an elective in the Workforce Development and Education section.

828 Administrative Practices in Career and Technical Education
A study of the concepts of career and technical education program administration, including management skills, policy development, staff management, finance, and program evaluation.
Open to students with credit for AgEd 811 or 821. Cross-listed in AgEd 821.

829 Advanced Educational Procedures for Students with Mild/Moderate Disabilities
Advanced study of individualized methods of instruction for students with mild/moderate disabilities; emphasis on assessment and design of appropriate instructional programs. To be taken concurrently with 3 hrs of 884.10. Open only to special education majors; others by permission of instructor.

830 Strategies for Effective Individual Instruction
Advanced study of precision teaching as a methodology for the systematic evaluation of learning and use in all instructional tactics and curricula.
Prereq: Permission of instructor. Open only to special education majors; others by permission of instructor.

831 Strategies for Effective Group Instruction
Study of theory, research, and literature on strategies and tactics of group instruction.
Prereq: 742. Open only to special education majors; others by permission of instructor.

832 Planning and Implementing Instruction for Generalized Outcomes
Guiding principles, general strategies, and specific tactics for designing instruction that promotes the generality of newly learned skills over time, settings, and response classes.
Prereq: 831. Open only to special education majors; others by permission of instructor.

833 Advanced Studies in the Education and Management of Students with Severe Behavior Disorders
Study of most recent research and literature on the education, management, and programming of students with severe behavior disorders.
Prereq: Permission of instructor. Open only to special education majors; others by permission of instructor.

835 Problems in Interscholastic and Intercollegiate (duplicate) Athletics
The relation of athletics to education; problems of athletic organization; eligibility; finance, current trends, and developments in management and purpose; public relations.
836 Structures and Processes of Sport Organizations/Associations  
Examines the organizational structures and processes of amateur, intercollegiate, and professional sport organizations/associations.

837 Event and Facility Management for Sport Managers  
Examines the principles and practices of planning and managing sport events and facilities.

839 Professional Sport in 20th-Century America  
Examination of the development of professional sport; its economic structure and relationship to mass media; the nature and problems of professional athletes. 
Not open to students with credit for EduP 819.

840 Instructional Design for Teacher Educators in Physical Education  
Classification and analysis of learner outcomes in activity settings; emphasis on empirical methods for analyzing outcomes and alternatives for achieving outcomes in teacher education programs in physical education.

842 The Business of College Sports  
Course provides business analysis of intercollegiate athletics, including an in depth look at OSU athletic program; develop understanding or college sports administration, educational, business missions. 
Au Qtr. Prereq; Graduating standing and Sport Management major or permission of instructor. 
Cross-listed in BusMHR 870.

844 Vocational Evaluation and Development  
A study of vocational evaluation, development, and work adjustment materials and practices utilized in educational and rehabilitation settings. 
Prereq; 790 or permission of instructor.

848 Management and Administration of Programs for Exceptional Children  
A review of technology, trends, and issues basic to the management and operation of a special education program with the intention of preparing leadership personnel. 
Prereq; 650 and grad standing in special education; or written permission of instructor.

850 The Role of Sports in Society  
Significance of sport to individuals and groups in society. 
Not open to students with credit for EduP 855.

851 Motor Learning  
Critical consideration of research and theory in the acquisition of skill; special attention is given to major trends in the field. 
Prereq; Psych 600, or permission of instructor.

852 Sport Ethics  
Examination of ethical issues central to contemporary sport that address how we ought to treat human beings and other sentient beings in sport settings.

855 Contemporary Issues in Recreational Sports Administration  
A study of current issues, management techniques, and programming concepts associated with the administration of campus recreation programs. 
Prereq; 630 or equiv.

856 Roles and Functions of School Psychologists  
Provides an overview of the legal, ethical, and current issues in school psychology, as well as the history of the profession.

857 Assessment of Cognitive Ability I  
Designed to teach students about various methods for assessing cognitive ability.

859 Assessment of Cognitive Ability II  
An advanced course in the assessment of cognitive functioning. Advanced methods of assessment are taught and applied. 
Prereq; 857.

859 Assessment of Academic Achievement in the Schools  
Designed to teach students about various methods for assessing academic achievement in the schools.

860 Linking Assessment to Intervention  
Students will gain skills in assessing academic skills, targeting interventions, and conducting continuous progress-monitoring.

861 Focus on Behavior Analysis in Education  
Theory and practice of applied behavior analysis as it applies to educational issues. 
Prereq; MA or PhD; permission of instructor. Open only to special education majors; others by permission of instructor.

862 Rehabilitation Case Management  
An in-depth analysis of the vocational rehabilitation topics of case management, agency functioning, and the adaptation of counseling models and techniques for use with persons with disabilities. 
Prereq; 774 and 790.

863 Teaching Health and Fitness Courses at the College Level  
Covers teaching methods, learning theories, course development and student evaluations in sport, fitness, and health courses. 
Sp Qtr. Required for new teaching assistants in the sports, fitness, and health program.

864 Reactions and Adjustment to Disability  
A study of individual reactions to various disabling conditions, the adjustment process, cultural norms and expectations, and responses to the rehabilitation process.

865 Naturalistic Inquiry in Physical Education  
Consideration of design and methods of inquiry for naturalistic field studies in physical education, sport, play, health, and dance; review of research results. 
Prereq; A grad course in research methods.

867 Biochemical Methods for the Assessment of Human Performance  
Development of laboratory procedures used to evaluate physiological responses and adaptations of blood and muscle to exercise.

868 Research on Teaching in Physical Education  
Focuses on major issues, methodologies, and significant findings of research on teaching in physical education for the past two decades.

869 Research on Teacher Education in Physical Education  
Analysis of the literature on teacher education research and physical education literature in particular. 
Prereq; 868 or permission of instructor.

870 Research on Effective Teaching and Schooling  
Review of research on effective teaching and schooling with emphasis on using knowledge to reflect on ones own teaching.

871 Behavioral Research Methods in Applied Settings  
Methods of single subject research in educational, clinical, homes, and other applied settings; focus on developing observational design, analysis and interpretation skills. 
2.5-hr cl, 1.5-hr lab. Prereq; 10 hrs of applied behavior analysis, behavior modification or equiv with written permission of instructor. Open only to special education majors; others by permission of instructor.

872 Advanced Studies in Adapted Physical Education  
Examination and assessment of developmental aspects as they relate to physical and motor performance behavior of children with developmental disabilities, mental retardation, and learning disabilities.

873 Behavioral Research in Education: Strategies and Tactics  
This course presents advanced graduate students with knowledge of strategies and tactics for scientific and technological experimentation with human behavior. 
Prereq; 871. Open only to special education majors; others by permission of instructor.

874 Behavioral Research in Education: Critical Analysis and Thematic Extensions  
Completes the 3-course series on behavioral research in education. Recent methodological advances, development of thematic lines of research, and research ethics are key topics. 
Prereq; 871 and 873. Open only to special education majors; others by permission of instructor.

876 Organization and Administration of Guidance Services  
The selection, organization, and presentation of guidance materials, including analysis of types of organization, methods of initiating a guidance program, and types of in-service programs. 
Prereq; 773 or equiv.

877 Mental Health Issues in the Schools  
Overview of the current mental health issues evident in the school setting with a focus on prevention and intervention.

878 Social-Emotional Assessment of Children and Adolescents  
Focuses on assessing mental health factors for children and adolescents for use in school settings.

879 Biological Basis of Behavior: Neuropsychology in the Schools  
Introduction of neuropsychology as it relates to mental health issues. Students learn how to incorporate this knowledge into their assessment and treatment of youth. 
Sp Qtr.

880 Supervision for Teacher Education in Physical Education  
Examines clinical models for supervision in physical education with emphasis on data collection techniques to provide feedback to teaching intern. 
Prereq; 870.
154 Education: Physical Activity and Ed Services

882 School-Based Consultation I: Theories and Process
The consultation process, models, roles, skills, and outcomes for school based personnel will be addressed; emphasis is placed on extending theoretical and practical knowledge. Prereq: 880.

883 School-Based Consultation II: Implementing Behavioral Interventions
Focuses on using the consultation model as the foundation for the implementation of behavioral interventions both individual and group. Prereq: 882.

884.02 Planned Field Experience: Foreign
Planned counseling, supervision, assessment, or teaching experience in a public school or other human service setting under supervision. Repeatable to a maximum of 15 or hrs. This course is graded S/U.

884.10 Planned Field Experience: Special Education
Planned counseling, supervision, assessment, or teaching experience in a public school or other human service setting under supervision. Repeatable to a maximum of 15 or hrs.

884.20 Planned Field Experience: Sport and Exercise Education
Planned counseling, supervision, assessment, or teaching experience in a public school or other human service setting under supervision. Repeatable to a maximum of 15 or hrs.

884.21 Planned Field Experience: Sport and Exercise Humanities
Planned counseling, supervision, assessment, or teaching experience in a public school or other human service setting under supervision. Repeatable to a maximum of 15 or hrs.

884.22 Planned Field Experience: Sport and Exercise Management
Planned counseling, supervision, assessment, or teaching experience in a public school or other human service setting under supervision. Repeatable to a maximum of 15 or hrs.

884.23 Planned Field Experience: Sport and Exercise Science
Planned counseling, supervision, assessment, or teaching experience in a public school or other human service setting under supervision. Repeatable to a maximum of 15 or hrs.

884.25 Planned Field Experience: Rehabilitation Services
Planned counseling, supervision, assessment, or teaching experience in a public school or other human service setting under supervision. Repeatable to a maximum of 15 or hrs.

884.34 Planned Field Experience: Counselor Education
Planned counseling, supervision, assessment, or teaching experience in a public school or other human service setting under supervision. Repeatable to a maximum of 15 or hrs.

884.40 Planned Field Experience: Workforce Development and Education
Planned counseling, supervision, assessment, or teaching experience in a public school or other human service setting under supervision. Repeatable to a maximum of 15 or hrs.

884.63 Planned Field Experience: School Psychology
Planned counseling, supervision, assessment, or teaching experience in a public school or other human service setting under supervision. Repeatable to a maximum of 15 or hrs.

885.66 Supervised Teaching in Special Education: Gifted
Student teaching for qualified students in the area of special education. Prereq: Written permission of instructor. Repeatable to a maximum of 30 or hrs.

886 Colloquium in Exercise Science
Discussion of current research in exercise science. 1 cr. Prereq: Grad standing in HPER or permission of instructor. Required every cr for registered grad students in exercise science. Repeatable to a maximum of 15 or hrs. This course is graded S/U.

888 Professional Writing/Publishing in Special Education
Focus on procedures for conceptualizing, preparing, and submitting manuscripts to educational journals and textbook publishers. 1-3 hr cr. Prereq: Full-time PhD students; permission of instructor. Open only to special education majors; others by permission of instructor.

889 Practicum
Opportunity to put professional theory and research into practice under supervision in University, school and agency settings. Offered in conferences and field experience. Prereq: Permission of instructor and departmental advisor based upon submitted evidence of appropriate knowledge and skill in the selected course. Repeatable to a maximum of 12 or hrs. Repeatable with not more than 4 workshops. This course is graded S/U.

890 Contemporary Issues in Special Education
Weekly teleconference seminars discussing current issues and research in special education with prominent scholars from other universities and research centers. Prereq: PhD student in special education or permission of instructor.

893.10 Advanced Individual Studies: Special Education
Plan A: Not more than 15 or hrs of any 693 and/or 893 will apply toward the master's degree; Plan B: Not more than 20 or hrs will apply. Not more than 30 or hrs will apply toward the doctora degree. Open only to special education majors; others by permission of instructor. Repeatable. This course is graded S/U.

893.20 Advanced Individual Studies: Sport and Exercise Humanities
Plan A: Not more than 15 or hrs of any 693 and/or 893 will apply toward the master's degree; Plan B: Not more than 20 or hrs will apply. Not more than 30 or hrs will apply toward the doctora degree. Repeatable. This course is graded S/U.

893.21 Advanced Individual Studies: Sport and Exercise Science
Plan A: Not more than 15 or hrs of any 693 and/or 893 will apply toward the master's degree; Plan B: Not more than 20 or hrs will apply. Not more than 30 or hrs will apply toward the doctora degree. Repeatable. This course is graded S/U.

893.22 Advanced Individual Studies: Sport and Exercise Management
Plan A: Not more than 15 or hrs of any 693 and/or 893 will apply toward the master's degree; Plan B: Not more than 20 or hrs will apply. Not more than 30 or hrs will apply toward the doctora degree. Repeatable. This course is graded S/U.

893.23 Advanced Individual Studies: Sport and Exercise Services
Plan A: Not more than 15 or hrs of any 693 and/or 893 will apply toward the master's degree; Plan B: Not more than 20 or hrs will apply. Not more than 30 or hrs will apply toward the doctora degree. Repeatable. This course is graded S/U.

893.24 Advanced Individual Studies: Counselor Education
Plan A: Not more than 15 or hrs of any 693 and/or 893 will apply toward the master's degree; Plan B: Not more than 20 or hrs will apply. Not more than 30 or hrs will apply toward the doctora degree. Repeatable. This course is graded S/U.

893.34 Advanced Individual Studies: Counselor Education
Plan A: Not more than 15 or hrs of any 693 and/or 893 will apply toward the master's degree; Plan B: Not more than 20 or hrs will apply. Not more than 30 or hrs will apply toward the doctora degree. Repeatable. This course is graded S/U.

893.40 Advanced Individual Studies: Workforce Development and Education
Plan A: Not more than 15 or hrs of any 693 and/or 893 will apply toward the master's degree; Plan B: Not more than 20 or hrs will apply. Not more than 30 or hrs will apply toward the doctora degree. Repeatable. This course is graded S/U.

893.50 Advanced Individual Studies: Workforce Development and Education
Plan A: Not more than 15 or hrs of any 693 and/or 893 will apply toward the master's degree; Plan B: Not more than 20 or hrs will apply. Not more than 30 or hrs will apply toward the doctora degree. Repeatable. This course is graded S/U.

893.63 Advanced Individual Studies: School Psychology
Plan A: Not more than 15 or hrs of any 693 and/or 893 will apply toward the master's degree; Plan B: Not more than 20 or hrs will apply. Not more than 30 or hrs will apply toward the doctora degree. Repeatable. This course is graded S/U.

894.10 Advanced Group Studies: Special Education
Advanced group studies on special problems in education. Prereq: Written permission of instructor. Repeatable to a maximum of 20 or hrs.

894.20 Advanced Group Studies: Sport and Exercise Education
Advanced group studies on special problems in education. Prereq: Written permission of instructor. Repeatable to a maximum of 20 or hrs.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tr>
<td>916</td>
<td>Behaviorism II: Applications to Special Education</td>
<td>Wi Qtr. 3-hr cl. Prereq: PhD student in special education, MA student in aBA program, or permission of instructor.</td>
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<tr>
<td>917</td>
<td>Behaviorism III - Analysis of Verbal Behavior: Implications for Children with Disabilities</td>
<td>Examines the analysis of verbal behavior from a Skinnerian perspective and its implications for theory, research, and teaching functional communication skills to children with developmental disabilities.</td>
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<tr>
<td>925.20</td>
<td>Seminar: Sport and Exercise Education</td>
<td>Research problems in: Sport and Exercise Education. Prereq: Permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times.</td>
<td>2-5</td>
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</tr>
<tr>
<td>925.21</td>
<td>Seminar: Sport and Exercise Humanities</td>
<td>Research problems in: Sport and Exercise Humanities. Prereq: Permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times.</td>
<td>2-5</td>
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</tr>
<tr>
<td>925.22</td>
<td>Seminar: Sport and Exercise Management</td>
<td>Research problems in: Sport and Exercise Management. Prereq: Permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times.</td>
<td>2-5</td>
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</tr>
<tr>
<td>925.23</td>
<td>Seminar: Sport and Exercise Science</td>
<td>Research problems in: Sport and Exercise Science. Prereq: Permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times.</td>
<td>2-5</td>
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</tr>
<tr>
<td>925.25</td>
<td>Seminar: Rehabilitation Services</td>
<td>Research problems in: Rehabilitation Services. Prereq: Permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times.</td>
<td>2-5</td>
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<tr>
<td>925.34</td>
<td>Seminar: Counselor Education</td>
<td>Research problems in: Counselor Education. Prereq: Permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times.</td>
<td>2-5</td>
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<tr>
<td>925.40</td>
<td>Seminar: Workforce Development Education</td>
<td>Research problems in: Workforce Development and Education. Prereq: Permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times.</td>
<td>2-5</td>
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<tr>
<td>925.63</td>
<td>Seminar: School Psychology</td>
<td>Research problems in: School Psychology. Prereq: Permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times.</td>
<td>2-5</td>
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</tr>
<tr>
<td>926.01</td>
<td>Doctoral seminars: Advanced Interventions I: Diagnosis and Intervention in Counseling</td>
<td>An in-depth exploration of analytical, cognitive, behavioral, and humanistic approaches to the diagnosis and treatment of five major mental and emotional disorders: organic, psychotic, affective, dissociative, and somatoform.</td>
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<tr>
<td>926.02</td>
<td>Doctoral seminars: Advanced Interventions II: Brief Approaches to Counseling</td>
<td>An exploration of brief psychodynamic approaches to the diagnosis and treatment of five major mental and emotional disorders: personality, impulsivity control, anxiety, substance-induced and substance use, and psychosomatic. Prereq: 926.01; Psych 860 or equiv.</td>
<td>3</td>
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<tr>
<td>926.03</td>
<td>Doctoral seminars: Advanced Interventions III: Contemporary Systems of Counseling</td>
<td>An extensive exploration of the theories and applications of classical and contemporary approaches to counseling; emphasis is placed on the use of hypnosis and sensory imagery approaches to behavioral change. Prereq: 926.02; Psych 860 or equiv.</td>
<td>3</td>
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<tr>
<td>906</td>
<td>Understanding Sport Consumers: Theoretical Perspectives</td>
<td>The purpose of this class is to acquaint students with issues related to sport consumers' behaviors by discussing pertinent theories and implications to sport consumer behavior. The course is targeted toward doctoral students in sport management. Prereq: PAES student or permission of instructor.</td>
<td>3</td>
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<tr>
<td>911</td>
<td>Theories of Workforce Development and Education</td>
<td>A study of the theories and perspectives that support workforce development and education. Prereq: Enrollment as a doctoral student. Part of the required core for the PhD program in Workforce Development and Education.</td>
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<tr>
<td>912</td>
<td>Scholarly Perspectives of Workforce Development and Education</td>
<td>Introduces doctoral students to the scholarly process and helps them develop their own area of scholarly focus in workforce development and education. Prereq: Admission to WDE PhD program or permission of instructor.</td>
<td>3</td>
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<tr>
<td>913</td>
<td>Knowledge Generation in Workforce Development and Education</td>
<td>Explores knowledge generation and dissemination within the field of Workforce Development and Education.</td>
<td>3</td>
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<tr>
<td>914.01</td>
<td>WDE Seminars: Data Analysis and Evaluation of Workforce Development Policy</td>
<td>Offers advanced research seminars for doctoral level training in Workforce Policy. Repeatable to a maximum of 18 cr hrs.</td>
<td>3</td>
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<tr>
<td>914.02</td>
<td>WDE Seminars: Issues in Adult Distance Education Teaching and Learning</td>
<td>Offers advanced research seminars for doctoral level training in Adult Distance Education Teaching and Learning. Repeatable to a maximum of 18 cr hrs.</td>
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<tr>
<td>914.03</td>
<td>WDE Seminars: Community of Practice in Workforce Development and Education</td>
<td>Offers advanced research seminars for doctoral level training in a specific WDE area. Au, Wi, Sp Dtrns. Repeatable to a maximum of 16 cr hrs. This course is graded S/U.</td>
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</tr>
<tr>
<td>894.21</td>
<td>Advanced Group Studies: Sport and Exercise Humanities</td>
<td>Advanced group studies on special problems in education. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.</td>
<td>1-5</td>
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<tr>
<td>894.22</td>
<td>Advanced Group Studies: Sport and Exercise Management</td>
<td>Advanced group studies on special problems in education. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.</td>
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<tr>
<td>894.23</td>
<td>Advanced Group Studies: Sport and Exercise Science</td>
<td>Advanced group studies on special problems in education. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.</td>
<td>1-5</td>
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<tr>
<td>894.25</td>
<td>Advanced Group Studies: Rehabilitation Services</td>
<td>Advanced group studies on special problems in education. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.</td>
<td>1-5</td>
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</tr>
<tr>
<td>894.34</td>
<td>Advanced Group Studies: Counselor Education</td>
<td>Advanced group studies on special problems in education. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.</td>
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<tr>
<td>894.40</td>
<td>Advanced Group Studies: Workforce Development and Education</td>
<td>Advanced group studies on special problems in education. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.</td>
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<tr>
<td>894.63</td>
<td>Advanced Group Studies: School Psychology</td>
<td>Advanced group studies on special problems in education. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.</td>
<td>1-5</td>
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<tr>
<td>895</td>
<td>Urban Gifted Education</td>
<td>Focuses on issues in gifted education that are specific to urban settings. Only open to students enrolled in a graduate program in Education or with permission of instructor.</td>
<td>3</td>
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<tr>
<td>896</td>
<td>Social and Emotional Needs of Gifted Students</td>
<td>Focuses on the social and emotional needs and development of gifted students. Only open to students enrolled in a graduate program in Education or with permission of instructor.</td>
<td>3</td>
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<tr>
<td>897</td>
<td>Psychological Services for Early Childhood Populations</td>
<td>Focus is on the provision of comprehensive services to infants, toddlers, and pre-school children and their families.</td>
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</tr>
</tbody>
</table>
156 Education: Physical Activity and Ed Services

926.04 Doctoral seminars: Critical Research Issues in Counselor Education, Supervision, and Practice
An exploration of critical issues in the principles of research as they apply to school, mental health, and rehabilitation counseling.
Prereq: PhD standing or permission of instructor.

926.05 Doctoral seminars: Helping Strategies in Career Counseling
An examination of the skills necessary for individual and group career counseling.
Prereq: Psych 884.01, PhD standing or permission of instructor.

926.06 Doctoral seminars: Legal, Professional, and Ethical Issues in Counseling
An examination of current legal, professional, and ethical issues in counseling.
Prereq: PhD standing or permission of instructor.

926.07 Doctoral seminars: Theories of Counselor Supervision
Knowledge and skills required for counselor supervision with emphasis on generic models, the supervisory relationship, and major theories.
Prereq: PhD standing or permission of instructor.

926.08 Doctoral seminars: Leadership Roles in Professional Counseling
An exploration of leadership strategies as applied to human service delivery systems in which counselors function.
Prereq: PhD standing or permission of instructor.

926.09 Doctoral seminars: Advanced Theory and Intervention of Group Counseling
Major group counseling theories, the group counseling relationship, and therapeutic factors; professional and ethical issues as well as current research will be covered.
Prereq: 774, 775, 800.01, 800.02, 974, 975, or equivs, and permission of instructor.

927 Family Counseling
Introduction to basic approaches, concepts, and techniques of family counseling; the relationship between individual group, and family counseling will be considered.
Prereq: Permission of instructor.

928 Substance Use and Abuse Counseling
Techniques of substance use and abuse counseling emphasizing strengthening of individual and group counseling skills; drugs and their effects on individuals and families will also be covered.
Prereq: Permission of instructor.

931 Theory and Practice of Discussion in Adult Education
Perspectives of adult learning via discussion; analysis of research on group discussion; principles of discussion oriented adult learning; application of group discussion to problem solving.

932 Adult Characteristics and Learning Theory
Examination of significant learning theories and their applicability to adult learning experiences.
Prereq: 672 or permission of instructor.

934 Organization and Administration of Adult Education Programs
The administrative functions within adult education agencies: decision making, staff development, financing, evaluating, and improving adult education programs.
Prereq: 672 or written permission of instructor.

935 Program Planning in Adult Education
Prepares educators to implement components in planning educational programs for adults: assessing needs, setting objectives, selecting and training staff, choosing instructional strategies, promotion, and evaluation.
Prereq: 672 or equiv.

951 Organization and Management Theory in Sport and Exercise Management
Organization and management theory applied to sport organizations.
Prereq: Grad standing. Only open to students enrolled in sport and exercise management program.

952 Selected Topics in Organizational Behavior
Organizational behavior in sport organizations.
Prereq: Grad standing. Only open to students enrolled in sport management program.

953 Current Research in Sport and Exercise Management
Current research in sport and exercise management.
Prereq: Grad standing. Repeatable to a maximum of 6 cr hrs.

961 Comparative Workforce Development and Education Policies
Provides detailed overview of national WFD policies across the world.

974 Supervised Practice in Individual Counseling: Children
Counseling techniques unique to elementary age children including play media and conceptualizing the environmental press on the child.
Minimum 30 contact hrs. Prereq: 773 and written permission of instructor. Repeatable to a maximum of 9 cr hrs.

975 Supervised Practice in Group Counseling: Children
Supervision of each enrollee who counsels with a group of children of elementary age in a school or other institutional setting.
Minimum 30 contact hrs. Prereq: 773 and written permission of instructor. Repeatable to a maximum of 9 cr hrs.

976 Supervised Practicum in Individual Counseling: Adolescent, Youth, and Adult
Supervised practice in counseling individual clients of adolescent to adult age; emphasis on developing counseling skills, including: counseling relationship; conceptualizing clients; self-understanding.
Minimum 30 contact hrs. Prereq: 773 and written permission of instructor. Repeatable to a maximum of 9 cr hrs.

977 Supervised Practice in Group Counseling: Children
Counseling techniques unique to children in group counseling setting, including: conceptualizing the environmental press on the child.
Minimum 30 contact hrs. Prereq: 773 and written permission of instructor. Repeatable to a maximum of 9 cr hrs.

978 Supervised Practicum in Rehabilitation Services
Supervised practice in guidance and counseling activities in the work setting; emphasis on the range of activities performed by guidance workers in school and related settings.
Minimum 30 contact hrs. Prereq: 773 and written permission of instructor. Repeatable to a maximum of 9 cr hrs.

989 Internship in Sport Management
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. Internship—350 to 400 hrs. Reading/research/assignments—20hrs.
Prereq: 889 and permission of instructor. This course is graded S/U.

992 Internship in School Psychology
Professional experiences planned by the student, staff member, and local school supervisor.
1,200 clock hrs for 3-5 cr sequence. Prereq: Permission of instructor. Limited to select PhD and post-master's students specializing in school psychology. Repeatable to a maximum of 36 cr hrs.

995 Doctoral-level Internship in Counseling
Supervised internship in professional counseling for doctoral-level students in educational, mental health, or related settings.
Arr. Prereq: PhD standing or permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

999.10 Research: Special Education
Research for thesis or dissertation purposes only.
Repeatable. This course is graded S/U.

999.20 Research: Sport and Exercise Education
Research for thesis or dissertation purposes only.
Repeatable. This course is graded S/U.

999.21 Research: Sport and Exercise Humanities
Research for thesis or dissertation purposes only.
Repeatable. This course is graded S/U.

999.22 Research: Sport and Exercise Management
Research for thesis or dissertation purposes only.
Repeatable. This course is graded S/U.

999.23 Research: Sport and Exercise Science
Research for thesis or dissertation purposes only.
Repeatable. This course is graded S/U.

999.25 Research: Rehabilitation Services
Research for thesis or dissertation purposes only.
Repeatable. This course is graded S/U.

999.34 Research: Counselor Education
Research for thesis or dissertation purposes only.
Repeatable. This course is graded S/U.

999.40 Research: Workforce Development and Education
Research for thesis or dissertation purposes only.
Repeatable. This course is graded S/U.
Education: Teaching and Learning

20 Beginning Intensive English as a Second Language UGRD 0

Intensive instruction in English as a second language for students at a beginning level of proficiency; listening, speaking, structure, reading, and writing.
Su, Au, Wi, Sp Qtrs. 5-5.5-hr cl. Prereq: Admission to American Language Program and approval of ALP director. Repeatable for 2 qtrs. This course is Progress (P') graded. This course is graded S/U.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

21 Elementary Intensive English as a Second Language UGRD 0

Intensive instruction in English as a second language for students at an elementary level of proficiency; listening, speaking, structure, reading, and writing.
Su, Au, Wi, Sp Qtrs. 5-hr cl. Prereq: Admission to American Language Program and approval of ALP director. Repeatable for 2 qtrs. This course is Progress (P') graded. This course is graded S/U.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

22 Intermediate Intensive English as a Second Language UGRD 0

Intensive instruction in English as a second language for students at an intermediate level of proficiency; listening, speaking, structure, reading, and writing.
Su, Au, Wi, Sp Qtrs. 5-hr cl. Prereq: Admission to American Language Program, approval of ALP director, and completion of 021 or equiv. Repeatable for 2 qtrs. This course is Progress (P') graded. This course is graded S/U.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

23 Advanced Intensive English as a Second Language UGRD 0

Intensive instruction in English as a second language for students with advanced proficiency; listening, speaking, structure, reading, and writing, with emphasis on English for academic purposes.
Su, Au, Wi, Sp Qtrs. 5.5-hr cl. Prereq: Admission to American Language Program, approval of ALP director and completion of 022 or equiv. Repeatable for 2 qtrs. This course is Progress (P') graded. This course is graded S/U.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

104 Basic Spoken English for International Graduate Teaching Associates UGRD 5

Practice of basic oral and aural English language skills for non-native speakers.
Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: Placement test or recommendation of director. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

105 Classroom English for International Graduate Teaching Associates UGRD 5

Practice of spoken and pedagogical skills for effective classroom teaching by non-native speaking graduate teaching associates.
Su, Au, Wi, Sp Qtrs. 3.5-5-hr cl. Prereq: Successful completion of 104 and/or SphHrng 035; or placement test; or recommendation of director. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

106 General English as a Second Language UGRD 5

Review of English structure for non-native speakers of English; major emphasis is on writing, with attention also to development of oral-aural skills.
Su, Au, Wi, Sp Qtrs. 3.5-cl. Prereq: Placement test or recommendation of director. Not open to students having earned a D or above in 071, 072, or 073. This course is Progress (P') graded.

107 Advanced English as a Second Language UGRD 5

Reviews advanced English patterns with emphasis on their use in writing essays.
Prereq: Placement test or grade of D or above in 106. Not open to students having earned a D or above in 072 or 073. This course is Progress (P') graded.

108.01 Academic Writing in English as a Second Language: Undergraduates UGRD 5

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.
5 cl. Prereq: Placement test or grade of D or above in 107. Not open to students having earned D or above in 073. This course is Progress (P') graded.

108.02 Academic Writing in English as a Second Language: Graduates UGRD 5

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. Intended for graduates.
5 cl; tutorial time arranged. Prereq: Placement test or grade of D or above in 107. Not open to students having earned D or above in 073. This course is Progress (P') graded.

110 Learning and Teaching Life Science UGRD 2

Contemporary and research-based pedagogical methods for designing, constructing and assessing safe and effective science instruction.
Su, Au, Wi Qtrs. 2 cl. Repeatable to a maximum of 6 cr hrs.

114 American Sign Language IV UGRD 5

More advanced expressive and receptive skills with a focus on narratives. ASL literature introduced. Further exploration of American deaf culture and history.
Au Qtr. 2.5-hr cl. Prereq: 113 or English 103 or SphHrng 103. Not open to native users of the language or students with credit for SphHrng 104. GEC for lang course.

120 Technology Education Practices and the School UGRD 4

Studies in technology education; introduction to tools, materials, and processes; study of past, present, and future technology education programs; observation and participation in local schools.

220 Design of Constructed and Manufactured Goods UGRD 3

A study of historical and contemporary design technology as it is applied in the construction and manufacturing industries.
Prereq: En Graph 121.

221 Manufacturing Practices I UGRD 4

A study of basic concepts of manufacturing technology through experiences in forming, separating, combining, and assembling materials used in the production of manufactured goods.
Prereq: 120 or 220.

222 Manufacturing Practices II UGRD 5

A study of manufacturing management technology, manufacturing production technology, and manufacturing personnel technology through experiences in planning, engineering and production of selected manufactured goods.
Prereq: 221.

224 Mechanical Systems and Servicing UGRD 4

Study of energy sources converted to power and techniques necessary for the application of mechanical power systems to servicing mechanical power systems.
Prereq: 120.

225 Transmitting and Utilizing Mechanical Power UGRD 4

Study of the selection, installation, operation, and maintenance of mechanical power transmission systems for technological and transportation activities.
Prereq: 224.

227 Electrical Systems and Servicing UGRD 4

Study of techniques necessary for the application of electricity to practices used in fabricating and servicing of electrical systems.
Prereq: 120.

228 Electronic Systems and Servicing UGRD 4

Study of techniques necessary for the application of electronics to practices used in fabricating and servicing electronic systems.
Prereq: 227.

231 Construction Practices I UGRD 5

A study of basic concepts of construction technology through experiences in forming, separating, combining, and assembling materials used in the production of residential structures.
Prereq: 120 or 220.

232 Construction Practices II UGRD 5

A study of construction management, production, and personnel technologies through real and simulated experiences in the production of constructed goods.
Prereq: 231.

235 Graphic Reproduction Practices UGRD 4

An examination of graphic reproduction processes, manipulative skills necessary to teach graphic reproduction processes, and administrative procedures required to operate a graphic arts program.
Prereq: 120; 220.

236 Printing and Publishing Practices UGRD 4

An examination of the managed production system utilized in the printing and publishing industry.
Prereq: 235.

250 Work Experience in Industry UGRD 3-6

Firsthand study of working conditions, methods, and processes of industry, and their implication for the teaching of technology education.
Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

255 Handicrafts UGRD 4

Designed to develop skills and knowledge in the use of the common areas of handicrafts such as leather, metals, plastics, wood, and the graphic arts. Open only to occ ther and sport and leisure studies majors. Repeatable to a maximum of 12 cr hrs.
### 158 Education: Teaching and Learning

**289.10 Field Experience: Elementary Education**  
UGRD 2-5  
Professional service with children or youth in a school or community agency. Planned elementary education field experience under supervision. Su Qtr. Prereq: Permission of instructor. Repeatable hrs including 289.02. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**289.21 Field Experience: Technology Education**  
UGRD 2-5  
Professional service with children or youth in a school or community agency. Experience in technology education classrooms, emphasis on observation and assisting in the preparation and delivery of learning activities. Includes a seminar to discuss experiences. Prereq: Permission of instructor. Must have at least 40 hrs of technology content coursework required. Repeatable to a maximum of 20 cr hrs. 5-3-hr field experiences.

**294.10 Elementary Education**  
UGRD 1-5  
Group studies for students in specialized programs. Elementary Education. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**294.28 Social Studies**  
UGRD 1-5  
Group studies for students in specialized programs. Social Studies. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**294.45 Foreign and Second Language Education**  
UGRD 1-5  
Group studies for students in specialized programs. Foreign and Second Language Education. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**294.52 Visual Disabilities**  
UGRD 1-5  
Group studies for students in specialized programs. Visual Disabilities. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**294.55 Hearing Disabilities**  
UGRD 1-5  
Group studies for students in specialized programs. Hearing Disabilities. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**294.70 Early Childhood Education**  
UGRD 1-5  
Group studies for students in specialized programs. Early Childhood Education. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**33 Special Studies in English as a Second Language**  
UGRD 1-5  
Specialized study of English as a second language leading to improved language proficiency. Skills covered include listening, speaking, reading, and composition. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**355 Custom Production of Manufactured Goods**  
UGRD 4  
Study of custom production planning and processing of industrial goods through experiences in the custom production of selected manufactured goods. Prereq: 3rd yr standing in major. Not open to students with credit for 255.

**415 Discourse Techniques in Narratives in American Sign Language**  
UGRD 5  
To assist students in establishing the basic building blocks of a successful signed narrative with various elements including mapping a mental model. Prereq: English 101, 102, EduTL 113, 114, or Sphiting 103, 104 (ASL 1-4). Taught in American Sign Language.

**460 Elementary Education: Child Guidance**  
UGRD 4  
Designed to develop an understanding of child growth and development principles in relation to instruction.

**467 Introduction to Children's Literature**  
UGRD 3  
Study of literature for children with emphasis on standards for selecting materials with reference to the interests, needs, and abilities at different age levels.

**488.01 Introductory Methods: Mathematics Methods for Middle Childhood Teachers**  
UGRD 3  
Introduction to pedagogical principles for prospective middle childhood teachers. Prereq: Admission to appropriate pre-education program.

**488.04 Introductory Methods: Science Methods for Middle Childhood Teachers**  
UGRD 3  
Introduction to pedagogical principles for prospective middle childhood teachers. Prereq: Admission to appropriate pre-education program.

**488.06 Introductory Methods: Social Studies Methods for Middle Childhood Teachers**  
UGRD 3  
Introduction to pedagogical principles for prospective middle childhood teachers. Prereq: Admission to appropriate pre-education program.

**488.07 Introductory Methods: Language Arts Methods for Middle Childhood Teachers**  
UGRD 3  
Introduction to pedagogical principles for prospective middle childhood teachers. Prereq: Admission to appropriate pre-education program.

**489.01 Advanced Field Experience: Middle Childhood Mathematics Education**  
UGRD 2-5  
Directed field experience emphasizing appropriate teaching strategies for different school age children and school settings. 2.5 hrs arranged/credit. Prereq: Admission to appropriate teacher education program. Repeatable to a maximum of 15 cr hrs. Students will be placed in a middle childhood mathematics classroom.

**489.02 Advanced Field Experience: Science Education Elementary School Program**  
UGRD 3-5  
Directed field experience emphasizing appropriate teaching strategies for different school age children and school settings. Prereq: Admission to appropriate teacher education program. Repeatable to a maximum of 15 cr hrs.

**489.03 Advanced Field Experience: Secondary School Mathematics Education**  
UGRD 3-5  
Directed field experience emphasizing appropriate teaching strategies for different school age children and school settings. Prereq: Admission to appropriate teacher education program. Repeatable to a maximum of 15 cr hrs.

**489.04 Advanced Field Experience: Middle Childhood Science Education**  
UGRD 2-5  
Directed field experience emphasizing appropriate teaching strategies for different school age children and school settings. 2.5 hrs arranged/credit. Prereq: Admission to appropriate teacher education program. Repeatable to a maximum of 15 cr hrs. Students will be placed in a middle childhood science classroom.

**489.05 Advanced Field Experience: Science Education Secondary School Classes and Laboratories**  
UGRD 3-5  
Directed field experience emphasizing appropriate teaching strategies for different school age children and school settings. Prereq: Admission to appropriate teacher education program. Repeatable to a maximum of 15 cr hrs. Students will be placed in a middle childhood science classrooms.

**489.07 Advanced Field Experience: Middle Childhood Reading and Language Arts Education**  
UGRD 2-5  
Directed field experience emphasizing appropriate teaching strategies for different school age children and school settings. 2.5 hrs arranged/credit. Prereq: Admission to an appropriate pre-education program. Repeatable to a maximum of 15 cr hrs. Students will be placed in a middle childhood Reading and Language Arts classroom.

**489.10 Advanced Field Experience: Elementary Education**  
UGRD 3-5  
Directed field experience emphasizing appropriate teaching strategies for different school age children and school settings. Prereq: Admission to appropriate teacher education program. Repeatable to a maximum of 15 cr hrs.

**489.21 Advanced Field Experience: Technology Education**  
UGRD 3-5  
Experience in technology education classrooms with emphasis on taking on full teacher duties for one class. Includes a seminar to discuss experiences. Prereq: 289.21; admission to appropriate teacher education program. Repeatable to a maximum of 15 cr hrs. 5-3-hr field experiences.

**489.70 Advanced Field Experience: Early Childhood Education**  
UGRD 3-5  
Directed field experience emphasizing appropriate teaching strategies for different school age children and school settings. Prereq: Admission to appropriate teacher education program. Repeatable to a maximum of 15 cr hrs.

**501 Kindergarten and Preschool Teaching**  
UGRD 3  
Recent development in the education of young children and its influence on the selection and guidance of appropriate activities.

**504 Basic Spoken English for International Graduate Teaching Associates**  
GRAD 5  
Practice of oral and aural English language skills for non-native speakers. Prereq: Placement test score of 100-180 on SPEAK test (intermediate-advanced learner), acceptance into Graduate School or recommendation of director. This course is graded S/U.
505 Classroom English for International Graduate Teaching Associates  
Practice of spoken and pedagogical skills for effective classroom teaching by non-native speaking graduate teaching associates.  
Prereq: Successful completion of 504; or placement test; or recommendation of director. This course is graded S/U.

506 General English as a Second Language  
Review of English structure for non-native speakers of English; major emphasis is on writing, with attention also to development of oral-aural skills.  
Prereq: Placement test or recommendation of director. Not open to students having earned a D or below in 071, 072, or 073.

507 Advanced English as a Second Language  
Reviews advanced English patterns with emphasis on their use in writing essays.  
Prereq: Placement test or grade D or above in 506. Not open to students having earned a D or above in 072 or 073.

508 Academic Writing in English as a Second Language  
Attention given to practices involving reading and source-based writing. Rhetorical and linguistic issues addressed.  
Prereq: Placement test or grade D or above in 507. Not open to students having earned a D or above in 073.

511 Elementary Education: Science  
The role of science in childhood education; study of content, methods, materials, and equipment.

520 Educational Studies in Deafness  
Introduces students to perspectives, issues, and controversies in the education of deaf or hard of hearing students.

525 Automation of Production Systems for Technology Educators  
An introduction to robotics and automation, their applications to manufacturing, construction, communication, energy-power, systems, and methods of teaching about them; includes laboratory experiences.  
Prereq: 222 and 227.

559 Urban Teaching and Learning  
This course will draw on historical and contemporary research to examine teaching and learning in urban schooling contexts.

589 Laboratory Experience for Integrated Language Arts and English  
Provides students an opportunity to explore 7-12 English language arts teaching through readings, video cases of teaching, group discussion, and laboratory experience.  
20 hours of observation in a local school. This course is a prerequisite for the Integrated Language Arts licensure and Masters of Education (M.Ed.) program.

601.07 Foundations of Education: Theory, Philosophy, and Organization: General Student Body  
Examination of the history, rationale, philosophy, organization, and distinctive components fundamental to middle childhood education.

601.20 Foundations of Education: Theory, Philosophy, and Organization: Middle Childhood Education  
This course is designed to prepare prospective middle level teachers to make decisions about curriculum, instruction, and assessment based on a sound content knowledge base and an understanding of the unique nature and needs of early adolescents.

603.07 Interdisciplinary Teaching and Learning for Middle Childhood: General Student Body  
Focus on the interrelatedness of the disciplines and the design, implementation, and assessment of curriculum and pedagogy for middle childhood learners.

603.20 Interdisciplinary Teaching and Learning for Middle Childhood: Middle Childhood Education  
Focus on the interrelatedness of the disciplines and the design, implementation, and assessment of curriculum and pedagogy for middle childhood learners.

605.01 Writing for Coursework for International and 2nd Language Graduate Students  
Guidance and practice in writing for graduate level coursework for learners of English.  
Wi Qtr. Prereq: Edu/TL 108.02 or ‘qualified’ status. Enrollment by permission of instructor.  
Tutorial time arranged. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

605.02 Writing Up Research for International and 2nd Language Graduate Students  
Designed to help international graduate students in preparing a conference paper and in preparing a manuscript for publication.  
Su Qtr. Prereq: Edu/TL 108.02 or ‘qualified’ status. Enrollment by permission of instructor.  
Tutorial time arranged. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

605.03 Thesis Proposal and Dissertation Writing for International and 2nd Language Graduate Students  
Sp Qtr. Prereq: Edu/TL 108.02 or ‘qualified’ status. Enrollment by permission of instructor.  
Tutorial time arranged. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

606 Language Arts in the Bilingual/Multicultural Classroom  
Research and theories of first and second language acquisition as related to methods of teaching, listening, speaking, reading, and writing in bilingual/multicultural classroom.  
Prereq: written permission of instructor.

607 Writing Course in Early and Middle Childhood Education  
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.

610 History of Practical Arts and Vocational Education  
History of those vocational and non-vocational phases of agriculture, business, industry, and homemaking which concern education.

611 Great Lakes Education Workshop  
Techniques and curricula for presenting interdisciplinary aspects of the oceans and Great Lakes in formal and informal education settings.  
10 hrs cl per cr, 1.5days per cr, 10-4 hr cl. Prereq: Teaching certificate or sr standing. Not open to students with credit for NatRes 691 or 611 or Educ 727-Sea Grant. Repeatable to a maximum of 5 cr hrs.

612 Linguistic Materials for Teachers  
Study of linguistic systems, language acquisition, and sociolinguistics as they bear on the work of classroom teachers.

613 Methods for Conservation Education  
Experience centered course for conservation/natural resources education including objectives, instructional, and evaluative procedures appropriate to formal and non-formal settings.  
Prereq: Sr or grad standing. Not open to students with credit for NatRes 613.

614 Marine and Aquatic Education  
Overview of oceanic and Great Lakes resources, their functions in history, climate, commerce, and culture, and the school curriculum.  
Prereq: 20 cr hrs of social, physical, and/or biological sciences or teacher licensure, and permission of instructor. Not open to students with credit for NatRes 614. Travel and subsistence costs for field trips must be borne by students.

615 Teaching of Modern Foreign Language I  
Theory and practice of teaching foreign language in beginning classes; use and preparation of instructional materials based on research studies.  
Open only to M Ed students. Course meets concurrently with 616.

616 Teaching of Modern Foreign Language II  
The study of the use of new instructional materials for intermediate and advanced foreign language classes; teaching of reading, writing, literature, culture, and evaluation.  
Open only to M Ed students. Course meets concurrently with 615.

617 Teaching of Foreign Languages in the Elementary School  
Skill development in teaching of spoken and written foreign languages on the elementary school level; construction and use of suitable materials; discussion of issues and problems, evaluation.  
Prereq: 15 cr hrs of educ and written permission of instructor.

618 Teaching of Latin  
Values, teachers’ equipment, objectives, and methods; classroom procedures; lectures and assigned readings.  
3 cr, lab arr. Prereq or concur: Latin 201 and 202, and an additional 6 cr hrs in Latin.

621 Methods in Teaching Secondary Mathematics I  
Designed to increase pre-service teacher pedagogical content knowledge of number concepts and stochastic concepts as appropriate for secondary.  
Su Qtr. Prereq: Admission to M.Ed. or permission of instructor.

624 Social Education  
Analysis of social structures and processes in classroom grouping arrangements; teacher social roles, school traditions, ceremonies, clubs, and athletics.  
Prereq: Permission of instructor or teaching experience.

633 Teaching and Learning with Drama: Introduction  
Introduction to the use of drama and imagination in education.  
Prereq: Experienced teacher or jr/sr standing with some field experience. Repeatable to a maximum of 6 cr hrs.

636.01 Methods in Teaching Secondary Science I  
Designed to increase pre-service teacher pedagogical content knowledge while applying principles of scientific inquiry with topics identified as essential by NSES and other reform documents.  
Su Qtr. 2.5-hr cl. Prereq: Admission to M.S. Ed or permission of instructor.
160 Education: Teaching and Learning

636.02 Methods in Teaching Secondary Science II  GRAD  3
Designed to increase pre-service teacher pedagogical content knowledge while applying principles of scientific inquiry with topics identified as essential by NSES and other reform documents. Wi Qtr. 2.5-hr clr. Prereq: Admission to MSAT M Ed or permission of instructor. Students are expected to be concurrently enrolled in a school-based practicum.

638 Teaching of Secondary Social Studies I  UGRD  4
Designed to help future social studies teachers conceptualize social studies and develop understanding of methods and materials for classroom instruction.

639 Teaching of Secondary Social Studies II  UGRD  4
Trends, problems, issues, and instructional strategies in secondary social studies with emphasis on simulations, case studies, the media, role playing, controversial issues, and multicultural education.

640 Methods and Techniques of Teaching English to Speakers of Other Languages  UGRD  4
Study of the use of new instructional materials for intermediate and advanced TESOL classes; teaching of reading, writing, literature, and culture; evaluation. Prereq: Permission of instructor.

641 Journalism in the Secondary School  UGRD  3
A course 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). Prereq: Admission to the masters of education (M.Ed.) program. This course is graded S/U.

642.07 Teaching Reading Across the Curriculum: General Student Body  UGRD  3
Provides M Ed students with the knowledge and tools they need to support the developmental reading and literacy skills of middle and secondary students. Prereq: Admitted into an M Ed program, Human Ecology major, or permission of instructor. Appropriate for students planning to obtain teacher licensure at the secondary level. Does not substitute for reading core in Early Childhood; Middle Childhood; or Intervention Specialist licensure.

642.23 Teaching Reading Across the Curriculum: Math, Science and Technology  UGRD  3
Provides M Ed students with the knowledge and tools they need to support the developmental reading and literacy skills of middle and secondary students. Prereq: Admitted into an M Ed program, Human Ecology major, or permission of instructor. Appropriate for students planning to obtain teacher licensure at the secondary level. Does not substitute for reading core in Early Childhood; Middle Childhood; or Intervention Specialist licensure.

642.99 Teaching Reading Across the Curriculum: Language, Literacy and Culture: General Student Body  UGRD  3
Provides M Ed students with the knowledge and tools they need to support the developmental reading and literacy skills of middle and secondary students. Prereq: Admitted into an M Ed program, Human Ecology major, or permission of instructor. Appropriate for students planning to obtain teacher licensure at the secondary level. Does not substitute for reading core in Early Childhood; Middle Childhood; or Intervention Specialist licensure.

643.07 Social Education and Language, Literacy, and Culture: General Student Body  GRAD  3
The relationship of social structures, schooling, and educational issues examined in relationship to the use of language, civic literacy, and culture. Prereq: Admission to LLC M Ed program.

643.99 Social Education and Language, Literacy, and Culture: General Student Body  UGRD  3
The relationship of social structures, schooling, and educational issues examined in relationship to the use of language, civic literacy, and culture. Prereq: Admission to LLC M Ed program.

644 Dramatizing Texts  UGRD  3
The use of drama for interpreting all genres of texts. Repeatability: to a maximum of 6 cr hrs.

645 Teaching Writing in the Secondary School  GRAD  4
Designed to assist students to understand writing development to develop process-oriented approaches to writing instruction. Prereq: Admission to LLC M Ed program. Field experiences required. Requirement for M Ed students in LLC with a specialization in English Education.

646 Teaching Literature in the Secondary School  GRAD  4
Focus on leading discussions of literature, teaching literature-writing assignments, and using writing to foster literary understanding. Prereq: Admission to LLC M Ed program. Field experiences required. Required for M Ed students in LLC with a specialization in English Education.

647 The Arts and Early Childhood Education  GRAD  3
Students will learn how the arts are integral to early childhood education and how to create integrated contexts for teaching and learning.

656 Literature for Adolescents  UGRD  3
Literature for individual, group, and whole-class reading in junior and senior high schools; interest factors, readability, and literary value as criteria for selection; bibliographic aids.
683 Integrating Language Arts and Social Studies in UGRD 3 4th and 5th Grades
This course is related to the integration of LA/SS. The focus is on curriculum, pedagogy, and integration specific to 4th-5th grades.

684.21 Field Experience: Technology Education UGRD 1-15
Experience in technology education classrooms with emphasis on taking on full teacher duties. Includes a seminar to discuss experiences. 1-2 hr seminar plus field supervision. Prereq: 489.21, permission of instructor. Repeatable to a maximum of 27 cr hrs. 5-7 hr field experiences.

684.28 Field Experience: Secondary Social Studies UGRD 1-15
Experiences in appropriate middle and high school social studies classrooms with an emphasis on acquiring skills to work with students and preparing, conducting and evaluating learning activities. Prereq: Permission of instructor. Must have 80 hrs in a combination of history, geography, economics, political science and sociology courses required for secondary social studies licensure. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

685 Orientation and Mobility for Teachers of Students with Visual Disabilities
Readiness activities, assessment procedures, instructional strategies, and direct experience with selected travel techniques for persons with visual disabilities.

692.10 Workshop: Elementary Education UGRD 1-8
Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it. Prereq: Teaching experience and written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs. This course is graded S/U.

692.20 Workshop: Middle Childhood Education UGRD 1-8
Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it. Prereq: Teaching experience and written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs.

692.21 Workshop: Technology Education UGRD 1-8
Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it. Prereq: Teaching experience and written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs.

692.22 Workshop: Mathematics, Science and Technology Education UGRD 1-8
Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it. Prereq: Teaching experience and written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs.

692.25 Workshop: English Education UGRD 1-8
Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it. Prereq: Teaching experience and written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs.

692.26 Workshop: Mathematics Education UGRD 1-8
Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it. Prereq: Teaching experience and written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs.

692.27 Workshop: Science Education UGRD 1-8
Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it. Prereq: Teaching experience and written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs.

692.28 Workshop: Social Studies Education UGRD 1-8
Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it. Prereq: Teaching experience and written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs.

692.45 Workshop: Foreign and Second Language Education UGRD 1-8
Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it. Prereq: Teaching experience and written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs.

692.46 Workshop: TESOL UGRD 1-8
Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it. Prereq: Teaching experience and written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs.

692.50 Workshop: Integrated Teaching and Learning UGRD 1-8
Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it. Prereq: Teaching experience and written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs.

692.52 Visual Disabilities UGRD 1-8
Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it. Prereq: Teaching experience and written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs. Repeatable to a maximum of 12 cr hrs.

692.55 Hearing Disabilities UGRD 1-8
Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it. Prereq: Teaching experience and written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs. Repeatable to a maximum of 12 cr hrs.

692.56 Workshop: Drama, Language Arts, Literature and Reading Education UGRD 1-8
Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it. Prereq: Teaching experience and written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs. This course is graded S/U.

692.70 Workshop: Early Childhood Education UGRD 1-8
Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it. Prereq: Teaching experience and written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs.

692.99 Workshop: Language, Literacy and Culture UGRD 1-18
Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it. Prereq: Teaching experience and written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs.

693.10 Individual Studies: Elementary Education UGRD 1-4
Elementary Education. Prereq: Permission of instructor. A total of not more than 30 cr hrs of individual study (any 693) will apply toward graduation for undergrad students, or 15 cr hrs for the master's degree and 30 cr hrs for the doctoral degree. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

693.20 Individual Studies: Middle Childhood Education UGRD 1-4
Middle Childhood Education. Prereq: Permission of instructor. A total of not more than 30 cr hrs of individual study (any 693) will apply toward graduation for undergrad students, or 15 cr hrs for the master's degree and 30 cr hrs for the doctoral degree. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

693.21 Individual Studies: Technology Education UGRD 1-4
Technology Education. Prereq: Permission of instructor. A total of not more than 30 cr hrs of individual study (any 693) will apply toward graduation for undergrad students, or 15 cr hrs for the master's degree and 30 cr hrs for the doctoral degree. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

693.22 Individual Studies: Mathematics, Science and Technology Education UGRD 1-4
Mathematics, Science and Technology Education. Prereq: Permission of instructor. A total of not more than 30 cr hrs of individual study (any 693) will apply toward graduation for undergrad students, or 15 cr hrs for the master's degree and 30 cr hrs for the doctoral degree. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

693.25 Individual Studies: English Education UGRD 1-4
English Education. Prereq: Permission of instructor. A total of not more than 30 cr hrs of individual study (any 693) will apply toward graduation for undergrad students, or 15 cr hrs for the master's degree and 30 cr hrs for the doctoral degree. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

693.26 Individual Studies: Mathematics Education UGRD 1-4
Mathematics Education. Prereq: Permission of instructor. A total of not more than 30 cr hrs of individual study (any 693) will apply toward graduation for undergrad students, or 15 cr hrs for the master's degree and 30 cr hrs for the doctoral degree. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

693.27 Individual Studies: Science Education UGRD 1-4
Science Education. Prereq: Permission of instructor. A total of not more than 30 cr hrs of individual study (any 693) will apply toward graduation for undergrad students, or 15 cr hrs for the master's degree and 30 cr hrs for the doctoral degree. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

693.28 Individual Studies: Social Studies Education UGRD 1-4
Social Studies Education. Prereq: Permission of instructor. A total of not more than 30 cr hrs of individual study (any 693) will apply toward graduation for undergrad students, or 15 cr hrs for the master's degree and 30 cr hrs for the doctoral degree. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.
Education: Teaching and Learning

693.45 Individual Studies: Foreign and Second Language Education

Foreign and Second Language Education.
Prereq: Permission of instructor. A total of not more than 30 cr hrs of individual study (any 693) will apply toward graduation for undergrad students, or 15 cr hrs for the master’s degree and 30 cr hrs for the doctoral degree. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

693.46 Individual Studies: TESOL

TESOL.
Prereq: Permission of instructor. A total of not more than 30 cr hrs of individual study (any 693) will apply toward graduation for undergrad students, or 15 cr hrs for the master’s degree and 30 cr hrs for the doctoral degree. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

693.50 Individual Studies: Integrated Teaching and Learning

Integrated Teaching and Learning.
Prereq: Permission of instructor. A total of not more than 30 cr hrs of individual study (any 693) will apply toward graduation for undergrad students, or 15 cr hrs for the master’s degree and 30 cr hrs for the doctoral degree. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

693.52 Individual Studies: Visual Disabilities

Visual Disabilities.
Prereq: Permission of instructor. A total of not more than 30 cr hrs of individual study (any 693) will apply toward graduation for undergrad students, or 15 cr hrs for the master’s degree and 30 cr hrs for the doctoral degree. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

693.55 Individual Studies: Hearing Disabilities

Hearing Disabilities.
Prereq: Permission of instructor. A total of not more than 30 cr hrs of individual study (any 693) will apply toward graduation for undergrad students, or 15 cr hrs for the master’s degree and 30 cr hrs for the doctoral degree. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

693.56 Individual Studies: Drama, Language Arts, Literature and Reading Education

Drama, Language Arts, Literature and Reading Education.
Prereq: Permission of instructor. A total of not more than 30 cr hrs of individual study (any 693) will apply toward graduation for undergrad students, or 15 cr hrs for the master’s degree and 30 cr hrs for the doctoral degree. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

693.70 Individual Studies: Early Childhood Education

Early Childhood Education.
Prereq: Permission of instructor. A total of not more than 30 cr hrs of individual study (any 693) will apply toward graduation for undergrad students, or 15 cr hrs for the master’s degree and 30 cr hrs for the doctoral degree. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

693.99 Individual Studies: Language, Literacy and Culture

Language, Literacy and Culture.
Prereq: Permission of instructor. A total of not more than 30 cr hrs of individual study (any 693) will apply toward graduation for undergrad students, or 15 cr hrs for the master’s degree and 30 cr hrs for the doctoral degree. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

694.10 Group Studies: Elementary Education

Group studies on special problems in education.
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

694.20 Group Studies: Middle Childhood Education

Group studies on special problems in education.
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

694.21 Group Studies: Technology Education

Group studies on special problems in education.
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

694.23 Group Studies: Mathematics, Science and Technology Education

Group studies on special problems in education.
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

694.25 Group Studies: English Education

Group studies on special problems in education.
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

694.26 Group Studies: Mathematics Education

Group studies on special problems in education.
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

694.27 Group Studies: Science Education

Group studies on special problems in education.
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

694.28 Group Studies: Social Studies Education

Group studies on special problems in education.
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

694.45 Group Studies: Foreign and Second Language Education

Group studies on special problems in education.
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

694.46 Group Studies: TESOL

Group studies on special problems in education.
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

694.50 Group Studies: Integrated Teaching and Learning

Group studies on special problems in education.
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

694.52 Group Studies: Visual Disabilities

Group studies on special problems in education.
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

694.55 Group Studies: Hearing Disabilities

Group studies on special problems in education.
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

694.56 Group Studies: Language Arts, Literature and Reading Education

Group studies on special problems in education.
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

694.70 Group Studies: Early Childhood Education

Group studies on special problems in education.
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

694.99 Group Studies: Language, Literacy and Culture

Group studies on special problems in education.
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

697 Study at a Foreign Institution

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Art. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This course is Progress ('P') graded. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

698.01 Study Tour: Domestic

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable to different titled study tours only.

698.02 Study Tour: Foreign

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable to different titled study tours only.

699 Undergraduate Research in Teaching and Learning

Undergraduate research in areas of study related to the unit and the instructor's research agenda. 695H (honors) may be available.
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

700.01 Interprofessional Education: Seminar on Interprofessional Care

Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation. Limited to students enrolled in allied medical professions, education, law, medicine, nursing, social work, and theology. Treatment of the whole person through the analysis of the interrelated problems of actual cases.
Repeatable to a maximum of 9 cr hrs; subdivisions are not repeatable, except 700.04 which is repeatable to a maximum of 10 cr hrs. Cross-listed in EduPL and EduPAES.

700.02 Interprofessional Education: Changing Societal Values

Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation. Limited to students enrolled in allied medical professions, education, law, medicine, nursing, social work, and theology. Ethical issues of concern to the professions and arising out of advanced technology: euthanasia, enforced treatment, privacy and confidentiality, malpractice, and the social responsibility of the professions.
Repeatable to a maximum of 9 cr hrs; subdivisions are not repeatable, except 700.04 which is repeatable to a maximum of 10 cr hrs. Cross-listed in EduPL and EduPAES.

700.03 Interprofessional Education: Seminar on Ethical Issues Common to the Helping Professions

Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation. Limited to students enrolled in allied medical professions, education, law, medicine, nursing, social work, and theology. Ethical issues of concern to the professions and arising out of advanced technology: euthanasia, enforced treatment, privacy and confidentiality, malpractice, and the social responsibility of the professions.
Repeatable to a maximum of 9 cr hrs; subdivisions are not repeatable, except 700.04 which is repeatable to a maximum of 10 cr hrs. Cross-listed in EduPL and EduPAES.
700.04 Interprofessional Education: Interprofessional UGRD 3-5 Practicum in Clinical Settings
Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation. Limited to students enrolled in allied medical professions, education, law, medicine, nursing, social work, and theology. Interprofessionally explores issues in the identification and treatment of chemical dependency within the family context. Repeatable to a maximum of 9 cr hrs; subdivisions are not repeatable, except 700.04 which is repeatable to a maximum of 10 cr hrs. Cross-listed in EduPL and EduPAES.

700.05 Interprofessional Education: Interprofessional UGRD 3 Seminar in Policy Analysis
Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation. Limited to students enrolled in allied medical professions, education, law, medicine, nursing, social work, and theology. Explores interprofessionally the history, formation and implementation of public policy issues of significance to seven helping professions. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs; subdivisions are not repeatable, except 700.04 which is repeatable to a maximum of 10 cr hrs. Cross-listed in EduPL and EduPAES.

700.06 Interprofessional Education: Care of Chemically Dependent Families UGRD 3
Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation. Limited to students enrolled in allied medical professions, education, law, medicine, nursing, social work, and theology. Interprofessionally explores issues in the identification and treatment of chemical dependency within the family context. Repeatable to a maximum of 9 cr hrs; subdivisions are not repeatable, except 700.04 which is repeatable to a maximum of 10 cr hrs. Cross-listed in EduPL and EduPAES.

700.07 Interprofessional Education: Interprofessional Approaches to Child Abuse and Neglect GRAD 3
Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation. Limited to students enrolled in allied medical professions, education, law, medicine, nursing, social work, and theology. Interprofessionally explores issues in the identification, treatment, and prevention of child abuse and neglect. Prereq: Permission of instructor. Limited to 12 students each in allied medicine, education, law, medicine, nursing, psychology, social work, and theology through Columbus Cluster. Repeatable to a maximum of 9 cr hrs; subdivisions are not repeatable, except 700.04 which is repeatable to a maximum of 10 cr hrs. Cross-listed in EduPL and EduPAES.

701.07 Survey of Current Research and Trends in Education: General Student Body UGRD 3
Designed to emphasize the appraisal of recent research and its application to teaching practice and educational policy in the area of early and middle childhood education.

701.20 Survey of Current Research and Trends in Education: Middle Childhood Education UGRD 3
Designed to emphasize the appraisal of recent research and its application to teaching practice and educational policy in the area of early and middle childhood education.

701.70 Survey of Current Research and Trends in Education: Early Childhood Education UGRD 3
Designed to emphasize the appraisal of recent research and its application to teaching practice and educational policy in the area of early and middle childhood education.

702.07 Language Arts for Children Ages 3 to 9: General Student Body GRAD 3
Examination of children's oral and written language development and related theoretical understandings instrumental for teaching language arts. Prereq: Admission to Early Childhood M Ed program.

702.70 Language Arts for Children Ages 3 to 9: Early Childhood Education GRAD 3
Examination of children's oral and written language development and related theoretical understandings instrumental for teaching language arts. Prereq: Admission to Early Childhood M Ed program.

703.07 Studies in TESOL and Bilingual Education: General Student Body UGRD 3
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: Jr standing.

703.08 Studies in TESOL and Bilingual Education: M. A. Students Only GRAD 3
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.

703.09 Studies in TESOL and Bilingual Education: Ph D. Students Only GRAD 3
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.

704.07 Integration of Child Development and Learning Theories: General Student Body GRAD 3
Focus on how children's behavior and learning develop in education contexts ranging from early childhood through the adolescent years. Prereq: Admission into approved program in College of Education.

704.20 Integration of Child Development and Learning Theories: Middle Childhood Education GRAD 3
Focus on how children's behavior and learning develop in education contexts ranging from early childhood through the adolescent years. Prereq: Admission into approved program in College of Education.

704.70 Integration of Child Development and Learning Theories: Early Childhood Education GRAD 3
Focus on how children's behavior and learning develop in education contexts ranging from early childhood through the adolescent years. Prereq: Admission into approved program in College of Education.

705.07 Reading Methods for Early Childhood: General Student Body GRAD 3
Focus on the acquisition and development of reading skills in early childhood. (Pre-K-3rd grade; Prereq: New Phonics and Reading Foundations Courses.

705.70 Reading Methods for Early Childhood: Early Childhood Development GRAD 3
Focus on the acquisition and development of reading skills in early childhood. (Pre-K-3rd grade; Prereq: New Phonics and Reading Foundations Courses.

706.20 Teaching and Learning Language Arts for Middle Childhood: General Student Body GRAD 3
Focus on principles and practices for facilitating the effective development and use of oral and written language by children in grades 4-9.

706.70 Teaching and Learning Language Arts for Grades Pre K-3: General Student Body GRAD 3
Examination of instructional strategies that facilitate the teaching and learning of mathematics in grades Pre K-3.

707.07 Teaching and Learning of Mathematics in Grades Pre K-3: Early Childhood Development GRAD 3
Examination of instructional strategies that facilitate the teaching and learning of mathematics in grades Pre K-3. Prereq: Grad standing.

709.07 Teaching and Learning of Mathematics for Middle Childhood: General Student Body GRAD 3
Examination of instructional strategies that facilitate the teaching and learning of mathematics for middle childhood. Prereq: Grad standing.

709.20 Teaching and Learning of Mathematics for Middle Childhood: Middle Childhood Education GRAD 3
Examination of instructional strategies that facilitate the teaching and learning of mathematics for middle childhood. Prereq: Grad standing.

710.01 Concepts of School Mathematics: Functions GRAD 3
Organizing concepts of school mathematics, their development through the mathematics curriculum, and their role on the learning of mathematics.

711.01 Concepts of School Mathematics: Functions GRAD 3
Organizing concepts of school mathematics, their development through the mathematics curriculum, and their role on the learning of mathematics.

711.02 Concepts of School Mathematics: Equivalence GRAD 3
Organizing concepts of school mathematics, their development through the mathematics curriculum, and their role on the learning of mathematics.

711.03 Concepts of School Mathematics: Measurement, Geometry and Probability GRAD 3
Organizing concepts of school mathematics, their development through the mathematics curriculum, and their role on the learning of mathematics. Examination of instructional strategies and connected mathematical processes of measurement, geometry and probability. 12.5 hr cr. Prereq: A course in foundations of Math or concur Math 645, grad standing in Math Edu or Math or permission of instructor. Subdivisions intended to be taken in sequence. Subdivisions not repeatable.
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710.04 Concepts of School Mathematics: Number, Algebra and Data Analysis UGRD 3
Organizing concepts of school mathematics, their development through the mathematics curriculum, and their role in the learning of mathematics. Examination of instructional strategies and connected mathematical processes of number, algebra and data analysis, 1.25 hr cr. Prereq: A course in foundations of Math or concourse Math 645, grad standing in Math Education or Math, admission to Prelim-4 Math endorsement program, or permission of instructor. Subdivisions intended to be taken in sequence. Subdivisions not repeatable.

712.01 Methods of School Mathematics: Introduction to Teaching of Secondary School Mathematics UGRD 3
Examination of curriculum, instruction, and forces that influence curriculum and instruction in school mathematics, grades 7 through 12. Prereq: Grad standing in Math Edu or permission of instructor.

712.02 Methods of School Mathematics: Classroom Procedures UGRD 3
Examination of curriculum, instruction, and forces that influence curriculum and instruction in school mathematics, grades 7 through 12. Prereq: Grad standing in Math Edu or permission of instructor.

712.03 Methods of School Mathematics: Providing Effective Instruction in Mathematics UGRD 3
Examination of curriculum, instruction, and forces that influence curriculum and instruction in school mathematics, grades 7 through 12. Prereq: Grad standing in Math Edu or permission of instructor.

713.07 Teaching and Learning of Mathematics in Grades PreK-3, Part II: General Student Body UGRD 3
This course is designed to improve pre-service teachers' understanding and capacity to use national and state standards, learning theories, research based instructional methods, formative and summative assessment. Prereq: 708.07 or 708.70 and admission to ITL Early Childhood M Ed or permission of instructor.

713.70 Teaching and Learning of Mathematics in Grades PreK-3, Part II: Early Childhood Development UGRD 3
This course is designed to improve pre-service teachers' understanding and capacity to use national and state standards, learning theories, research based instructional methods, formative and summative assessment. Prereq: 708.07 or 708.70 and admission to ITL Early Childhood M Ed or permission of instructor.

714 Providing Professional Development in Mathematics Education UGRD 3
Provides participating students with guidance and opportunity to create and implement quality mathematics professional development with a focus on reflection and application. 2.16 hr cr. Prereq: Admission to the PreK-6 math specialist endorsement.

715 Integration of Science and Mathematics UGRD 3
Project-based learning that integrates science concepts, technology skills, and web-based resources to build mathematical models. Not open to students with credit for CRPlan 715. Cross-listed in City and Regional Planning.

716 Teaching and Learning Mathematics in the Middle Grades, Part II UGRD 3
Examination of instructional strategies and issues related to teaching and learning mathematics in the Middle Childhood classroom. Prereq: Admission to the MCE M.Ed. program or permission of instructor.

719 Teaching and Learning Science in the Middle Grades, Part II UGRD 3
Examination of instructional strategies and issues related to teaching and learning science in the Middle Childhood classroom. Prereq: Admission to the MCE M.Ed. program or permission of instructor.

721.01 Logic and Psychology in School Mathematics UGRD 3
A study of the nature of psychological growth and the development of logical ability in children and the implications for teaching mathematics. Prereq: Teaching experience or written permission of instructor.

721.02 Logic and Psychology in School Science UGRD 3
A study of the nature of psychological growth and the development of logical ability in children and the implications for teaching science. Prereq: Teaching experience or written permission of instructor.

721.03 Learning and Cognition in Mathematics, Science, and Technology Education UGRD 3
The learning of mathematics, science, and technology education as influenced by cognitive development and the implications of teaching in the middle grades and high school.

722 Literature Across the Curriculum UGRD 3
Non-fiction for ages 4-12 as it contributes to social studies, the sciences, language arts, and the creative arts; emphasis on identifying quality selections and planning related to learning experiences.

723.07 Early Childhood Pedagogy I: General Student Body UGRD 3
Examinations teaching and learning in pre-K through grade 3 with a focus on inclusive and diverse first through third grade settings. Prereq: 723 or 723.07 or 723.70. Open to Early Childhood M Ed students and others by permission. Pedagogy I and II are sequenced and required in the Early Childhood Teacher Education Program.

723.70 Early Childhood Pedagogy I: Early Childhood Education UGRD 3
Examinations teaching and learning in pre-K through grade 3 with a focus on inclusive and diverse first through third grade settings. Prereq: 723 or 723.07 or 723.70. Open to Early Childhood M Ed students and others by permission. Pedagogy I and II are sequenced and required in the Early Childhood Teacher Education Program.

724.07 Early Childhood Pedagogy II: General Student Body UGRD 3
Examinations teaching and learning in pre-K through grade 3 with a focus on inclusive and diverse first through third grade settings. Prereq: 723 or 723.07 or 723.70. Open to Early Childhood M Ed students and others by permission. Pedagogy I and II are sequenced and required in the Early Childhood Teacher Education Program.

724.70 Early Childhood Pedagogy II: Early Childhood Education UGRD 3
Examinations teaching and learning in pre-K through grade 3 with a focus on inclusive and diverse first through third grade settings. Prereq: 723 or 723.07 or 723.70. Open to Early Childhood M Ed students and others by permission. Pedagogy I and II are sequenced and required in the Early Childhood Teacher Education Program.

725 Teaching Advanced Foreign Language Courses UGRD 3
The teaching of language skills and aesthetic appreciation in advanced foreign language classes; emphasis on teaching interdisciplinary studies: literature, history, fine arts, music, and architecture. Prereq: At least one French or Spanish course at the 600 level.

727.10 Special Topics in Education: Elementary Education UGRD 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. This course is graded S/U.

727.20 Special Topics in Education: Middle Childhood Education UGRD 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. This course is graded S/U.

727.21 Special Topics in Education: Technology Education UGRD 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. This course is graded S/U.

727.23 Special Topics in Education: Mathematics, Science and Technology Education UGRD 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. This course is graded S/U.

727.25 Special Topics in Education: English Education UGRD 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. This course is graded S/U.

727.26 Special Topics in Education: Mathematics Education UGRD 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. This course is graded S/U.

727.27 Special Topics in Education: Science Education UGRD 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. This course is graded S/U.
Prereq: Admission to Middle Childhood M Ed program.

727.45 Special Topics in Education: Foreign and Second Language Education
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. This course is graded S/U.

727.46 Special Topics in Education: TESOL
GRAD 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. This course is graded S/U.

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. This course is graded S/U.

727.50 Special Topics in Education: Integrated Teaching and Learning
GRAD 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. This course is graded S/U.

727.52 Special Topics in Education: Visual Disabilities
GRAD 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. This course is graded S/U.

727.55 Special Topics in Education: Hearing Disabilities
GRAD 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. This course is graded S/U.

727.56 Special Topics in Education: Drama, Language, Arts, Literature and Reading Education
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. This course is graded S/U.

727.70 Special Topics in Education: Early Childhood Education
GRAD 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. This course is graded S/U.

727.99 Special Topics in Education: Language, Literacy and Culture
GRAD 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. This course is graded S/U.

729.07 Teaching and Learning of Science in Grades Pre K-3, Part I: General Student Body
GRAD 3
Exploration of contemporary alternatives in elementary science education and the development of knowledge and skills for teaching and learning in grades Pre K-3. Prereq: Grad standing.

729.70 Teaching and Learning of Science in Grades Pre K-3, Part I: Early Childhood Education
GRAD 3
Exploration of contemporary alternatives in elementary science education and the development of knowledge and skills for teaching and learning in grades Pre K-3. Prereq: Grad standing.

730.07 Teaching and Learning of Science for Middle School: General Student Body
GRAD 3
Science methods course required for preservice teachers seeking certification to teach at the middle childhood level. Prereq: Admission to Middle Childhood M Ed program.

731.20 Teaching and Learning of Science for Middle School: Middle Childhood Education
GRAD 3
Science methods course required for preservice teachers seeking certification to teach at the middle childhood level. Prereq: Admission to Middle Childhood M Ed program.

732.07 Teaching and Learning of Social Studies in Grades Pre K-3: Early Childhood Education
GRAD 3
Exploration of current theories in the teaching and learning of social studies in grades Pre K-3. Prereq: Grad standing.

732.10 Evaluation and Instructional Decision-Making in Literacy: General Student Body
GRAD 3
Evaluation processes and instructional materials useful to elementary and secondary teachers are explored as individual and small group needs. Prereq: 665. Not open to students with credit for EdTP 732.

732.20 Evaluation and Instructional Decision-Making in Literacy: Middle Childhood Education
GRAD 3
Evaluation processes and instructional materials useful to elementary and secondary teachers are explored as individual and small group needs. Prereq: 665. Not open to students with credit for EdTP 732.

732.70 Teaching and Learning of Social Studies in Grades Pre K-3: Early Childhood Education
GRAD 3
Exploration of current theories in the teaching and learning of social studies in grades Pre K-3. Prereq: Grad standing.

734.07 Teaching and Learning of Science in Grades Pre K-3, Part II: General Student Body
GRAD 3
This course will facilitate an understanding of pedagogies, research, and inquiry approaches to further meet state and national standards. Prereq: 729.07 or 729.70 and admission to ITL Early Childhood M Ed or permission of instructor.

734.70 Teaching and Learning of Science in Grades Pre K-3, Part II: Early Childhood Education
GRAD 3
This course will facilitate an understanding of pedagogies, research, and inquiry approaches to further meet state and national standards. Prereq: 729.07 or 729.70 and admission to ITL Early Childhood M Ed or permission of instructor.
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744  Sexuality and Education  \hspace{1cm} GRAD 4
Explores rights and duties of educators with respect to sexuality and considers how to make classrooms inductive to educational experience for all students.
Prereq: Grad standing. Not open to students with credit for EduPAES 744. Cross-listed in Education: Physical Activity and Educational Services.

747  Curriculum and Instructional Strategies for Students with Physical, Sensory, and Multiple Disabilities  \hspace{1cm} UGRD 3
Development and adaptation of curriculum, materials, and instructional procedures for teaching students with physical, sensory, and multiple disabilities.
Prereq: Permission of instructor.

748.01  Introduction to Teaching Mathematics, Science, and Technology  \hspace{1cm} GRAD 3
Study of educational theory and its relationship to practice with a focus on the philosophy, history, and issues in mathematics, science, and technology education.
Prereq: Admission to the M Ed program or permission of instructor.

748.02  Methods of Integrating Mathematics, Science, and Technology  \hspace{1cm} GRAD 3
Designed for middle and secondary school teachers to increase understanding of issues and trends related to middle and secondary school mathematics, science, and technology education.
Prereq: Admission to the M Ed program or permission of instructor.

748.03  Reaching All Students in Mathematics, Science, and Technology  \hspace{1cm} GRAD 3
Investigates issues of diversity, equity, management, and assessment in the teaching of integrated Mathematics, Science, and Technology Education.
Prereq: Admission to the M Ed program or permission of instructor.

749.01  Fundamental Ideas of School Mathematics I  \hspace{1cm} GRAD 3
Development and significance of concepts and processes in school mathematics and their relationship to ideas in other disciplines. Designed to increase intern pedagogical content knowledge of patterns, functions and algebra as appropriate for grades 7-12.
Au Qtr 1 3-hr d. Prereq: Admission to M Ed or permission of instructor.

749.02  Fundamental Ideas of School Mathematics II  \hspace{1cm} GRAD 3
Development and significance of concepts and processes in school mathematics and their relationship to ideas in other disciplines. Designed to increase intern pedagogical content knowledge of geometry and measurement as appropriate for grades 7-12.
Wi Qtr 1 3-hr d. Prereq: Admission to M Ed or permission of instructor.

750  Instructional Technologies Used in STEM Education  \hspace{1cm} GRAD 3
Development and significance of concepts and processes in school technology and their relationship to ideas in other disciplines.
Prereq: Admission to MSAT M Ed or permission of instructor.

751  Nature of Scientific Knowledge  \hspace{1cm} GRAD 3
Student will address the nature of science from a variety of vantage points-science, philosophical, sociological, and historical. They will consider ideas fundamental to science.
Prereq: Admission to MSAT M Ed or permission of instructor.

752  Science in the School Curriculum  \hspace{1cm} UGRD 4
Foundations for science curriculum; current development, planning, and evaluation procedures, research.
Prereq: Teaching experience or permission of instructor.

754  Introduction to American Sign Language  \hspace{1cm} UGRD 3
Introduction to the use of signs and finger spelling in American Sign Language.
Prereq: Written permission of instructor. Not open to students with credit for EDSR 738.

760.01  Educators and the Arts: The Visual Arts  \hspace{1cm} UGRD 3
Experiencing the visual arts through encounters with a variety of it's art forms and through dialogue with visual artists, readings, lectures and discussions.
\* Open to 3rd and sr undergrad students by permission of instructor. Does not substitute for ArtEduc 660. Not open to students with credit for EdPL 750.01. Repeatable to a maximum of 3 cr hrs, each subdivision repeatable to 1 cr hrs. Classes meet at various schools and educational sites with arranged visits to art galleries, museums, and artists studios, except for 760.04 (Summer Qtr) which meets at the Wexner Center. This course is graded SU.

760.02  Educators and the Arts: The Literary Arts  \hspace{1cm} UGRD 3
Experiencing the literary arts through encounters with a variety of it's art forms and through dialogue with literary artists, readings, lectures and discussions.
Open to 3rd and sr undergrad students by permission of instructor. Does not substitute for ArtEduc 660. Not open to students with credit for EdPL 750.02. Repeatable to a maximum of 15 cr hrs, each subdivision repeatable to 9 cr hrs. Classes meet at various schools and educational sites with arranged visits to art galleries, museums, and artists studios, except for 760.04 (Summer Qtr) which meets at the Wexner Center. This course is graded SU.

760.03  Educators and the Arts: The Performing Arts  \hspace{1cm} UGRD 3
Experiencing performances in dance, music, theatre, and encounters and dialogue with performing artists, composers, choreographers, and directors.
Open to 3rd and sr undergrad students by permission of instructor. Does not substitute for ArtEduc 660. Not open to students with credit for EdPL 750.03. Repeatable to a maximum of 15 cr hrs, each subdivision repeatable to 9 cr hrs. Classes meet at various schools and educational sites with arranged visits to art galleries, museums, and artists studios, except for 760.04 (Summer Qtr) which meets at the Wexner Center. This course is graded SU.

760.04  Educators and the Arts: Professional Development and the Arts  \hspace{1cm} UGRD 3
Exploration of a selected theme linking teaching, learning, and the arts.
A 1 week intensive 8-hr cr each day. Open to jr and sr undergrad students by permission of instructor. Does not substitute for ArtEduc 660. Not open to students with credit for EdPL 750.04. Repeatable to a maximum of 15 cr hrs, each subdivision repeatable to 9 cr hrs. Classer meet at various schools and educational sites with arranged visits to art galleries, museums, and artists studios, except for 760.04 (Summer Qtr) which meets at the Wexner Center. Five-day intensive class (between Spring and Summer Qtrs) meeting at the Wexner Center. This course is graded SU.

761.01  Somatic Studies: Experiencing the Somatic through Movement Theory and Practice  \hspace{1cm} UGRD 3
A series of courses focusing on mind/body integration issues and the meaning of the movement experience in education and the culture at large. Considerations of the moving person through elementary description, analysis, posture, style, and technique.
Not open to students with credit for EdPL 706.01.

761.02  Somatic Studies: Movement, Observation, Description and Somatic Awareness  \hspace{1cm} UGRD 3
A series of courses focusing on mind/body integration issues and the meaning of the movement experience in education and the culture at large. The use of the effort/space vocabulary and its relationship to movement observation, description and somatic awareness.
Prereq: 200 or equiv. Not open to students with credit for EdPL 706.02.

761.03  Somatic Studies: Conceptions of the Body in Western Culture  \hspace{1cm} UGRD 5
A series of courses focusing on mind/body integration issues and the meaning of the movement experience in education and the culture at large. Traditional concepts of the body, which have influenced contemporary educational theory and practice.
Not open to students with credit for EdPL 706.03.

761.04  Somatic Studies: Human Movement Theory  \hspace{1cm} GRAD 3
A series of courses focusing on mind/body integration issues and the meaning of the movement experience in education and the culture at large. Study of several theoretical considerations of human movement and their implications for eastern and western cultural movement forms.
Not open to students with credit for EdPL 706.04.

761.05  Somatic Studies: Eastern Movement Forms: Cross Cultural Implications  \hspace{1cm} UGRD 3
A series of courses focusing on mind/body integration issues and the meaning of the movement experience in education and the culture at large. Examination of the theoretical foundations upon which Eastern movement and martial arts forms are based. Practice opportunities in one or more of these forms are scheduled.
* Not open to students with credit for EdPL 706.05.

766  Trends, Issues, and Technological Developments in Teaching Visually Handicapped Students  \hspace{1cm} UGRD 3
Study of technological research and vocational implications for visually handicapped students; development of basic skills for teaching use of audio, visual, and tactual aids.

772  Teaching Science in College  \hspace{1cm} UGRD 4
An examination of college Bachelor's degree, teacher's certificate, and teaching science curricula: teaching methods; student course evaluation techniques; objectives and rationale for teaching science in general education and teacher education programs.
Prereq: Teaching experience or permission of instructor.

777  Teaching and Learning Social Studies with Imagination  \hspace{1cm} UGRD 3
Using social imagination in social studies education. Repeatable to a maximum of 6 cr hrs.

800.07  Issues in Language, Literacy and Culture: General Student Body  \hspace{1cm} UGRD 3
Introduces M Ed students in Language, Literacy, and Culture to key issues underlying their fields of study.
Prereq: Admission to LLC M Ed program.

800.99  Issues in Language, Literacy and Culture: Language, Literacy and Culture  \hspace{1cm} UGRD 3
Introduces M Ed students in Language, Literacy, and Culture to key issues underlying their fields of study.
Prereq: Admission to LLC M Ed program.

802.01  Processes of School Mathematics: Representations  \hspace{1cm} GRAD 2-5
Processes of school mathematics, their development through the mathematics curriculum, and their role in the teaching and learning of mathematics.
Prereq: Grad standing in Math Edu or Math, or permission of instructor.

802.02  Processes of School Mathematics: Examples and Nonexamples  \hspace{1cm} GRAD 2-5
Processes of school mathematics, their development through the mathematics curriculum, and their role in the teaching and learning of mathematics.
Prereq: Grad standing in Math Edu or Math, or permission of instructor.
802.03 Processes of School Mathematics: Axiomatics GRAD 2-5
Processes of school mathematics, their development through the mathematics curriculum, and their role in the teaching and learning of mathematics.
Prereq: Grad standing in Math Edu or Math, or permission of instructor.

802.04 Processes of School Mathematics: Problem Solving GRAD 2-5
Processes of school mathematics, their development through the mathematics curriculum, and their role in the teaching and learning of mathematics.
Prereq: Grad standing in Math Edu or Math, or permission of instructor.

802.05 Processes of School Mathematics: Experimentation GRAD 2-5
Processes of school mathematics, their development through the mathematics curriculum, and their role in the teaching and learning of mathematics.
Prereq: Grad standing in Math Edu or Math, or permission of instructor.

802.06 Processes of School Mathematics: Exposition GRAD 2-5
Processes of school mathematics, their development through the mathematics curriculum, and their role in the teaching and learning of mathematics.
Prereq: Grad standing in Math Edu or Math, or permission of instructor.

803 Language and Society GRAD 3
Focus on the history, sociology, and the politics of national policies involving second language throughout the world.

804 Trends and Issues in Language, Literacy, and Culture GRAD 3
Current issues such as national standards, multiple literacies, and phonics vs whole language.
Prereq: Grad standing. Required core course for LLC MA program of studies.

805 Global Education: Social Economic Perspectives GRAD 3
Emphasizes the economic education aspects of global education in global issues, instruction, curriculum, and materials, and the contribution of economic perspectives to global education.
Prereq: Grad standing.

806 Curriculum Evaluation K-12 Reading Programs GRAD 3
Application of research, diagnostic, and program and curriculum development in field settings. School-wide evaluation of reading/language arts curricula.
Prereq: Grad standing.

807 Teaching About Africans and African Perspectives in K-12 Classrooms GRAD 3
Methods and materials for teaching about African cultures, history and contemporary life through African perspectives and cross-cultural experiential learning.

808 Research in Multicultural & Global Education GRAD 3
Review of research literature in multicultural and global education.
Prereq: 801 and 878.

809.07 Inclusion: Philosophical, Social, and Practice Issues: General Student Body GRAD 3
Philosophical, social, and practice issues related to the inclusion of students with special needs in the P-12 general education classroom.
Prereq: Grad standing.

809.20 Inclusion: Philosophical, Social, and Practice Issues: Middle Childhood Education GRAD 3
Philosophical, social, and practice issues related to the inclusion of students with special needs in the P-12 general education classroom.
Prereq: Grad standing.

809.70 Inclusion: Philosophical, Social, and Practice Issues: Early Childhood Education GRAD 3
Philosophical, social, and practice issues related to the inclusion of students with special needs in the P-12 general education classroom.
Prereq: Grad standing.

810.07 Classroom Communities and Issues of Guidance: General Student Body GRAD 3
A classroom as communities framework to support teaching and learning and issues of guidance.
Required in Early Childhood M Ed and open by permission to other students.

810.70 Classroom Communities and Issues of Guidance: Early Childhood Education GRAD 3
A classroom as communities framework to support teaching and learning and issues of guidance.
Required in Early Childhood M Ed and open by permission to other students.

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811 Science in Elementary Education GRAD 3
Problems of elementary school science instruction with emphasis on pertinent literature and classroom implementation of current developments in science curriculum and methodology.

812 Mathematics in Elementary Schools GRAD 3
Applications of research and theory to improve children's competence and problem solving; organization of instructional programs and contemporary instructional questions.

814 Social Studies in the Elementary School GRAD 3
The educational values of social studies, reasons for and ways and means of integrating the social sciences with emphasis upon program innovations and research.

815.07 The Changing Context in Equity, Diversity, and Exceptionality: General Student Body GRAD 3
Examination of how attitudes, assumptions, and expectations within socially diverse classrooms influence the behaviors of educators, parents, and pupils. Case method: Analyzing experiences of teachers.
Prereq: Permission of instructor.

815.20 The Changing Context in Equity, Diversity, and Exceptionality: Middle Childhood Education GRAD 3
Examination of how attitudes, assumptions, and expectations within socially diverse classrooms influence the behaviors of educators, parents, and pupils. Case method: Analyzing experiences of teachers.
Prereq: Permission of instructor.

815.99 The Changing Context in Equity, Diversity, and Exceptionality: Language, Literacy and Culture GRAD 3
Examination of how attitudes, assumptions, and expectations within socially diverse classrooms influence the behaviors of educators, parents, and pupils. Case method: Analyzing experiences of teachers.
Prereq: Permission of instructor.

816 Language Arts in the Elementary School GRAD 3
Problems, research, and current methods of teaching the four major areas of the language arts in the elementary school; listening, speaking, reading, and writing.

817 Advanced Course in Children's Literature GRAD 3
An evaluation of the changing role and increased importance of literature in the education of children and youth.

818.07 Foundations of Education: General Student Body GRAD 3
Study of phenomena that undergird or bear on practice in education; topics include the family, learners, teachers and teaching, and schooling.

818.20 Foundations of Education: Middle Childhood Education GRAD 3
Study of phenomena that undergird or bear on practice in education; topics include the family, learners, teachers and teaching, and schooling.

818.70 Foundations of Education: Early Childhood Education GRAD 3
Study of phenomena that undergird or bear on practice in education; topics include the family, learners, teachers and teaching, and schooling.

820 Developing Early Communication of Children with Physical, Sensory, and Multiple Disabilities GRAD 3
Knowledge and techniques about functional communication and language acquisition for young children and youth with severe language problems.
Prereq: Permission of instructor. Not open to students with credit for EdSR 821.

821.07 School Issues Related to Growth, Development, and Learning: General Student Body GRAD 3
Advanced study based upon research in education and related fields that aid the teacher in guiding developmental activities in P-12 classrooms.

821.45 School Issues Related to Growth, Development, and Learning: Foreign Language Education GRAD 3
Advanced study based upon research in education and related fields that aid the teacher in guiding developmental activities in P-12 classrooms.

821.99 School Issues Related to Growth, Development, and Learning: Language, Literacy and Culture GRAD 3
Advanced study based upon research in education and related fields that aid the teacher in guiding developmental activities in P-12 classrooms.

822 Developing Language Competence of Students with Hearing Disabilities GRAD 3
Study of language competence of children with hearing disabilities.
Prereq: 680 or equiv or permission of instructor.
### 168 Education: Teaching and Learning

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### Course Descriptions

- **Creative Experiences in the Elementary School Curriculum**: Study of the nature of creativity and aesthetics as related to the elementary school curriculum.
- **Designing School Programs for Children Age Two to Six**: A study of the characteristics and needs of children two to six years of age as they relate to the development of educational programs.
- **Methods of Developing Language and Cognition in Early Childhood**: Components of vision, anatomy, and physiology of the eye; causes of impaired vision, educational implications of eye disorders, and interpretation of eye specialists' reports.
- **Visual Process and Educational Implications of Visual Disabilities**: Theory on critical analysis of children from birth to five years of age.
- **Advanced Study in the Teaching of Developmental Reading**: Designed to provide experienced teachers the opportunity to extend and update their knowledge of the reading process and the principles underlying effective reading instruction. Prereq: 665.
- **Trends and Issues in Teaching Reading in the Elementary School**: Designed for experienced teachers and curriculum workers; current developments, trends, and issues critically analyzed according to available research evidence.
- **Problems in Elementary School Curriculum and Supervision**: An analysis of the programs and practices involved in facing major curriculum problems in the elementary schools; synthesis of supervision and curriculum.
- **Early Childhood Education: Multi-Cultural Influences**: A study of early childhood curriculum content and teaching methods as influenced by multicultural factors.
- **Reading for Students with Hearing Disabilities**: Examination of reading theories, research, and implications for students with hearing disabilities 1 3-hr cl. Prereq: 822, or its equiv, or permission of instructor.
- **Advanced Studies in Deafness**: Cognitive and psychosocial theories, research, and implications for students with hearing disabilities. Prereq: 754 or equiv, or written permission of instructor. Not open to students with credit for ED824.
- **Reading and Writing Skills for Teachers of Low Vision and Blind Children**: Modes of written communication for low vision and blind children, focusing on mastery of Grade 2 literary braille for initial reading instruction. Prereq: 870 or equiv, and permission of instructor. Not open to students with credit for ED824.
- **Modes of Communication and Instructional Materials for Students with Visual Disabilities**: Continuation of modes of communication with focus on mastery of Nemeth Code for science and math notation. Prereq: 833. Not open to students with credit for ED824.
- **Research in Technology Education**: Identification of research problems and needs; review of research exemplars with critical analysis of research design and procedures. Prereq: EDPL 785 or 786, or permission of instructor.
- **Learning Styles**: Education dimensions of learning styles in children and adults related to developmental, neurological, social, and environmental substrates of learning. Prereq: Previous teaching experience or permission of instructor. Open to grad students in any field of specialization in education.
- **Evaluation in Elementary Schools**: Appraisal of materials and methods in terms of educational aims and research findings; consideration of instruments and procedures for comparing achievements with established objectives.
- **Writing in the Elementary School**: Study of the implications from recent research and theory in language learning and use in respect to writing, spelling, handwriting, and grammar.
- **Poetry for Children**: An in-depth study of poetry for children including children's interest in poetry, forms of poetry, and representative poets; classroom approaches for encouraging children's involvement and appreciation of poetry.
- **Diverse Approaches to Educational Research on Teaching and Learning**: 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. Not open to students with credit for EDTP 826.
- **Literature for Middle Childhood**: Analysis and study of fiction for children ages 8-12; emphasis on literary quality, strategies for classroom use, and relevant issues.
- **Bilingualism and Biliteracy**: Explores sociolinguistic and ethnolinguistic research in multilingual settings with an emphasis on bilingualism and bi/multilingual communities. Sp Qtr.
- **Educating English Learners in K-12 Contexts**: This course is intended to help both practicing and prospective teachers to provide appropriate learning opportunities for English Language Learners (ELLs) in grades K-12. Su Qtr.
- **Development of Technology Education**: Vocational Education Programs for Special Needs and Culturally D
- **Linguistic Structure of ASL and Its Application to ASL Instruction I**: To develop a basic understanding of the linguistic structure of ASL and how this understanding can be applied to ASL teaching. Au Qtr. 1 2.5-hr cl. Taught in American Sign Language.
- **Understanding Preschool Play**: A study of relevant theories, developmental stages, and research as they relate to developing programs for young children. Prereq: FMH601 332 or 662, or permission of instructor.
- **Observing and Facilitating Preschool Play**: Continuation of 848; extensive analysis of experiences in facilitating preschool play and clinical experience regarding the play of young children. 1 3-hr cl or field experience. Prereq: 848 or equiv with written permission of instructor.
- **STEM Education through Context Community and Culture**: Designed for middle and secondary school STEM Education teachers to acquire knowledge, skills, and dispositions to integrate these disciplines through contextual, community, and cultured factors. Wi Qtr. Repeatable to a maximum of 6 cr hrs.
- **Language Use in the Deaf Community**: To understand how the language is used in the deaf community. To understand bilingualism, language variation and attitude. Au Qtr. 1 2.5-hr cl. Taught in American Sign Language.
- **Science and Early Childhood Education**: The nature, scope, and role of science experiences in the learning and development of young children; integration and application of current developments; theory and research in science with early childhood education.
- **Critical Reading in the Content Fields: General Student Body**: Exploration of the problems of developing critical reading ability in a variety of curricular fields.
- **Critical Reading in the Content Fields: Middle Childhood Education**: Exploration of the problems of developing critical reading ability in a variety of curricular fields.
- **Critical Reading in the Content Fields: Early Childhood Education**: Exploration of the problems of developing critical reading ability in a variety of curricular fields.
- **Reading in Its Social Setting: General Student Body**: The influence of culture on the nature, quality, and quantity of reading development; the relationship of reading to language development and mass media.
- **Reading in Its Social Setting: Middle Childhood Education**: The influence of culture on the nature, quality, and quantity of reading development; the relationship of reading to language development and mass media.
- **Reading in Its Social Setting: Early Childhood Education**: The influence of culture on the nature, quality, and quantity of reading development; the relationship of reading to language development and mass media.
Enables preservice teachers to engage in discipline-specific teacher research as a means for reflective inquiry as part of teaching. Limited to students enrolled in LLC M Ed program. Enables preservice teachers to engage in discipline-specific teacher research as a means for reflecting on practice.

865.45 Reflective Inquiry on Pedagogy with Prospective Teachers: Foreign Language Education

Prepares prospective teachers to bring an inquiry orientation to their practice and to see reflective inquiry as part of teaching. Limited to students enrolled in LLC M Ed program. Enables preservice teachers to engage in discipline-specific teacher research as a means for reflecting on practice.

865.52 Reflective Inquiry on Pedagogy with Prospective Teachers: Visual Disabilities

Prepares prospective teachers to bring an inquiry orientation to their practice and to see reflective inquiry as part of teaching. Limited to students enrolled in LLC M Ed program. Enables preservice teachers to engage in discipline-specific teacher research as a means for reflecting on practice.

865.55 Reflective Inquiry on Pedagogy with Prospective Teachers: Hearing Disabilities

Prepares prospective teachers to bring an inquiry orientation to their practice and to see reflective inquiry as part of teaching. Limited to students enrolled in LLC M Ed program. Enables preservice teachers to engage in discipline-specific teacher research as a means for reflecting on practice.

865.56 Reflective Inquiry on Pedagogy with Prospective Teachers: Drama, Language Arts, Lit and Reading

Prepares prospective teachers to bring an inquiry orientation to their practice and to see reflective inquiry as part of teaching. Limited to students enrolled in LLC M Ed program. Enables preservice teachers to engage in discipline-specific teacher research as a means for reflecting on practice.

865.70 Reflective Inquiry on Pedagogy with Prospective Teachers: Early Childhood Education

Prepares prospective teachers to bring an inquiry orientation to their practice and to see reflective inquiry as part of teaching. Limited to students enrolled in LLC M Ed program. Enables preservice teachers to engage in discipline-specific teacher research as a means for reflecting on practice.

867 Reading Gender in Education

Course explores the ways in which gender impacts reading in an effort to better serve students through research and teaching.

868 Developing Syllabi for Second-Language Programs

Focus on various models currently available to second language teachers for syllabus design, development, and evaluation.

869 Children's Social Development and the Social World of the Classroom

Exploration of social growth and social experiences of children, with educational emphasis on the social dimensions of learning and classroom practice.

870 Graduate Studies in Integrated Teaching and Learning

Designed to introduce the study of integrated teaching and learning, familiarize students with scholars in this field and assist students in planning their masters program.

871 Diverse Theories of Teaching and Learning

Emphasis on intellectual development, preschool through adolescence, focusing on educational implications and classroom practice.

872 Approaches to Integrated Curriculum in Pre K-12 Classrooms

Critical review and application of theories, research, and practices related to integrated curriculum approaches in early childhood, elementary and middle school classrooms.
Education: Teaching and Learning

873  Popular Culture and the Teaching of English  GRAD  3  
Analysis of the role of mass media/popular culture in our society; values and themes in popular culture; development of critical skills to analyze popular culture.

874  Classroom Based Inquiry in Integrated Teaching and Learning  GRAD  3  
Classroom based inquiry strategies considering the literature on classroom based research, models, historical perspectives, ethical questions, and implications for teaching practice.

875  Teaching Evolution in Schools  GRAD  3  
Evolution education, issues, court decisions, instructional guidelines and responding to public assistance.

876  Science, Mathematics, Technology and the Educated Mind  GRAD  3  
Scientific literacy, numeracy, technological literacy, societal issues and implications for education.

877  The Nature of Science and Implications for Teaching  GRAD  3  
History, sociology and epistemology of science and implications for teaching science.

878  Infusing Global Perspectives in Education  GRAD  3  
Rationales, conceptualizations, and strategies for infusing global perspectives in education.

879  Teaching for Diversity and Social Justice  GRAD  3  
An exploration into economic, political, technological and ecological components of multicultural education as it relates to diversity and social justice.

880  A Proficiency Experience at the Zoo  GRAD  3  
Utilizes a wealth of resources at the zoo to increase content teaching strategies for teaching in the area of science education. Includes inquiry and hands-on activities.

881  Multicultural and Global Perspectives in Teaching and Learning  
Examines theories, practices, and resources for teaching and for cultural diversity and equity in an interconnected world.

882  Materials and Methods in the Social Studies  GRAD  3  
Study of recent innovations in teaching methodology in the social studies; review and evaluation of recently published teaching materials.

883  Teaching World Cultures and Global Issues in P-12 Classrooms  GRAD  3  
Prepares teachers to use online and other resources to teach world cultures and global issues from multiple perspectives. Taught online. This online course requires access to the Internet, an e-mail program and skills in using e-mail and the WWW. This is a distance learning course.

884.02 Planned Field Experience: Foreign  GRAD 1-20  
Planned field experience under supervision in a P-12 classroom.
Prereq: Written permission of area adviser. Repeatable to a maximum of 25 cr hrs. This course is graded S/U.

884.10 Planned Field Experience: Elementary Education  GRAD 1-20  
Planned field experience under supervision in a P-12 classroom.
Prereq: Written permission of area adviser. Repeatable to a maximum of 25 cr hrs. This course is graded S/U.

884.20 Planned Field Experience: Middle Childhood Education  GRAD 1-20  
Planned field experience under supervision in a P-12 classroom.
Prereq: Written permission of area adviser. Repeatable to a maximum of 25 cr hrs. This course is graded S/U.

884.21 Planned Field Experience: Technology Education  GRAD 1-20  
Planned field experience under supervision in a P-12 classroom.
Prereq: Written permission of area adviser. Repeatable to a maximum of 25 cr hrs.

884.23 Planned Field Experience: Mathematics, Science and Technology Education  GRAD 1-20  
Planned field experience under supervision in a P-12 classroom.
Prereq: Written permission of area adviser. Repeatable to a maximum of 25 cr hrs.

884.25 Planned Field Experience: English Education  GRAD 1-20  
Planned field experience under supervision in a P-12 classroom.
Prereq: Written permission of area adviser. Not open to non-M Ed students. Repeatable to a maximum of 25 cr hrs. This course is graded S/U.

884.26 Planned Field Experience: Mathematics Education  GRAD 1-20  
Planned field experience under supervision in a P-12 classroom.
Prereq: Written permission of area adviser. Repeatable to a maximum of 25 cr hrs.

884.27 Planned Field Experience: Science Education  GRAD 1-20  
Planned field experience under supervision in a P-12 classroom.
Prereq: Written permission of area adviser. Repeatable to a maximum of 25 cr hrs.

884.28 Planned Field Experience: Social Studies and Global Education  GRAD 1-20  
Planned field experience under supervision in a P-12 classroom.
Prereq: Written permission of area adviser. Repeatable to a maximum of 25 cr hrs.

884.44 Planned Field Experience: Elementary Foreign Language Education  GRAD 1-20  
Planned field experience under supervision in a P-12 classroom.
Prereq: Written permission of area adviser. Repeatable to a maximum of 25 cr hrs.

884.45 Planned Field Experience: Secondary Foreign Language Education  GRAD 1-20  
Planned field experience under supervision in a P-12 classroom.
Prereq: Written permission of area adviser. Repeatable to a maximum of 25 cr hrs.

884.46 Planned Field Experience: TESOL  GRAD 1-20  
Planned field experience under supervision in a P-12 classroom.
Prereq: Written permission of area adviser. Repeatable to a maximum of 25 cr hrs.

884.52 Planned Field Experience: Visual Disabilities  GRAD 1-20  
Planned field experience under supervision in a P-12 classroom.
Prereq: Written permission of area adviser. Repeatable to a maximum of 25 cr hrs. This course is graded S/U.

884.55 Planned Field Experience: Hearing Disabilities  GRAD 1-20  
Planned field experience under supervision in a P-12 classroom.
Prereq: Written permission of area adviser. Repeatable to a maximum of 25 cr hrs. This course is graded S/U.

884.56 Planned Field Experience: Drama, Language Arts, Literature and Reading Education  GRAD 1-20  
Planned field experience under supervision in a P-12 classroom.
Prereq: Written permission of area adviser. Repeatable to a maximum of 25 cr hrs. This course is graded S/U.

884.70 Planned Field Experience: Early Childhood Education  GRAD 1-20  
Planned field experience under supervision in a P-12 classroom.
Prereq: Written permission of area adviser. Repeatable to a maximum of 25 cr hrs. This course is graded S/U.

884.99 Planned Field Experience: Language, Literacy & Culture  GRAD 1-20  
Planned field experience under supervision in a P-12 classroom.
Prereq: Written permission of area adviser. Repeatable to a maximum of 25 cr hrs. This course is graded S/U.

885.20 Supervised Student Teaching Internship: Middle Childhood Education  GRAD 5-15  
Student teaching internship in a P-12 classroom where students assume major teaching responsibilities under the guidance of a cooperating teacher and university supervisor.
Prereq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.

885.21 Supervised Student Teaching Internship: Technology Education  GRAD 5-15  
Student teaching internship in a P-12 classroom where students assume major teaching responsibilities under the guidance of a cooperating teacher and university supervisor.
Prereq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.

885.23 Supervised Student Teaching Internship: Mathematics, Science and Technology Education  GRAD 5-15  
Student teaching internship in a P-12 classroom where students assume major teaching responsibilities under the guidance of a cooperating teacher and university supervisor.
Prereq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.

885.25 Supervised Student Teaching Internship: English Education  GRAD 5-15  
Student teaching internship in a P-12 classroom where students assume major teaching responsibilities under the guidance of a cooperating teacher and university supervisor.
Prereq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.

885.26 Supervised Student Teaching Internship: Mathematics Education  GRAD 5-15  
Student teaching internship in a P-12 classroom where students assume major teaching responsibilities under the guidance of a cooperating teacher and university supervisor.
Prereq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.

885.27 Supervised Student Teaching Internship: Science Education  GRAD 5-15  
Student teaching internship in a P-12 classroom where students assume major teaching responsibilities under the guidance of a cooperating teacher and university supervisor.
Prereq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.
Prereq: Open to M. Ed Students only. Repeatable to a maximum of 15 cr hrs.

Seminar held in conjunction with field experience or student teaching internship. The goals are to process, reflect upon and enhance benefits of the school experiences. Prereq: Open to M. Ed Students only. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

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887.50 Advanced Field Experience: Integrated Education
Teaching and Learning
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 25 cr hrs. This course is graded S/U.

887.52 Advanced Field Experience: Visual Disabilities
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 25 cr hrs. This course is graded S/U.

887.55 Advanced Field Experience: Hearing Disabilities
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 25 cr hrs. This course is graded S/U.

887.56 Advanced Field Experience: Drama, Language Arts, Literature and Reading
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 25 cr hrs. This course is graded S/U.

887.70 Advanced Field Experience: Early Childhood Education
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 25 cr hrs. This course is graded S/U.

888 Advanced Studies in Teaching and Learning with Drama
Advanced drama education theoretical principles, activities, and strategies.
Prereq: 777. Repeatable to a maximum of 6 cr hrs.

892 Teaching Multimodal Composition: Advanced Summer Institute
Students learn how to compose & explore ideas and experiences in a range of modalities using photo editing software and hardware.
Su Qtr.

893.10 Advanced Individual Studies: Elementary Education
Elementary Education.
Prereq: Permission of instructor. For thesis option, not more than 15 cr hrs of any 693 and/or 893 will apply toward the master's degree. For non-thesis option, not more than 20 cr hrs will apply. Not more than 30 cr hrs will apply toward the doctoral degree. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

893.20 Advanced Individual Studies: Middle Childhood Education
Middle Childhood Education.
Prereq: Permission of instructor. For thesis option, not more than 15 cr hrs of any 693 and/or 893 will apply toward the master's degree. For non-thesis option, not more than 20 cr hrs will apply. Not more than 30 cr hrs will apply toward the doctoral degree. This course is graded S/U. Repeatable.

893.21 Advanced Individual Studies: Technology Education
Technology Education.
Prereq: Permission of instructor. For thesis option, not more than 15 cr hrs of any 693 and/or 893 will apply toward the master's degree. For non-thesis option, not more than 20 cr hrs will apply. Not more than 30 cr hrs will apply toward the doctoral degree. This course is graded S/U. Repeatable.

893.23 Advanced Individual Studies: Mathematics, Science and Technology Education
Mathematics, Science and Technology Education.
Prereq: Permission of instructor. For thesis option, not more than 15 cr hrs of any 693 and/or 893 will apply toward the master's degree. For non-thesis option, not more than 20 cr hrs will apply. Not more than 30 cr hrs will apply toward the doctoral degree. This course is graded S/U Repeatable.

893.25 Advanced Individual Studies: English Education
English Education.
Prereq: Permission of instructor. For thesis option, not more than 15 cr hrs of any 693 and/or 893 will apply toward the master's degree. For non-thesis option, not more than 20 cr hrs will apply. Not more than 30 cr hrs will apply toward the doctoral degree. This course is graded S/U Repeatable.

893.26 Advanced Individual Studies: Mathematics Education
Mathematics Education.
Prereq: Permission of instructor. For thesis option, not more than 15 cr hrs of any 693 and/or 893 will apply toward the master's degree. For non-thesis option, not more than 20 cr hrs will apply. Not more than 30 cr hrs will apply toward the doctoral degree. This course is graded S/U Repeatable to a maximum of 30 cr hrs.

893.27 Advanced Individual Studies: Science Education
Science Education.
Prereq: Permission of instructor. For thesis option, not more than 15 cr hrs of any 693 and/or 893 will apply toward the master's degree. For non-thesis option, not more than 20 cr hrs will apply. Not more than 30 cr hrs will apply toward the doctoral degree. This course is graded S/U Repeatable.

893.28 Advanced Individual Studies: Social Studies Education
Social Studies Education.
Prereq: Permission of instructor. For thesis option, not more than 15 cr hrs of any 693 and/or 893 will apply toward the master's degree. For non-thesis option, not more than 20 cr hrs will apply. Not more than 30 cr hrs will apply toward the doctoral degree. Repeatable. This course is graded S/U.

893.45 Advanced Individual Studies: Foreign and Second Language Education
Foreign and Second Language Education.
Prereq: Permission of instructor. For thesis option, not more than 15 cr hrs of any 693 and/or 893 will apply toward the master's degree. For non-thesis option, not more than 20 cr hrs will apply. Not more than 30 cr hrs will apply toward the doctoral degree. Repeatable. This course is graded S/U.

893.46 Advanced Individual Studies: TESOL
TESOL.
Prereq: Permission of instructor. For thesis option, not more than 15 cr hrs of any 693 and/or 893 will apply toward the master's degree. For non-thesis option, not more than 20 cr hrs will apply. Not more than 30 cr hrs will apply toward the doctoral degree. Repeatable. This course is graded S/U.

893.49 Advanced Individual Studies: Language, Literacy and Culture
Language, Literacy and Culture.
Prereq: Permission of instructor. For thesis option, not more than 15 cr hrs of any 693 and/or 893 will apply toward the master's degree. For non-thesis option, not more than 20 cr hrs will apply. Not more than 30 cr hrs will apply toward the doctoral degree. Repeatable. This course is graded S/U.

894.10 Advanced Group Studies: Elementary Education
Advanced group studies on special problems in education. Elementary Education.
Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

894.20 Advanced Group Studies: Middle Childhood Education
Advanced group studies on special problems in education: Middle Childhood Education.
Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.
Education: Teaching and Learning  

901  Changing Perspectives in Language, Literacy, and Culture  
Introductory seminar highlights interdisciplinary nature of studies in language, literacy, and culture and provides historical perspective for theoretical shifts that influence research and teaching.  
Prereq: Admission to LLC PhD program.  

902  Multiple Literacies, Technology, and Communities of Learning  
Applies various theoretical perspectives and research tools to explore multiple literacy and technology uses in relationship to community development in different settings.  
Prereq: 901. Limited to doctoral students. Active e-mail account required.  

903  Teaching/Learning in Language, Literacy, and Culture  
Examines constructivist and sociocultural theories and approaches to teaching and learning. Epistemological roots, historical perspectives and approaches underlying these theories will be examined.  
Prereq: 901.  

904  Alternative Paradigms for Global Education  
Analysis of the educational implications of basic concepts and propositions about the world derived from alternative approaches to the study of international relations.  
Prereq: Grad standing.  

905  Research Methodologies in Language, Literacy, and Culture  
Examines recent research in the areas of language, literacy, and culture through a variety of lenses—epistemological, cultural, conceptual and ethical.  
Prereq: EduPL 785 and 850; and admission to LLC PhD program.  

906  Language Learning Across Cultures  
Sociocultural research and theories of first and second language learners; learning of language and literacy across cultures.  
Prereq: 901, 902, 903. One in a number of general section courses in LLC PhD that provides generic frameworks for courses within the PhD program.  

907  History of Children's and Adolescent Literature  
A seminar focusing on the history of English and American children's and young adult's literature from earliest times to the present century.  
Prereq: 917; grad standing.  

908  The Development of Literary Understanding  
Provides background knowledge of the seminal research on children's literary understanding and the theories and perspectives that inform that research.  
Prereq: Admission to LLC PhD program or by permission.  

909  History of Theory and Practice in Literacy  
Explores the historical bases of current literacy practices and theoretical perspectives. Examines cultural and political ideologies that have influenced theory, research and instructional practice.  

910  Creating Effective Contexts for Literacy Learning and Teaching  
Designed to examine the role of social context in cognitive development and theories of learning/teaching and relate them to literacy development in preschool-grade 12.  

911  Research in Emergent Literacy  
Focus on interpreting new research studies in emergent literacy in light of current research. Limited to Advanced MA or PhD students in LLC.  

912  Research in Writing Development and Instruction for Children  
Examination and critical analysis of research on children's writing development and on writing instruction in schools. Limited to Advanced MA or PhD students in LLC.  

913  Research and Theory in Written Composition  
Explores the development of composition as an academic field and how research and theory might shape teaching.  
Prereq: Admission to grad program in LLC.  

914  Writing and Learning Across the Curriculum  
Explores research and theory that explains when, why, and how writing can shape thinking and reasoning in the content areas.  
Prereq: Admission to grad program in LLC.  

915  Drama in Language, Literacy, and Culture  
Current educational assumptions about language, literacy, and culture are examined and critiqued through the lens of drama education pedagogy.  

916  Classroom-Oriented Second Language Research  
Classroom research investigates the processes of teaching and learning as they occur in language classrooms.  
Prereq: 703.
Education: Teaching and Learning

917 Issues in Communicative Language Teaching GRAD 3
Lecture and discussion course focused on current issues related to second language acquisition research. Prereq: 703, 968.

918 Synthesizing Research in Reading & Literacy GRAD 3
Students will be able to critically evaluate research studies in reading and literacy on the grounds of logic, method, and significance and quality of argument. Sp Qtr.

920 Advanced Concepts in Elementary School Science Education GRAD 3
Emphasis on functions of leadership personnel in developing and improving elementary school science programs and on evaluation of current developments and research. Prereq: 911 or permission of instructor.

921 A Guided Survey of Research in Reading GRAD 3
Designed to provide acquaintance with scientific studies relating to reading, methods used, results attained, including implications and limitations, and the problems met in further investigation. Prereq: 6 cr hrs in grad reading courses. Repeatable to a maximum of 6 cr hrs.

922 Writing Research Proposals in Language, Literacy, and Culture GRAD 3
Designed to acquaint PhD students with the practical and conceptual skills needed to design and write research proposals. Prereq: Educ 785 or 786. Repeatable to a maximum of 6 cr hrs.

923 Literary Theory and Adolescent Literature GRAD 3
Explores the use of young adult literature for in-depth literary study in secondary classrooms. Prereq: Admission to LLC PhD program. Designed for students in Language, Literacy, and Culture, particularly those with a focus on English Education or children's literature.

924 Foreign and Second Language Teacher Education GRAD 3
Foreign and second language teachers will develop a theoretical framework and study critical issues that impact the life-long development of pre- and in-service teachers.

925.10 Advanced Seminar: Language Education and Society GRAD 2-5
Advanced graduate seminars focusing on educational scholarship related to each subject. Research problems: Language, education and society. Prereq: Permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times. Repeatable.

925.20 Advanced Seminar: Multicultural and Equity Studies in Education GRAD 2-5
Advanced graduate seminars focusing on educational scholarship related to each subject. Research problems: Multicultural and equity studies in education. Prereq: Permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times. Repeatable.

925.21 Advanced Seminar: Technology Education Education GRAD 2-5
Advanced graduate seminars focusing on educational scholarship related to each subject. Research problems: Technology education. Prereq: Permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times. Repeatable.

925.23 Advanced Seminar: Science, Technology, Engineering and Mathematics Education GRAD 2-5
Advanced graduate seminars focusing on educational scholarship related to each subject. Research problems: Science, technology, engineering and mathematics education. Prereq: Permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times. Repeatable.

925.25 Advanced Seminar: Adolescent, Post-Secondary and Community Literacies GRAD 2-5
Advanced graduate seminars focusing on educational scholarship related to each subject. Research problems: Adolescent, post-secondary and community literacies. Prereq: Permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times. Repeatable.

925.26 Advanced Seminar: Mathematics Education GRAD 2-5
Advanced graduate seminars focusing on educational scholarship related to each subject. Research problems: Mathematics education. Prereq: Permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times. Repeatable.

925.27 Advanced Seminar: Science Education GRAD 2-5
Advanced graduate seminars focusing on educational scholarship related to each subject. Research problems: Science education. Prereq: Permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times. Repeatable.

925.28 Advanced Seminar: Social Studies and Global Education GRAD 2-5
Advanced graduate seminars focusing on educational scholarship related to each subject. Research problems: Social studies and global education. Prereq: Permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times. Repeatable.

925.45 Advanced Seminar: Foreign and Second Language Education GRAD 2-5
Advanced graduate seminars focusing on educational scholarship related to each subject. Research problems: Foreign and second language education. Prereq: Permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times. Repeatable.

925.46 Advanced Seminar: TESOL GRAD 2-5
Advanced graduate seminars focusing on educational scholarship related to each subject. Research problems: Teaching second languages. Prereq: Permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times. Repeatable.

925.50 Advanced Seminar: Literature for Children and Young Adults GRAD 2-5
Advanced graduate seminars focusing on educational scholarship related to each subject. Research problems: Literature for children and young adults. Prereq: Permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times. Repeatable to a maximum of 20 cr hrs.

925.52 Advanced Seminar: Visual Disabilities Education GRAD 2-5
Advanced graduate seminars focusing on educational scholarship related to each subject. Research problems: Visual disabilities education. Prereq: Permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times. Repeatable.

925.54 Advanced Seminar: Reading and Literacy in Early and Middle Childhood Education GRAD 2-5
Advanced graduate seminars focusing on educational scholarship related to each subject. Research problems: Reading and literacy in early and middle childhood. Prereq: Permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times. Repeatable.

925.55 Advanced Seminar: Hearing Disabilities Education GRAD 2-5
Advanced graduate seminars focusing on educational scholarship related to each subject. Research problems: Hearing disabilities education. Prereq: Permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times. Repeatable.

925.56 Advanced Seminar: Rethinking Early Childhood Education GRAD 2-5
Advanced graduate seminars focusing on educational scholarship related to each subject. Research problems: Early childhood and elementary education. Prereq: Permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times. Repeatable.

926.20 M.Ed Capstone Seminar: Middle Childhood Education GRAD 3
Seminar to prepare M.Ed. students for the comprehensive written examination or approved alternative: Middle Childhood Education. Prereq: Open to M.Ed. students only.

926.21 M.Ed Capstone Seminar: Technology Education GRAD 3
Seminar to prepare M.Ed. students for the comprehensive written examination or approved alternative: Technology Education. Prereq: Open to M.Ed. students only.

926.23 M.Ed Capstone Seminar: Mathematics, Science and Technology Education GRAD 3
Seminar to prepare M.Ed. students for the comprehensive written examination or approved alternative: Mathematics, Science and Technology Education. Prereq: Open to M.Ed. students only.

926.25 M.Ed Capstone Seminar: English Education GRAD 3
Seminar to prepare M.Ed. students for the comprehensive written examination or approved alternative: English Education. Prereq: Open to M.Ed. students only. This course is graded S/U.

926.26 M.Ed Capstone Seminar: Mathematics Education GRAD 3
Seminar to prepare M.Ed. students for the comprehensive written examination or approved alternative: Mathematics Education. Prereq: Open to M.Ed. students only.

926.27 M.Ed Capstone Seminar: Science Education GRAD 3
Seminar to prepare M.Ed. students for the comprehensive written examination or approved alternative: Science Education. Prereq: Open to M.Ed. students only.
<table>
<thead>
<tr>
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<th>Credits</th>
<th>Description</th>
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<td>Seminar to prepare M.Ed. students for the comprehensive written examination or approved alternative: Drama, Language Arts, Literature and Reading. Prereq: Open to M.Ed. students only.</td>
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<td>926.70</td>
<td>M.Ed Capstone Seminar: Early Childhood Education</td>
<td>1-5</td>
<td>Provides guidance for grad students working on their final M.Ed project based on the two remaining themes. Su, Au, Wi Qtrs. Prereq: Open to M.Ed. students only. This course is graded S/U.</td>
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<td>927.21</td>
<td>First Year M.A. Seminar: Technology Education</td>
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<td>Seminars examine programmatic themes and research approaches: Technology Education. Repeatable to a maximum of 15 or hrs.</td>
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<td>First Year M.A. Seminar: Drama, Language Arts, Literature and Reading</td>
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<td>M.A. Capstone Seminar: Mathematics, Science and Technology Education</td>
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<td>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: Mathematics, Science and Technology Education.</td>
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<td>929</td>
<td>Black Feminist Pedagogical Theories in Teaching and Learning</td>
<td>4</td>
<td>Students will read and discuss “classic” theorists and texts related to Black feminist theories, the extent to which they inform teaching and learning and manifest as Black feminist pedagogies. Au Qtr. 1 3.5-hr cl. Prereq: 976; 3-4 hrs in WGSSt or AFamASSt.</td>
</tr>
<tr>
<td>930</td>
<td>Literacy Research and Issues of Diversity in the Classroom</td>
<td>3</td>
<td>Examines literacy research and diversity issues (language and cultural factors) that influence classroom and school evaluations, instruments and instructional practices.</td>
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<tr>
<td>933</td>
<td>Discourse Analysis in Educational Research I</td>
<td>4</td>
<td>Introduction to discourse analysis, background theories, getting a discourse analytic study started, data collection, and initial analysis. Au Qtr.</td>
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<tr>
<td>934</td>
<td>Discourse Analysis in Educational Research II</td>
<td>4</td>
<td>Acquire additional theoretical understanding of discourse analysis, data analysis, and relating discourse analysis to other approaches of educational research. Wi Qtrs. Prereq: 933.</td>
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<td>First Year Doctoral Seminar: Technology Education</td>
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<td>Students will focus on scholarly discourse communities, contemporary research priorities, programmatic themes and research approaches: Technology Education. Repeatable to a maximum of 15 or hrs.</td>
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<td>First Year Doctoral Seminar: Mathematics, Science and Technology Education</td>
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<td>Students will focus on scholarly discourse communities, contemporary research priorities, programmatic themes and research approaches: Mathematics, Science and Technology Education. Repeatable to a maximum of 15 or hrs. This course is graded S/U.</td>
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176 Education: Teaching and Learning

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Students will focus on scholarly discourse communities, contemporary research priorities, programmatic themes and research approaches: Hearing Disabilities. Repeatable to a maximum of 15 cr hrs.

937.56 First Year Doctoral Seminar: Drama, Language Arts, Literature and Reading
Students will focus on scholarly discourse communities, contemporary research priorities, programmatic themes and research approaches: Drama, Language Arts, Literature and Reading. Repeatable to a maximum of 15 cr hrs.

938.21 Advanced Doctoral Seminar: Technology Education
Designed to meet the needs of students focusing on dissertation research design and writing: Technology Education. Repeatable to a maximum of 15 cr hrs.

938.23 Advanced Doctoral Seminar: Mathematics, Science and Technology Education
Designed to meet the needs of students focusing on dissertation research design and writing: Mathematics, Science and Technology Education. Repeatable to a maximum of 15 cr hrs.

938.25 Advanced Doctoral Seminar: English Education
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938.56 Advanced Doctoral Seminar: Drama, Language Arts, Literature and Reading
Designed to meet the needs of students focusing on dissertation research design and writing: Drama, Language Arts, Literature and Reading. Repeatable to a maximum of 15 cr hrs.

940 Epistemologies and Theories in Multicultural and Equity Studies in Education
Students will examine and focus, in depth, on various critical epistemology/theoretical perspectives. Prereq: 975, 976, and 977 or permission of instructor.

942 Analyzing Intersections of Power, Place and Resistance in Education
Focuses on an in-depth look at understanding power, location, and resistance in education in the past, present and future. Sp Qtr.

943 Critical Race Theory in Education
Examines the ways in which race has been conceptualized, theorized & researched within the broader fields that compromise social science and education.

950 Advanced Study of Early Childhood Mathematics Learning and Experiences
This course focuses on the development of young children's mathematical understanding and factors including home/family, culture, educational experiences, policies, and individual characteristics of the children. Prereq: 975, 976, and 977 or permission of instructor.

960 Analysis of the Reading Process in a Second Language
Focus on the theoretical and data-based processes of comprehending natural written second language discourse. 2 2-hr cl, 1 hr lab.

962 Seminar in Foreign Language Education
Analysis of major research studies and projects; evaluation and implications of findings; research considerations unique to foreign language education. Prereq: Written permission of instructor. Not open to students with credit for EdTP 962.

963.07 Foreign Language Testing: General Student Body
Theory and practice of foreign language test construction including item writing, item analysis, reliability, validity, scoring, and interpretation: General Student Body. Prereq: Permission of instructor.

963.08 Foreign Language Testing: M.A. Students Only
Theory and practice of foreign language test construction including item writing, item analysis, reliability, validity, scoring, and interpretation: M.A. Students Only. Prereq: Permission of instructor.

963.09 Foreign Language Testing: Ph.D. Students Only
Theory and practice of foreign language test construction including item writing, item analysis, reliability, validity, scoring, and interpretation: Ph.D. Students Only. Prereq: Permission of instructor.

970 English Curriculum Language and Composition
An evaluation of current trends and developments in linguistics and composition instruction and their relevance for the English curriculum.

971 English Curriculum: Literature
Critical examination of trends in the secondary school literature program.

973 Rethinking Early Childhood & Elementary Education: The Politics of Childhood
The seminar will address important classic and contemporary research concerning young children with a focus on the preschool-early elementary years. Prereq: Admission to PhD program.
974 Sociocultural Aspects of Teaching and Learning in Early and Middle Childhood Education

975 Theoretical Perspectives on Learning, Teaching and Social Contexts

976 Diversity and Equity Issues in Teaching and Learning

977 Theoretical Perspectives on Learning and Teaching as Change Processes

985 Theories of Secondary Social Studies Education

989 Research Apprenticeship in Teaching and Learning

999.10 Research: Elementary Education

999.21 Research: Technology Education

999.23 Research: Mathematics, Science and Technology Education

999.25 Research: English Education

999.26 Research: Mathematics Education

999.27 Research: Science Education

999.28 Research: Social Studies Education

999.45 Research: Foreign and Second Language Education

999.50 Research: Integrated Teaching and Learning

999.52 Research: Visual disabilities

999.55 Research: Hearing disabilities

999.56 Research: Drama, Language Arts, Literature and Reading Education

999.70 Research: Early Childhood Education

999.99 Research: Language, Literacy and Culture

**Electrical and Computer Engineering**

205 Circuit Analysis

206 Switching Circuits Laboratory

209 Circuits and Electronics Laboratory

211 Introduction to Logic Design

215 Introduction to Microprocessor-Based Systems

219 Introduction to Electrical and Computer Engineering 1

219 Introduction to Electrical and Computer Engineering 2

225 Introduction to Electrical and Computer Engineering 3

229 Introduction to Electrical and Computer Engineering 4

229 Individual Studies in Electrical and Computer Engineering

300 Electrical Circuits

301 Analysis and Design in Circuits and Electronics
178 Electrical and Computer Engineering

309 Electrical Circuits Laboratory UGRD 1
Accompanies and complements 300 by demonstrating the physical principles discussed there; use of electrical instruments such as oscilloscopes, voltmeters, ammeters, etc., are also emphasized.
Au, Wi, Sp Qtr.s. 1 3-hr lab. Prereq or concur: 300 and minimum CPHR of 2.00. Not open to ECE majors.

311 Electromagnetics I UGRD 3
Waves and pulses on transmission lines including reflections, line impedance, and impedance matching. Static fields including dielectric and ferrite materials, and resistances, inductance and capacitance.
Au, Wi, Sp Qtr.s. 3 cl. Prereq: 205, Math 415, and acceptance as ECE major.

312 Electromagnetics II UGRD 3
Introduction to time varying fields including Maxwell’s Equations and plane wave propagation, reflection and transmission; applications to antennas, guided waves, and radar and communication systems.
Au, Wi, Sp Qtr.s. 3 cl. Prereq: 311.

320 Electronic Devices and Controls UGRD 3
Theory and applications of electronic devices; study of control circuits, feedback, operational amplifiers, and instrumentation.
Au, Wi, Sp Qtr.s. 3 cl. Prereq: 300 or MechEng 482, minimum CPHR of 2.00, and in Eng college. Not open to ECE majors.

323 Electronic Analysis, Design and Simulation UGRD 3
Electronic instrumentation; diode and transistor models for amplifiers and switches; electronics of digital circuits; multiple transistor circuit analysis.
Au, Wi, Sp Qtr.s. 3 cl. Prereq: 301, and acceptance in ECE major or Eng Physics major.

327 Electronic Devices and Circuits Laboratory I UGRD 2
Transistor characteristics, large and small signal parameters, transistor bias and amplifier circuits, operational amplifiers, logic circuits, waveform generation.
Su, Au, Wi, Sp Qtr.s. 1 cl, 1 3-hr lab. Prereq: 209, and prereq or concur: 323.

331 Introduction to Materials for Electrical and Computer Engineering UGRD 3
Introduction to the interrelation of the structure, properties, and processing of materials, with emphasis on electronic properties.
Au, Wi, Sp Qtr.s. 3 cl. Prereq: Chem 121, Math 415, Physics 133, a minimum CPHR of 2.00, and in Eng college.

341 Energy Conversion UGRD 3
Overview of energy conversion, with emphasis on the operation of AC and DC machines, and various alternative energy conversion processes.
Au, Wi, Sp Qtr.s. 3 cl. Prereq: 205 and acceptance into the Electrical & Computer Engineering major or Engineering Physics major.

351 Systems I UGRD 3
Linear systems and models; time responses using convolution; Fourier series and transform; computer-aided analysis.
Au, Wi, Sp Qtr.s. 3 cl. Prereq: 205 and acceptance into the Electrical & Computer Engineering major or Engineering Physics major.

352 Systems II UGRD 3
Laplace transform; frequency response and Bode plots; Z-transforms; state variables, state equations; computer-aided analysis.
Au, Wi, Sp Qtr.s. 3 cl. Prereq: 351 and 301.

432 Physics of Semiconductor Devices UGRD 3
Principles of semiconductor devices; theory of excess carriers, photoelectric effects, and diffusion; application to P-N junction, Schottky barrier, bipolar transistor, and field effect transistors.
Au, Wi, Sp Qtr.s. 3 cl. Prereq: 331, and prereq or concur 323.

447 Electrical Energy Conversion Laboratory I UGRD 2
Characteristics of transformers, direct current and alternating current electromechanical energy conversion devices; inspection of power system facilities.
Su, Au, Wi, Sp Qtr.s. 1 cl, 1 3-hr lab. Prereq: 341.

481 Ethics in Electrical and Computer Engineering UGRD 1
History and impact of electrical and computer engineering on society; IEEE code of ethics; professional responsibilities; engineering as social experimentation; safety and risk; case studies; whistle blowing; global awareness.
Au Qtr. 1 cl. Prereq: Must be ECE major. This course is graded S/U.

489 Professional Practice in Industry UGRD 2
Preparation of a comprehensive report based on actual employment experience in a co-op job in industry. This course may not be used as a technical elective.
Su, Au, Wi, Sp Qtr.s. Prereq: Admission to co-op program in ECE. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

501 Communication Theory UGRD 3
An introductory course in communication theory including both analog and digital modulation concepts and introductory noise concepts.
Au, Wi Qtr.s. 3 cl. Prereq: 352, Math 530 or Stat 427.

508 Communication Laboratory UGRD 2
Laboratory in the areas of communication theory and signal processing.
Au, Wi Qtr.s. 1 cl, 1 3-hr lab. Prereq or concur: 501.

517 Electromagnetics Laboratory UGRD 2
Transmission line parameters; attenuation, magnitude and phase of voltage and current on lines, reflected waves; waveguide characteristics and techniques; antenna patterns and impedances; optical devices.
Su, Wi, Sp Qtr.s. 1 cl, 1 3-hr lab. Prereq: 312.

551 Introduction to Feedback Control Systems UGRD 3
Feedback systems; modeling; stability; Routh Criterion; root locus; Bode plots; lead/lag, PID controller design, and state feedback.
Au, Sp Qtr.s. 3 cl. Prereq: 352.

557 Control, Signals, and Systems Laboratory UGRD 2
Laboratory study of signal processing, control systems and their components, computer-controlled instrumentation, sampled data systems, analog and digital control.
Su, Wi, Au Qtr.s. 1 cl, 1 3-hr lab. Prereq or concur: 551.

561 Digital Circuit Design UGRD 3
An introduction to digital circuit design using integrated circuit components; gates, counters, latches, ALU, shift registers, multiplexers, memories, etc.
Au, Wi, Sp Qtr.s. 3 cl. Prereq: 206, 261, 205 or 300.

567 Microprocessor/Microcontroller Laboratory I UGRD 2
Laboratory in which the concept of a microprocessor/microcontroller is explored by designing and building simple systems using in-circuit development tools.
Su, Au, Wi, Sp Qtr.s. 1 cl, 1 3-hr lab. Prereq: 206, 261, and 265 or CSE 360.

582 Electrical and Computer Engineering Design I UGRD 3
Prepresents fundamentals of engineering designing and leads to skills development of a specific design proposal. Technical communication skills, both written and oral, are employed throughout.
Au, Wi, Sp Qtr.s. 3 1-hr cl. Prereq: 323, a second writing course, and sr standing in ECE major. GEC course.

600 Introduction to Digital Signal Processing UGRD 3
Properties of discrete-time signal processing systems; filter structures; sampling; A/D and D/A conversion; digital filter design; discrete Fourier transform; applications.
Au, Wi Qtr.s. 3 cl. Prereq: 352; or grad standing.

609 Signal Processing Laboratory UGRD 2
Real-time signal processing using DSP processors; architecture, instruction set, sampling, filtering, and other applications.
Sp Qtr. 1 cl, 1 3-hr lab. Prereq: 600; or grad standing.

613 Antennas and Propagation for Wireless Systems UGRD 3
Introduction to antennas; antenna design for wireless base stations and remote sites; statistical propagation of waves in urban and rural environments; applications to cellular and PCS.
Au Qtr. 3 cl. Prereq: 312.

614 Introduction to Electromagnetic Compatibility UGRD 3
Basic knowledge of electromagnetic compatibility (EMC) fundamentals including government EMC regulations, grounding, shielding, and crosstalk.
Sp Qtr. 3 cl. Prereq: 312.

620 Introduction to RF Integrated Circuits UGRD 2
Introduction to design of radio frequency integrated circuits (RFICs). Transceiver architectures, transistor models, passive component models, MOS and bipolar LNA’s, Mixers, VCOs, PLLs, baseband circuits.
Au Qtr. 3 cl. Prereq: 323; or grad standing.

624 Power Electronic Devices and Circuits UGRD 3
A study of general laws and constraints in power electronic circuits, switching characteristics, generic converter topologies, analysis methodologies and applications.
Au Qtr. 3 cl. Prereq: 323.

625 Introduction to Integrated Circuits and Measurements UGRD 3
Parametric testing techniques for integrated analog, sample-data/mixed signal, RF and High-Speed digital channels. Design-for-Tests (DFT) and Built-in-Self Tests (BIST) methodologies are introduced.
Prereq: 323, 351; or graduate standing. Not open to students with credit for 694I.

626 Introduction to Integrated Circuits Test and Measurements UGRD 3
Parametric testing techniques for integrated analog, sample-data/mixed signal, RF and High-Speed digital channels. Design-for-Tests (DFT) and Built-in-Self Tests (BIST) methodologies are introduced.
Prereq: 323, 351; or graduate standing. Not open to students with credit for 694I.

628 Electronic Devices and Circuits Laboratory II UGRD 2
A laboratory study of converter circuits, switching characteristics of power transistors and thyristors, and effects of circuit elements on the behavior of power converters.
Au Qtr. 1 cl, 1 3-hr lab. Prereq: 327; and prereq or concur 624.

632 Introduction to Nanofabrication and Nanomanufacturing UGRD 3
Nanomanufacturing techniques will be introduced with a focus on top down approaches and a brief introduction of bottom up approaches.
Au Qtr. 3 cl. Prereq: 331 or MatSci 205 or grad standing in engineering or science. Not open to students with credit for BiomedE 662 or ChBE 632 or IndEng 652.02. Cross-listed with BiomedE 662, ChBE 632, and IndEng 652.02.
637 Solid State Microelectronics Laboratory I
Introduction to laboratory techniques including oxidation, chemical processes, photolithography, diffusion, and metallization; fabrication and measurements of planar diodes and transistors.
Au Qtr. 2 cl, 1.4-hr lab. Prereq: 432 or grad standing in engineering, chemistry or physics.

640 Industrial/Commercial Power Systems
An introduction to power system design for commercial buildings and industrial plants; legal and economic considerations; equipment specifications and ratings; design practice; fault calculations, protection, and coordination; grounding; and illumination design.
Sp Qtr. 3 cl. Prereq: 341.

643 Electric Machines
Magnetic circuits, transformers, electromechanical energy conversion principles, concepts of rotating machines, direct current machines, synchronous machines, and induction machines; steady state and transient analysis.
Au Qtr. 3 cl. Prereq: 341.

647 Digital Signal Processing Control of Electric Machines and Drives Laboratory
Students program digital signal processors using assembly language to control electromechanical and power electronic systems.
Wi Qtr. 1.4-hr lab. Prereq: 265, 341.

650 Introduction to Estimation
Linear dynamic systems with random inputs, least squares estimation, mean-square estimation, and Kalman filtering with applications in electrical and computer engineering.
Au Qtr. 3 cl. Prereq: 352, and Math 530 or Stat 427.

662 Theory and Design of Digital Computers
Design of general purpose digital computers including arithmetic and control units, input/output, memory subsystems, interrelation of hardware and software systems, and introduction to microprogramming.
Au, Sp Qtr. 3 cl. Prereq: 265 or CSE 360, and 561; or grad standing.

667 Digital Logic Laboratory
A self-paced laboratory involving the design of basic computer components such as registers, arithmetic logic units, counters, and the design of sequential machines.
Su, Au, WI, Sp Qtr. 2 cl, 1.3-hr lab. Prereq: 561 or grad standing.

668 Applied Component-Based Programming for Engineers and Scientists
Application of component-based software engineering technology to design and implementation of software systems in engineering and science.
Wi Qtr. 3 cl. Prereq: CSE 502 or 560. Not open to students with credit for 768 or CSE 768.
Cross-listed in Computer Science and Engineering.

675 Instrumentation, Signals, and Control in Transportation 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.
Au Qtr. 2 1.5-hr cl. Prereq: 301 and Math 415; or CSE 570; or grad standing in ElecEng or CivilEng; or permission of instructor. Cross-listed in Civil Engineering.

682 Organized Group Project for Electrical and Computer Engineering Design II
This design course integrates ECE specializations into a real design project with implementation. The department chooses topics and the teams meet during regular class times.
Au, Wi, Sp Qtr. 2 cl, 1.3-hr lab. Prereq: 562 and Sr standing. Not open to students with credit for 683 or 683H.

683 Special Group Project for Electrical and Computer Engineering Design II
This design course integrates ECE specializations into a real design project with implementation. Individual faculty choose topics. Teams of 3 or more meet independently. 683H (honors) may be available.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: 562, Sr standing, and permission of instructor. Not open to students with credit for 682 or 683H. Students must check with individual faculty prior to registering.

683H BS Honors Group Project for Electrical and Computer Engineering Design II
Culmination of multi-quarter thesis integrating various areas into a design project with implementation. Students document with a written thesis and oral presentation.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: 562, 3 credits of 763H, Sr standing, and honors program or permission of department or instructor. Not open to students with credit for 682 or 683. Before registering for the course, students must document design content, previous collaborative work on the project by noting collaborators, their roles, and how this project fits into a larger research effort. Students normally complete an undergraduate honors thesis by taking 763H followed by 683H.

693 Individual Studies in Electrical and Computer Engineering
Individual Studies in Electrical and Computer Engineering.
Su, Au, WI, Sp Qtrs. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

Electrical and Computer Engineering

694 Group Studies in Electrical and Computer Engineering
Students should check department listings.
Au, Wi, Sp Qtrs. Repeatable to a maximum of 18 cr hrs.

699 Undergraduate Research in Electrical and Computer Engineering
Supervised undergraduate research in various topics.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

700 Digital Signal Processing
Vector space methods for signals and systems; least squares design methodologies; design optimization; adaptive filtering; time-frequency techniques.
Wi Qtr. 3 cl. Prereq: 600 or equiv, or grad standing.

701 Communication Networks
Introduction to modern communication networks; data traffic, queueing models, multiserver channels, and selected applications.
Sp Qtr. 3 cl. Prereq: Math 530 or Stat 427 or equiv or grad standing.

702 Communications Systems
A study of communications systems with emphasis on signal-to-noise characteristics of various modulation and coding techniques.
Su Qtr. 3 cl. Prereq: 501 or grad standing.

706 Medical Imaging
Introduction to medical imaging techniques, including data collection and image processing for projection X-ray, computed tomography, ultrasonic, and magnetic resonance.
Au, Sp Qtrs. 3 cl. Prereq: 352, or concourse: 562; or grad standing in EE/EC/ECE, BME, Biophysics or CSE. Not open to students with credit for BiomedE 706. Cross-listed in Biomedical Engineering.

707 Digital Image Processing
Fundamentals and research directions in image processing; Fourier transforms, sampling, filtering and restoration, compression, edge detection and feature extraction.
Wi Qtr. 3 cl. Prereq: 600, Math 530 or Stat 427 or equiv or grad standing.

710 Microwave Circuits
Theory of microwave passive devices, transformers, couplers, filters, resonators, and circulators; computer-aided design of microwave circuits; microstrip realization and testing with a network analyzer.
Au, Sp Qtrs. 3 cl. 1.3-hr lab. Prereq: 312 or equiv or grad standing.

711 Radiation from Antennas
Dipole, loop, aperture, reflector, lens, surface wave, and other antennas; array theory; radiation resistance, directivity, and input impedance.
Wi Qtr. 3 cl. Prereq: 312 or equiv or grad standing.

713 Elements of Radio Wave Propagation
Practical methods for predicting tropospheric, groundwave, and ionospheric propagation, including refraction, reflection, and extinction effects.
* Sp Qtr. 3 cl. Prereq: 312 or grad or grad standing. Even years.

714 Radar Systems
Study of radar systems and their applications; emphasis on measurement of target parameters by means of radar with applications to ranging, tracking, mapping, and navigation.
* Wi Qtr. 3 cl. Prereq: 312 or grad standing. Even years.

715 Introduction to Numerical Methods for Electromagnetics
Provides an introduction to a set of numerical methods (integral equation, finite difference and finite element methods) used to solve electromagnetic-related problems.
Au Qtr. 3 cl. Prereq: 301, and Math 568 or 571; or grad standing. Not open to students with credit for 694Y.

716 Optics with Laser Light
Wave equation, ray optics, optical matrices, near and far-field diffraction theory, diffraction integral with lenses, Fourier optics, optical computing, holography, polarization, birefringence, applications.
* Au Qtr. 3 cl. Prereq: 352 and 312, or grad standing in engineering, chemistry or physics. Even years.

717 Integrated Optics
Fundamentals of planar lightwave circuits and guided wave devices; propagation in anisotropic media; electrooptic and nonlinear optical effects; emerging concepts in RF photonics and nanobiotechnology.
* Au Qtr. Prereq: 312 or grad standing. Not open to students with credit for 694H AU06 or AU08. Odd years.

719 Electromagnetic Field Theory I
Maxwell's equations; constitutive relations; boundary conditions; wave equation; plane wave solutions in planar multilayered media; Doppler shift; vector potentials and fields of simple sources.
Au Qtr. 3 cl. Prereq: 312.
# Electrical and Computer Engineering

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
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</thead>
<tbody>
<tr>
<td>720</td>
<td>Low-Power Mixed-Signal VLSI Design</td>
<td>UGRD 3</td>
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<tr>
<td></td>
<td>Low voltage low power design for mixed analog/digital VLSI systems in CMOS technologies, OpAmps and comparators, sample and hold, switched capacitor filters, Nyquist and oversampling converters, decimation filters, applications in baseband wireless communications, integrated sensors. Wi Qtr. 3 cl. Prereq: 323 or grad standing.</td>
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<td>721</td>
<td>Digital VLSI Design</td>
<td>UGRD 3</td>
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<td>Design and circuit analysis of basic VLSI structures such as adders and registers; custom macro-cell, bit slice, and re-use design concepts; physical layout design, layout parasitics extraction, use of VLSI layout design tools. Sp Qtr. 3 cl. Prereq: 323 or grad standing.</td>
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<td>722</td>
<td>Introduction to Analog Integrated Circuits</td>
<td>UGRD 3</td>
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<td>Introduction to bipolar and MOS analog integrated (IC) analysis and design. DC biasing for ICs, current sources, sinks and active loads, bandgap references, input and output stages, OpAmp architectures, nonlinear analog ICs. Computer simulation of Analog ICs. Au Qtr. 3 cl. Prereq: 323 or grad standing.</td>
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<tr>
<td>723</td>
<td>Microwave Transistor Amplifiers and Oscillators</td>
<td>UGRD 4</td>
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<td>Design principles of microwave transistor amplifiers and oscillators; low-noise, power, and broadband amplifiers; and computer-aided design, microstrip realizations, and testing in the laboratory. Wi Qtr. 3 cl. 1.3-hr lab. Prereq: 312 and 323; or grad standing.</td>
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<td>724</td>
<td>Power Electronic Devices and Circuits II</td>
<td>UGRD 3</td>
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<td>General model, operational principles, and application of high-frequency switching power converters. Wi Qtr. 3 cl. Prereq: 341 and 624.</td>
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<tr>
<td>730</td>
<td>Fundamentals of Semiconductors for Microelectronics and Optoelectronics</td>
<td>UGRD 3</td>
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<td>Crystal structure, semiconductor energy band structure, electron transport and carrier recombination, heterostructures, optical and dielectric properties, optical semiconductor devices Au Qtr. 3 cl. Prereq: 432 or grad standing in engineering, chemistry or physics.</td>
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<td>731</td>
<td>Fiber Optics</td>
<td>UGRD 3</td>
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<td>Waveguiding in optical fibers, fiber losses, coupling and power launching, detectors, sources, noise, receiver and transmitter design, link analysis, introduction to fiber sensors. Sp Qtr. 3 cl. Prereq: 312 and 323; or grad standing.</td>
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<tr>
<td>732</td>
<td>Quantum Electron Devices: Lasers</td>
<td>UGRD 3</td>
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<td>Atomic interaction with radiation, cavities with gain, pumping techniques, semiconductor lasers. * Au Qtr. 3 cl. Prereq: 432 and 312, or grad standing in engineering, chemistry, or physics. Odd years.</td>
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<td>734</td>
<td>Silicon VLSI Process Technology</td>
<td>UGRD 3</td>
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<td>Discrete and integrated circuit device design and silicon technologies, VLSI processing procedures, and device measurements for process development. * Sp Qtr. 3 cl. Prereq: 432 or grad standing in engineering, chemistry or physics. Odd years.</td>
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<tr>
<td>735</td>
<td>Compound Semiconductor Process Technology</td>
<td>UGRD 3</td>
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<td>III-V compound semiconductor fabrication technology; epitaxy, doping, bandgap engineering; GaAs and InP high speed devices and IC design approaches; testing and failure mechanisms. * Wi Qtr. 3 cl. Prereq: 432 or grad standing in engineering, chemistry or physics. Even years.</td>
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<td>736</td>
<td>Electronic Surfaces and Interfaces</td>
<td>UGRD 3</td>
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<td>Physical principles governing electronic, chemical, and structural properties of semiconductor interfaces and the techniques available to characterize them. * Wi Qtr. 3 cl. Prereq: 331 or grad standing in engineering, chemistry or physics. Odd years.</td>
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<tr>
<td>737</td>
<td>Photonics Laboratory</td>
<td>UGRD 4</td>
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<td></td>
<td>Experiments in photonics from among: fiber optics, liquid crystals, quantum devices, optical sensing, acousto-optics, lasers, solar cells, holography, and optical computing. Supplemental lecture. * Wi Qtr. 2 cl. 1.4-hr lab. Prereq: 312, and prereq or concord 432; or grad standing. Odd years.</td>
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<td>740</td>
<td>Electric Power System Analysis</td>
<td>UGRD 3</td>
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<td></td>
<td>A study of major components and steady state operation of electric power systems; network concepts, symmetrical components, asymmetrical systems, power flow, and system stability. Au Qtr. 3 cl. Prereq: 341.</td>
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<td>741</td>
<td>Electric Power System Protection</td>
<td>UGRD 3</td>
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<td>A study of methods and devices used in system protection; protection systems, relay types, pilot wire and carrier systems, relay response, protection of machines, transformers, buses, and lines; instrument transformers; and modern trends in protection. Wi Qtr. 3 cl. Prereq: 740.</td>
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<td>742</td>
<td>Electromechanical Motion Devices</td>
<td>UGRD 3</td>
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<td>Electromechanical energy conversion, dynamic models for control of electric machines, design and analysis of electromechanical motion devices. Sp Qtr. 3 cl. Prereq: 351, and prereq or concord 341; or permission of instructor.</td>
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<td>743</td>
<td>High Voltage Engineering and Laboratory I</td>
<td>UGRD 4</td>
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<td>Dielectric strength and breakdown of gases, liquids, and solids; electric field design problems in power system equipment; laboratory study of high voltage insulation. Wi Qtr. 3 cl. 1.2-hr lab. Prereq: 341.</td>
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<td>749</td>
<td>Linear System Theory</td>
<td>UGRD 3</td>
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<td>Canonical realization of transfer functions; state observability and controllability; state feedback and asymptotic observers; reduced order observers; direct transfer function design. Au Qtr. 3 cl. Prereq: 352 and 551; or grad standing.</td>
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<td>752</td>
<td>Feedback Control Systems</td>
<td>UGRD 3</td>
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<td></td>
<td>Principles of feedback control, robustness, sensitivity and performance objectives, classical controller design methods, introduction to loop shaping and parameterization of stabilizing controllers. Sp Qtr. 3 cl. Prereq: 551 or grad standing.</td>
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<td>753.01</td>
<td>Applications of Control: Powertrain Control</td>
<td>UGRD 4</td>
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<td>Classical and modern control methods applied to automotive powertrain systems; overview of production hardware; sensors and actuators; modeling for control. * Wi Qtr. 2.2-hr cl. Prereq: 551 or grad standing. Odd years.</td>
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<tr>
<td>753.02</td>
<td>Applications of Control: Autonomy in Vehicles</td>
<td>UGRD 3</td>
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<td>Autonomy in the context of modern vehicles; cruise control, anti-lock brake systems (ABS), steering control/ lane keeping; introduction to automated highway systems (AHS). * Wi Qtr. 3 cl. Prereq: 551 or grad standing. Even years.</td>
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<td>754</td>
<td>Nonlinear Systems</td>
<td>UGRD 3</td>
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<td>Analysis of nonlinear control systems; Lyapunov stability, numerical methods, phase-plane techniques, describing functions, and linearization via feedback. Wi Qtr. 3 cl. Prereq: 551 or grad standing.</td>
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<td>755</td>
<td>Digital Control Systems</td>
<td>UGRD 3</td>
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<td>Difference equations, z-transforms, digital filtering, sampling quantization, analog-digital conversion; block diagramming to model digital and hybrid control systems. Wi Qtr. 3 cl. Prereq: 551 or grad standing.</td>
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<td>761</td>
<td>Switching Circuit Theory</td>
<td>UGRD 3</td>
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<td>Minimization of multiple output combinational circuits, computer-aided design, state minimization, asynchronous sequential machines, state assignment, transient analysis. Au Qtr. 3 cl. Prereq: 662 or CSE 675.01.</td>
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<tr>
<td>763</td>
<td>Theory and Design of Digital Computers II</td>
<td>UGRD 3</td>
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<td>Detailed design of major components of modern computer architecture; design of controllers, ALUs, floating point units, caches, and memory management units using a hardware description language. Sp Qtr. 3 cl. Prereq: 561, and 662 or CSE 675.01 or CSE 675.02; or grad standing. Even years.</td>
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<tr>
<td>767</td>
<td>Introduction to Real-Time Robotics Systems</td>
<td>UGRD 3</td>
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<td>Components of a Robot System, types, electronic system components, and analog-digital conversion; error analysis; hardware and software. * Au Qtr. 3 cl. Prereq: 265, 352, 323; or grad standing. Odd years.</td>
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<tr>
<td>768</td>
<td>Functional Verification of Hardware Designs</td>
<td>UGRD 3</td>
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<td></td>
<td>Techniques for verification of hardware designs; writing testbenches; verification of increasingly complex computer circuit designs provided by industry using simulation environments used in industry. Sp Qtr. 2 cl. 1.3-hr lab. Prereq: 762.</td>
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<td>776</td>
<td>Microcomputer Structures</td>
<td>UGRD 3</td>
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<td>An investigation of current microcomputer structures with emphasis on hardware implementation of I/O, direct memory access, interrupts, memory, and microprogramming. Au Qtr. 3 cl. Prereq: 662 or grad standing.</td>
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<tr>
<td>787</td>
<td>Computer Interfacing and Protocols</td>
<td>UGRD 3</td>
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<td>A hardware oriented course dealing with the electrical principles of computer interfaces for digital communication including time domain effects, serial/parallel interfaces, modems, and associated protocols. Wi Qtr. 3 cl. Prereq: 561 or grad standing.</td>
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<tr>
<td>788</td>
<td>Applied Use-Case-Driven Object-Oriented Analysis and Design for Engineers and Scientists</td>
<td>UGRD 3</td>
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<td>Case study using incremental and iterative use-case-driven process of building object-oriented scientific and engineering software systems; analysis, design, UML modeling, design patterns. * Sp Qtr. 3 cl. Prereq: 668 or CSE 668. Not open to students with credit for CSE 767. Cross-listed in Computer Science and Engineering. Odd years.</td>
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</tbody>
</table>
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806 Signal Detection and Estimation GRAD 3
Binary and M-ary decision theory; Bayes, minimax, ideal, and Neyman-Pearson detectors; maximum likelihood and maximum a posteriori estimation; and receiver operating characteristics. Sp Qtr. 3 cl. Prereq. 804.

807 Advanced Communication Theory I GRAD 3
Advanced topics in wireless communication systems. Topics are selected to prepare graduate students for research and application to current problems in the field. * Sp Qtr. 3 cl. Prereq: or concour. 806.

808 Advanced Communication Theory II GRAD 3
Advanced topics in communication theory. Topics are selected to prepare graduate students for research and application to current problems in the field. * Au Qtr. 3 cl. Prereq: 806. Even years.

809 Digital Communication Theory GRAD 3
A study of digital communications theory with emphasis on performance, spectral characteristics, and complexity. Statistical decision theory is applied to digital communications problems. Sp Qtr. 3 cl. Prereq or concour: 806.

810 Electromagnetic Field Theory II GRAD 3
Electromagnetic field theories with applications; separable guided wave and scattering boundary value problems; one-dimensional Green's functions with applications; multi-conductor transmission lines. Wi Qtr. 3 cl. Prereq: 719.

811 Electromagnetic Field Theory III GRAD 3
Multi-dimensional potential Green's functions for solving separable electromagnetic problems with arbitrary excitation; integral equation formulation for more general wave problems of practical interest. Sp Qtr. 3 cl. Prereq: 810.

812 Electromagnetic Guided Waves GRAD 3
Rigorous treatment of electromagnetic guided waves in various types of planar transmission lines and waveguides, magnetized ferrites and semiconductors as well as photonic crystals. * Sp Qtr. 3 cl. Prereq: 719 or equiv. Odd years.

813 Finite Elements for Electromagnetics GRAD 3
A study of finite element methods from the viewpoint of researchers in electromagnetics. * Wi Qtr. 2 1.5-hr cl. Prereq: 715. Even years.

814 Method of Moments in Electromagnetics GRAD 3
Method of Moments solution of integral equations of electromagnetic radiation and scattering: applications to conducting and material bodies, apertures, thin wires, microstrip, etc. * Sp Qtr. 3 cl. Prereq: 715. Even years.

815 Advanced Antenna Theory GRAD 3
Mutual impedance; moment method, aperture antennas; ground plane effects; horn and reflector antennas; pattern synthesis; antenna measurements. * Au Qtr. 3 cl. Prereq: 810. Even years.

816 Electromagnetic Scattering from Random Media and Rough Surfaces GRAD 3
Analytical theories of scattering from statistically described media; independent scattering, radiative transfer, and analytical wave theory. Physical optics and perturbation theories of rough surface scattering. * Sp Qtr. 3 cl. Prereq: 810. Not open to students with credit for 894J. Odd years.

817 Discrete Electromagnetics GRAD 3
Discretization techniques for Maxwell-equations, and associated numerical methods, with emphasis on finite difference, finite volumes, and finite elements. * Wi Qtr. 3 cl. Prereq: 715. Not open to students with credit for 894K. Odd years.

819 Advanced Electromagnetic Theory GRAD 3
Use of asymptotic methods to obtain high-frequency solutions; geometrical optics and the propagation through inhomogeneous media; geometrical theory of diffraction and its application to antenna and scattering problems. * Au Qtr. 3 cl. Prereq: 811. Odd years.

820 Analog VLSI Design GRAD 3
Introduction to analog VLSI design with emphasis on the hardware implementation of analog signal processing VLSI circuits and systems. Sp Qtr. 3 cl. Prereq: 720, and prereq or concour 721; or grad standing.

822 Hierarchical Design, Capture, and Verification of Mixed Signal Systems GRAD 3
Advanced principles of analog and digital simulation strategies for design and verification of mixed signal systems. Modern CAD tools for physical system design. * Wi Qtr. 3 cl. Prereq: 722. Not open to students with credit for 894Z. Even years.

831 Semiconductor Device Theory GRAD 3
Basic semiconductor device current equations, measurement and analysis of interface states, advanced p-n junction theory, avalanche breakdown, metal-semiconductor contacts, MIS capacitors, and short channel devices. * Wi Qtr. 3 cl. Prereq: 730 or equiv. Even years.
182 Electrical and Computer Engineering

832 High-Speed Semiconductor Devices GRAD 3
Principles underlying the operation and application of high-speed solid-state active devices, electron transport in high fields, Gunn effect, superlattices, heterostructures and modulation doped devices.
* Sp Qtr. 3 cl. Prereq: 730 or equiv. Even years.

833 Optical Effects in Materials and Devices GRAD 3
Interaction of light with crystals, polarization electrooptics, acousto-optics, optical properties of nanoscale structures and effects on energy harvesting, quantum cascade lasers, photonic band gaps.
* Wi Qtr. 3 cl. Prereq: Grad standing in engineering, chemistry, or physics. Odd years.

835.01 Special Topics in Nanostructure Devices: Advanced Photovoltaics GRAD 3
Fundamentals of nanostructured semiconductors for photovoltaics; space solar cells; optoelectronic properties of semiconductors; physics, operation, and design of compound semiconductor solar cells.
* Wi Qtr. 3 cl. Prereq: 730. Odd years.

835.02 Special Topics in Nanostructure Devices: Special Topics on Organic Conducting Devices GRAD 3
Latest developments in organic conducting polymer devices; lectures followed by student paper discussion; papers are gathered based upon discussion and assignment and shared with class.
* Wi Qtr. 1.5-hr cl. Prereq: 432 or grad standing in engineering, chemistry or physics.

835.03 Special Topics in Nanostructure Devices: Nanoscale Structures and Devices GRAD 3
Fundamentals and technology of nanoscale devices; engineering of new devices, confined structures in low dimensions, and their effects on more traditional devices.
* Wi Qtr. 2.15-hr cl. Prereq: 730. Odd years.

842 Power System Stability and Control GRAD 3
Control and transient stability of power system, excitation system, state estimation; advanced topics.
* Au Qtr. 3 cl. Prereq: 740 or permission of instructor. Odd years.

844 Application of Power Electric Circuits in Electric Power Systems GRAD 3
Advanced static VAR compensation, system stability enhancement, harmonic minimization, etc.; by power electronic means will be discussed.
* Sp Qtr. 3 cl. Prereq: 724 and 740, or permission of instructor. Even years.

845 Electromechanical System Identification GRAD 3
Electromechanical systems, model building, least-squares, output error and maximum likelihood estimation.
* Sp Qtr. 3 cl. Prereq: 650 and 743. Even years.

850 Theory and Design of Feedback Control Systems GRAD 3
Linear feedback theory, stability, the quadratic regulator, output feedback pole placement and design of servocompensators, and CAD techniques for control systems.
* Wi Qtr. 3 cl. Prereq: 750. Even years.

851 Stochastic Estimation and Control Systems GRAD 3
Synthesis of control systems, both linear and nonlinear, with random inputs; advanced topics.
* Wi Qtr. 3 cl. Prereq: 750, and 650 or 805. Even years.

852 Adaptive Control GRAD 3
Model reference adaptive control, direct and indirect methods, robustness issues, applications.
* Sp Qtr. 3 cl. Prereq: 750, 752, and 754. Even years.

854 Optimal Control Theory GRAD 3
Optimal control by dynamic programming, Pontryagin's maximum principle and variational methods; minimum time, energy, and fuel problems for linear continuous and discrete systems.
* Wi Qtr. 3 cl. Prereq: 750 or permission of instructor. Odd years.

855 Large Scale Systems GRAD 3
Computational methods in optimal control and large scale dynamical systems; decentralization; hierarchy and their effects on modelling, stability analysis, and optimal controller design and implementation.
* Au Qtr. 3 cl. Prereq: 850. Even years.

856 Advanced Feedback Control GRAD 3
Input-output methods, modern frequency domain analysis and design techniques, Youla parameterization, and H2 and H-infinity optimization.
* Wi Qtr. 3 cl. Prereq: 752 and 850, or permission of instructor. Odd years.

857 Nonlinear Control Systems GRAD 3
* Sp Qtr. 3 cl. Prereq: 754. Not open to students with credit for 854H. Odd years.

858 Systems Biology of Decision Making GRAD 3
Mathematical modeling and analysis of individual and group decision making; ecology and evolution of decision making; examples from social insects and humans; bioinspired engineering design.
* Sp Qtr. 2.15-hr cl. Prereq: 750 and 754. Odd years.

859 Sliding Mode Control in Electro-Mechanical Systems GRAD 3
Sliding mode control for decoupling of the design procedure and low sensitivity with respect to uncertainties, and application to control of electromechanical systems.
* Au Qtr. 3 cl. Prereq: 761 or Mech Eng 571 or grad standing. Cross-listed in Mechanical Engineering.

861 Computer Communication Networks I GRAD 3
A foundational and analytical understanding of network architecture, error control, queuing analysis, and network dimensioning.
Wi Qtr. Prereq: Math 530 or Stat 428 or Stat 520 or ECE 804 or permission of instructor. Not open to graduates with credit for ECE/CSE 814L. Cross-listed in Computer Science and Engineering.

862 Computer Communication Networks II GRAD 3
Fundamental understanding of network analysis, routing, control, multi-access, and their examples in the context of the existing communication networks.
Sp Qtr. Prereq: 861 or permission of instructor. Not open to students with credit for ECE/CSE 814L. Cross-listed in Computer Sciences and Engineering.

863 Computer Vision GRAD 3
Computer vision systems, image models, edge detection, feature extraction, shape representation, morphology, structural descriptions, object modeling, matching, knowledge bases, semantic knowledge, architectures, and depth perception.
Sp Qtr. 3 cl. Prereq: 707 or permission of instructor.

864 Advanced Computer Design GRAD 3
Parallel computer architectures, pipeline design, multiprocessor design, interprocessor communication, case studies and application examples.
Wi Qtr. 3 cl. Prereq: 662.

866 Multisensor Integration for Intelligent Systems GRAD 3
Physical sensing devices, multisensor interface, sensor data fusion, object recognition by multisensor integration, and system organization for multisensor integration.
* Au Qtr. 3 cl. Prereq: 662, 763, Math 530 or Stat 427 or equiv, and CSE 660. Even years.

867 Design of Advanced Data Networks GRAD 3
Recent advances in design and implementation of advanced data networks; consists of in-depth study on network protocols/algorithms and discussion on protocol implementation with software system building.
* Au Qtr. 3 cl. Prereq: 701 or CSE 677. Odd years.

874 Pattern Recognition GRAD 3
Fundamentals of pattern recognition techniques and their application to electrical and computer engineering problems, cognitive neuroscience and bioinformatics.
* Sp Qtr. 3 cl. Prereq: 804 or 707 or CSE 730. Not open to students with credit for 894T. Odd years.

881 Seminar in Electrical Engineering GRAD 1-3
Seminar in Electrical Engineering.
Su, Au, Wi, Sp Qtrs. 1-3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

888 Open Graduate Seminar GRAD 1-3
As an introduction to potential research areas, students will attend OSU sponsored talks relevant to topics in Electrical and Computer Engineering and critique them by written reports.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Grad standing in ECE. Repeatable to a maximum of 8 cr hrs. The credit earned for this class will not be counted as part of the hour requirement for the Masters degree, nor can it be used as any part of the three areas of emphasis on the PhD Plan of Study. This course is graded S/U.

891.01 Interdisciplinary Seminar on Biomedical Images GRAD 1-2
Graduate seminar for Graduate Interdisciplinary Specialization in Comprehensive Engineering and Science of Medical Images.
Au, Wi, Sp Qtrs. 1 cl. Prereq: Grad standing. Repeatable to a maximum of 3 cr hrs. Cross-listed in Biomedical Engineering, Biomedical Informatics, Biophysics, Computer Science and Engineering, Integrated Biomedical Science, Pathology, Radiology, Statistics, and Vision Science. Cross-listed in BiomedE. CSE, Stat, VisSci, IBOP, Biophys, Pathol, Radiology, and Biominf. This course is graded S/U.

894 Group Studies in Electrical Engineering GRAD 1-18
Group Studies in Electrical Engineering.
Au, Wi, Sp Qtrs. Repeatable to a maximum of 18 cr hrs. Students should check department listings.

910 Periodic Structures in Electromagnetics GRAD 3
Development of the Dyadic Green’s function for one and two dimensional periodic structures of arbitrarily oriented elements; application to phased arrays with and without scan compensation.
* Wi Qtr. 3 cl. Prereq: 711, 810, 815, or permission of instructor. Even years.

917 Advanced Optical Concepts GRAD 3
Fiber and integrated optics and their applications, optical transfer functions, aberrations, optical thick holograms, numerical optical computing, and liquid crystals.
* Wi Qtr. Prereq: 716 or permission of instructor. Odd years.

999 Research in Electrical Engineering GRAD 1-18
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.
### Emergency Medicine

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### Engineering

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<td>100.10</td>
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<tr>
<td>100.11</td>
<td>Materials Science, Ceramic, and Metallurgical Engineering Survey</td>
<td>UGRD 1</td>
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Academic requirements; University procedures, grading system, and resources; overview of engineering academic areas of study and services: Aerospace Engineering Survey. Prerequisite: Enrollment in Engineer. Not open to students with credit for Agr 100, ArtsCol 100, ArtsSci 100, HomeEc 100, NatRes 100, and UVCSurv 100.

Academic requirements; University procedures, grading system, and resources; overview of engineering academic areas of study and services: Aviation Engineering Survey. Prerequisite: Enrollment in Engineer. Not open to students with credit for Agr 100, ArtsCol 100, ArtsSci 100, HomeEc 100, NatRes 100, and UVCSurv 100.

Academic requirements; University procedures, grading system, and resources; overview of engineering academic areas of study and services: Chemical and Biomolecular Engineering Survey. Prerequisite: Enrollment in Engineer. Not open to students with credit for Agr 100, ArtsCol 100, ArtsSci 100, HomeEc 100, NatRes 100, and UVCSurv 100.

Academic requirements; University procedures, grading system, and resources; overview of engineering academic areas of study and services: Civil Engineering Survey. Prerequisite: Enrollment in Engineer. Not open to students with credit for Agr 100, ArtsCol 100, ArtsSci 100, HomeEc 100, NatRes 100, and UVCSurv 100.

Academic requirements; University procedures, grading system, and resources; overview of engineering academic areas of study and services: Computer Science and Engineering Survey. Prerequisite: Enrollment in Engineer. Not open to students with credit for Agr 100, ArtsCol 100, ArtsSci 100, HomeEc 100, NatRes 100, and UVCSurv 100.

Academic requirements; University procedures, grading system, and resources; overview of engineering academic areas of study and services: Electrical and Computer Engineering Survey. Prerequisite: Enrollment in Engineer. Not open to students with credit for Agr 100, ArtsCol 100, ArtsSci 100, HomeEc 100, NatRes 100, and UVCSurv 100.

Academic requirements; University procedures, grading system, and resources; overview of engineering academic areas of study and services: Engineering Physics Survey. Prerequisite: Enrollment in Engineer. Not open to students with credit for Agr 100, ArtsCol 100, ArtsSci 100, HomeEc 100, NatRes 100, and UVCSurv 100.

Academic requirements; University procedures, grading system, and resources; overview of engineering academic areas of study and services: Food, Agricultural and Biological Engineering Survey. Prerequisite: Enrollment in Engineer. Not open to students with credit for Agr 100, ArtsCol 100, ArtsSci 100, HomeEc 100, NatRes 100, and UVCSurv 100.

Academic requirements; University procedures, grading system, and resources; overview of engineering academic areas of study and services: Geomatics Engineering Survey. Prerequisite: Enrollment in Engineer. Not open to students with credit for Agr 100, ArtsCol 100, ArtsSci 100, HomeEc 100, NatRes 100, and UVCSurv 100.

Academic requirements; University procedures, grading system, and resources; overview of engineering academic areas of study and services: Industrial and Systems Engineering Survey. Prerequisite: Enrollment in Engineer. Not open to students with credit for Agr 100, ArtsCol 100, ArtsSci 100, HomeEc 100, NatRes 100, and UVCSurv 100.

Academic requirements; University procedures, grading system, and resources; overview of engineering academic areas of study and services: Materials Science, Ceramic, and Metallurgical Engineering Survey. Prerequisite: Enrollment in Engineer. Not open to students with credit for Agr 100, ArtsCol 100, ArtsSci 100, HomeEc 100, NatRes 100, and UVCSurv 100.
184 Engineering

186 Introduction to Engineering TII - Graphics and Communications UGRD 2
Introduction to three-dimensional visualization and presentation with freehand, manual, and CAD (computer aided drawing and design) methods.
Au, Wi Qtrs. 2-2.5 hr. Prereq: "K" credit for 185 or 187 or permission of instructor: Math 150 or concur. Not open to students with credit for 181, 182, or 183. Serves as a partial requirement, intended for transfer students, of the required 181-183 course sequence.

187 Introduction to Engineering TII - Computer and Aided Problem Solving UGRD 2
Introduction to managing variables, importing and exporting data, performing calculations, generating plots, and developing files using computer applications.
Wi, Sp Qtrs. 2-2 hr. Prereq: "K" credit for 185 or 186 or permission of instructor: Math 150 or concur. Not open to students with credit for 181, 182, or 183. Serves as a partial requirement, intended for transfer students, of the required 181-183 course sequence.

191.01H Engineering Fundamentals and Laboratory I UGRD 4
Introduction to 3-dimensional visualization and presentation by sketching and CAD, engineering problem solving, spreadsheet use, experimental design, data analysis, lab experience and reporting. Standard course.
Au Qtr. 4-2 hr and lab. Prereq or concur: Math 151 or higher, available to students designates Honors or by permission of instructor. Not open to students with credit for 181. First of a three course sequence.

191.02H Engineering Fundamentals and Laboratory I UGRD 4
Introduction 3-dimensional visualization and presentation by sketching and CAD, engineering problem solving, spreadsheet use, experimental design, data analysis, lab and reporting (oral and written). Summer Academy. Highschool Honors Designated Students.
Su Qtr. Prereq: Admission by permission of Instructor only. First of a three course sequence.

192.01H Engineering Fundamentals and Laboratory II UGRD 4
Solving engineering problems using computer programming, development of algorithms, introduction to C/C++ language, MATLAB, data acquisition and reduction techniques, hands-on lab experience and reporting. Standard course.
Wi Qtr. Prereq: 191H or 191.01H or 191.02H or permission of instructor: Second of a three course sequence.

192.02H Engineering Fundamentals and Laboratory II UGRD 4
Solving engineering problems using computer programming, development of algorithms, introduction to C/C++ language, MATLAB, data acquisition and reduction techniques, hands-on lab experience and reporting. Standard course.
Wi Qtr. Prereq: 191H or 191.01H or 191.02H or permission of instructor: Second of a three course sequence.

192.03H Engineering Fundamentals and Laboratory II UGRD 4
Solving engineering problems using computer programming, development of algorithms, introduction to LABVIEW and MATLAB languages, data acquisition and reduction techniques, hands-on lab experience and reporting. Standard course.
Wi Qtr. Prereq: 191H or 191.01H or 191.02H or permission of instructor: Second of a three course sequence.

193.01H Engineering Fundamentals and Laboratory III UGRD 4
Design/build team project with written and oral documentation and project management. Requires integration and application of concepts from previous engineering, math, and physics courses. Standard course.
Sp Qtr. 3-2 hr lab. Prereq: Engineer 192H or Engineer 192.01H or Engineer 192.02H or permission of instructor. Not open to students with credit for Engineer 183. Third of a three course sequence.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://register.osu.edu.

193.02H Engineering Fundamentals and Laboratory III UGRD 4
Design/build team project with written and oral documentation and project management. Requires integration and application of concepts from previous engineering, math, and physics courses. Emphasis on Nanotechnology.
Sp Qtr. Prereq: Engineer 192H or Engineer 192.01H or Engineer 192.02H or permission of instructor. Not open to students with credit for Engineer 183. Third of a three course sequence.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://register.osu.edu.

193.03H Engineering Fundamentals and Laboratory III UGRD 4
Design/build team project with written and oral documentation and project management. Requires integration and application of concepts from previous engineering, math, and physics courses. Infrastructure Systems or other alternative design project option.
Sp Qtr. Prereq: Engineer 192H or Engineer 192.01H or Engineer 192.02H or permission of instructor. Not open to students with credit for Engineer 183. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://register.osu.edu.

194 Group Studies in Engineering UGRD 1-6
Special topics of general interest to engineering students. 194H (honors) may be available.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 12 or hrs.

195 Women in Engineering UGRD 1
Guest speakers share their knowledge and experience about the areas and career options available in engineering; class discussions; activities for building professional awareness.
Sp Qtr. 1 cl. Repeatable to a maximum of 5 or hrs. This course is graded S/U.

198 Explore Engineering UGRD 1
Lectures and discussion of various engineering disciplines: current activities, expectations, responsibilities and future trends.
Sp Qtr. 2 cl. This course is graded S/U.

201 Technologies Studies I: Analyzing Our World UGRD 5
Introduction to technology concepts for students without extensive math or science backgrounds. Course explores aspects of design, communications, energy, and manufacturing.
Au, Wi Qtrs. Prereq: GEC natural science course in Biology, Chemistry, or Physics. Not open to Engineering Majors.

202 Technologies Studies II: Analyzing Our World UGRD 5
Introduction to technology concepts for students without extensive math or science backgrounds. Course explores aspects of design, communications, energy, and manufacturing.

259 Fundamentals of Success for Engineering Students UGRD 5
Teaches time management and study skills to promote academic success. Students learn study skills and practice time management in relation to their engineering coursework.
Wi, Sp Qtrs. 2-2 hr cl. This class focuses on technical courses and is therefore limited to engineering students.

293 Individual Studies in Engineering UGRD 1-5
Opportunity for first year students to participate in supervised individual engineering experiences. 293H (honors) may be available.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of Associate Dean for Academics or Faculty Coordinator for Freshmen Programs. Repeatable to a maximum of 5 or hrs. This course is graded S/U.

294 Group Studies in Engineering UGRD 1-6
Special topics of general interest to engineering students. 294H (honors) may be available.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 12 or hrs. This course is graded S/U.

360.01 History of Ancient Engineering UGRD 5
History of ancient engineers, engineering processes and products. Winter 3.5 hr cl. Prereq: English 110 or equiv. GEC historical survey course.

360.02 History of American Technology UGRD 5
History of the interaction of American technology and society from colonial times to the present. Sp Qtr. 3.5 hr cl. Prereq: English 110 or equiv. GEC historical study course.

367 American Attitudes about Technology UGRD 5
Exploration of various perspectives regarding the impact of engineering and technology on American culture.
Wi, Sp Qtrs. 2-2 hr cl. Prereq: English 110 or 111, and soph standing or above. GEC second writing and social diversity in the US course.

400.01 The Ohio State Engineer Magazine Staff UGRD 1-3
Students run and publish an engineering and architectural magazine that increases their knowledge by publishing informative articles and information on perspective employers and student events. Designed for writers, photographers, and other contributors to The Ohio State Engineer Magazine.
Prereq: Permission of magazine project advisor. Repeatable to a maximum of 10 or hrs. This course is graded S/U.

400.02 The Ohio State Engineer Magazine Management UGRD 1-3
Students run and publish an engineering and architectural magazine that increases their knowledge by publishing informative articles and information on perspective employers and student events. Designed for the student managers of The Ohio State Engineer Magazine.
Prereq: Permission of magazine project advisor. Repeatable to a maximum of 10 or hrs. This course is graded S/U.

491 Current Topics Undergraduate Colloquia, Workshops, & Seminars UGRD 1-5
Improving general knowledge and understanding of current topics of interest to engineering students through a systematic exploration of the topic.
Repeatable to a maximum of 5 or hrs. This course is graded S/U.

494 Group Studies in Engineering UGRD 1-6
Special topics of general interest to engineering students 494H (honors) may be available.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 12 or hrs.

510 Fundamentals of Engineering (FE) Examination Review UGRD 1
Wi Qtr. 2.5 hr cl. Prereq: Sr standing in the College of Engineering or have an Engineering degree, or permission of instructor. This course is graded S/U.
851 Engineering Capstone Collaboration UGRD 2-4
Students contract to collaborate with an engineering capstone design team for at least one quarter and contribute their disciplinary expertise.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of the Engineering department. Not open to Engineering majors. Repeatable to a maximum of 8 cr hrs.

582 Technology Issues Seminar UGRD 2
Lecture and discussion of current technological issues and their implications presented by leading experts in the area. Builds understanding of issues for informed citizenship.
Su, Au, Wi, Sp Qtrs. Prereq: 183.xx or 193.xx or 185 or 202. Repeatable to a maximum of 8 cr hrs.

658 Introduction to Multidisciplinary Engineering UGRD 3
Capstone Design
A multidisciplinary introduction to the modern engineering design principles, process, professional skills and specific tactical tools used for project management during design.
Au Qtr. Prereq: Rank 4 or graduate standing and permission of instructor. Not open to students with credit for 659.01 or 659.02.

659.01 Multidisciplinary Engineering Capstone Design UGRD 3
Project I
An engineering capstone design project experience in a multidisciplinary environment involving real world design projects.
Wi Qtr. Prereq: Rank 4 or graduate standing and permission of instructor. This course is Progress graded. Sequenced with 659.02. This is a progress course with a grade rendered upon completion of 659.02.

659.02 Multidisciplinary Engineering Capstone Design Project II
An engineering capstone design project experience in a multidisciplinary environment involving real world design projects.
Sp Qtr. Prereq: 659.01. Sequenced with 659.01.

680 Leading in Engineering Organizations UGRD 2
Understanding and utilizing keys to leading in engineering. Exposure to the underpinnings of leadership in engineering environments including tenets, theories, debates, strategies, and innovation techniques.
Sp Qtr. Prereq: Rank 3 or 4 or grad standing. Opportunity for students to interact with technical/engineering leaders from government and industry will be provided. Practical applications for new engineers will be developed.

689 Professional Practice in Engineering UGRD 0
Students complete a cooperative assignment in private industry or for a government agency; assignment is supervised by the employer and monitored and evaluated by the co-op program.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of the Director of the Co-op Program in Engineering. Repeatable. This course is graded S/U.

692 Service Learning in Engineering UGRD 1-4
Experiential education characterized by participation in an organized service activity connected to specific learning outcomes. Meets community needs and includes student reflection.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 8 cr hrs. Some projects involve domestic or international travel and travel expenses are the responsibility of the student.

694 Group Studies in Engineering UGRD 1-6
Special topics of general interest to engineering students. 694H (honors) may be available.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs.

695 Engineering Teamwork Seminar UGRD 1
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.
Wi Qtr. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

697 Study at a Foreign Institution UGRD 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for the work. 697H (honors) may be available.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of the Associate Dean of Undergraduate Education and Student Services. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

121 Graphic Presentation I UGRD 3
Presentation of three-dimensional subjects by precise graphics: orthographic, sectional, pictorial, and introduction to computer graphics.
Su, Au, Wi, Sp Qtrs. 2 2-hr cl and lab. VPA Admis Cond course.

122 Graphic Presentation II UGRD 3
Continuation of 121; elements of descriptive geometry, intersections, and development of surfaces, shade, and shadow.
Au, Wi, Sp Qtrs. 3-2 hr cl and lab. Prereq: 121. VPA Admis Cond course.

166 Engineering Graphics and Problem Solving UGRD 4
Introduction to 3-dimensional visualization and presentation with freehand, manual, and CADD methods; introduction to engineering problem solving and reporting.
Su, Au, Wi, Sp Qtrs. 4 2-hr cl. Prereq or concur: Math 150 or better; status as an engineering major, pre-major, or engineering undeclared, or written permission of instructor. Not open to students with credit for 110. VPA Admis Cond Course.

167.01 Problem Solving through Programming for Engineering Calculations and Computer Graphics
Solving engineering problems using computer programming; development of algorithms and program modules; solutions to major problems will be presented in an engineering report format. 80% C++, 20% MATLAB.
Su, Au, Wi, Sp Qtrs. 2 2-hr cl/lab. Prereq or concur: Math 151 or higher. Not open to students with credit for 200. VPA Admis Cond Course.

167.02 Problem Solving through Programming for Engineering Graphics
Solving engineering problems using computer programming; development of algorithms and program modules; solutions to major problems will be presented in an engineering report format. 80% MATLAB, 20% C++
Prereq or concur: Math 151 or higher.

204 Technical Drawing UGRD 3
Various systems of size description including precision dimensioning; fastening systems, and organization and preparation of engineering drawings, perspective, and computer graphics.
Au, Wi, Sp Qtrs. 2 2-hr cl and lab. Prereq: 121 or written permission of instructor.

294 Group Studies in Engineering Graphics UGRD 1-5
Group studies of specially selected topics.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

410 Computer Graphics UGRD 3
An advanced course in graphics with emphasis on the application of computer-generated graphics to the solution of engineering problems.
Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 166 or Engineer 182 or Engineer 194.07.

593 Individual Studies UGRD 1-5
Opportunity to pursue special-interest topics not otherwise offered.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

694 Group Studies in Engineering Graphics UGRD 1-5
Special topics in engineering graphics; topics, credit hours, and instructor announced the quarter preceding the offering.
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs.

794 Group Studies UGRD 1-5
Interdisciplinary topics related to engineering design, graphics, and vision.
Su, Au, Wi, Sp Qtrs. Arr cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

101 American Sign Language I UGRD 5
Speaking and listening skills in American Sign Language development at an informal conversational level; instruction occurs primarily in ASL without speech.
2 2-hr cl. GEC for lang course.

102 American Sign Language II UGRD 5
More complex conversations about self, others, activities; culture and politics of American Deaf Community explored.
2 2-hr cl. Prereq: 101 or equiv. GEC for lang course.

109.01 Intensive Writing and Reading I UGRD 5
First course in a two-course sequence that provides intensive practice in integrating academic reading and writing.
Prereq: English Placement Test score of 6. Not open to students with credit for 052, 060, 110W, 110, or 111. Credit may not count toward graduation in some degree programs.

109.02 Intensive Writing and Reading II UGRD 5
Second course in a two-course sequence that provides intensive practice in integrating academic reading and writing.
Prereq: 109.01. Not open to students with credit for 053, 060, 110W, 110, or 111. Credit may not count toward graduation in some degree programs.

110.01 First-Year English Composition UGRD 5
Practice in the fundamentals of expository writing, as illustrated in the student's own writing and in the essays of professional writers. 110.01H (honors) may be available.
No prerequisite except when testing determines 052, 053, 106, 107, 109.01, 109.02, 110, 110.03 or EduTL 108.01 to be required. Prereq: English Placement level 4 or 109.02 or EduTL 108.01. Not open to students with credit for 110, 110C, 110L, 110W, 110H, 111, 111H, or 167H. Not open to students with credit for 110, 110.02 or 110.03. This course is available for EM credit only through the AP program. GEC first writing course.
May be available as service learning course with 5 hours community service required at Lima campus only.

Engineering 185
186 English

110.01H Honors First-Year English Composition UGRD 5
Intensive practice in the fundamentals of writing for selected students, as illustrated in the student's own writing and in the essays of professional writers. Prereq: 28 or above on the English section of the ACT or 600 on the verbal section of the SAT; honors program or permission of department or instructor. Not open to students with credit for 110, 110H, 110.01, 110.02H. GEC first writing course.

110.02 First-Year English Composition UGRD 5
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 literature. 110.02H (honors) may be available. No prereq except when testing determines 052, 053, 106, 107, 109.01, 109.02, 110, 110H, or EduT 108.01 to be required. Prereq: English placement level 4 or 109.02 or EduTL 108.01. Not open to students with credit for 110, 110C, 110L, 110W, 111, 111H, or 167H. Not open to students with credit for 110.01, 110.01H, or 110.02. This course is available for EM credit only through the AP program. GEC first writing course.

110.02H Honors First-Year English Composition UGRD 5
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 literature. Prereq: 28 or above on the English section of the ACT or 600 on the verbal section of the SAT; honors program or permission of department or instructor. Not open to students with credit for 110, 110H, 110.01 or 110.01H. GEC first writing course.

110.03 First-Year English Composition UGRD 5
Practice in the fundamentals of expository writing, as illustrated in the student's own writing and in the essays of professional writers. Intensive practice in the fundamentals of expository writing. No prereq except when testing determines 052, 053, 106, 107, 109.01, 109.02, 110, 110H, or EduT 108.01 to be required. Prereq: English placement level 5, placement level 4 allowed if student requests service. Not open to students with credit for 110, 110C, 110L, 110W, 111, 111H, 111H or 167H. Must be taken concurrent with 110.03. Not open to students with credit for 110, 110.01, 110.02. This course is available for EM credit only through the AP program. GEC first writing course.

167H First-Year Writing Seminar in the Humanities UGRD 5
Intensive critical reading and writing concerning central issues in the humanities. Prereq: A score of 4 or 5 on the Advanced Placement Test, which earns EM credit for 110. GEC arts and humanities and cultures course. This course is graded S/U.

201 Selected Works of British Literature: Medieval through 1800 UGRD 5
An introductory critical study of the works of major British writers from 800 to 1800. 201H (honors) may be available. Prereq: 110 or 111 or equiv. 201H is required of non-honors English majors. GEC arts and humanities and social diversity - international issues (Western) course.

201H Selected Works of British Literature: Medieval through 1800 UGRD 5
An introductory critical study of the works of major British writers from 800 to 1800. Prereq: honors program and 110H or 111H or equiv; or permission of department or instructor. 201H is required of non-honors English majors. GEC arts and humanities and social diversity - international issues (Western) course.

202 Selected Works of British Literature: 1800 to the Present UGRD 5
An introductory critical study of works of major British writers of the 19th and 20th centuries. 202H (honors) may be available. Prereq: 110 or 111 or equiv. Not open to students with credit for 284 or 285. 202H is required of non-honors English majors. GEC arts and humanities and social diversity - international issues (Western) course.

220 Introduction to Shakespeare UGRD 5
Study of selected plays designed to give an understanding of drama as theatrical art and as an interpretation of fundamental human experience. 220H (honors) may be available. Prereq: 110 or 111 or equiv. GEC arts and humanities and social diversity - international issues (Western) course.

220H Introduction to Shakespeare. UGRD 5
Study of selected plays designed to give an understanding of drama as theatrical art and as an interpretation of fundamental human experience. Prereq: honors program and 110H or 111H or equiv; or permission of department or instructor. GEC arts and humanities and social diversity - international issues (Western) course.

260 Introduction to Poetry UGRD 5
Designed to help students understand and appreciate poetry through intensive study of a representative group of poems. 260H (honors) may be available. Prereq: 110 or 110.xx or 111 or 111.xx. GEC arts and humanities course.

261 Introduction to Fiction UGRD 5
Examination of the elements of fiction – plot, character, setting, narrative, perspective, theme, etc. – and their various interrelationships; comparisons with nonfictional narrative may be included. 261H (honors) may be available. Prereq: 110 or 111 or equiv. GEC arts and humanities course.

262 Introduction to Drama UGRD 5
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. 262H (honors) may be available. Prereq: 110 or 110.xx or 111 or 111.xx. GEC arts and humanities course.

262H Introduction to Drama UGRD 5
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: Honors program, and 110 or 110.xx or 111.xx; or permission of department or instructor. GEC arts and humanities course.

263 Introduction to Film UGRD 5
Introduction to methods of reading film texts by analyzing cinema as technique, as system, and as cultural project. 1-3 hr-cl. Prereq: English 110 or 110.xx or 111 or 111.xx. GEC arts and humanities course.

264 Introduction to Reading Popular Culture UGRD 5
Introduction to the analysis of popular culture texts, with special emphasis on the relationship between popular culture studies and literary studies. Prereq: 11 or equiv. Not open to students with credit for CompStud 264. Cross-listed in Comparative Studies. GEC arts and humanities and cultures course.

265 Writing of Fiction I UGRD 5
Practice in the writing of fiction; analysis and discussion of student work, with some attention to general methods of fiction and the publishing situation. Prereq: English 110 or 110.xx or 111 or 111.xx. Repeatable to a maximum of 10 cr hrs.

266 Writing of Poetry I UGRD 5
Practice in the writing of poetry; emphasis on the students' own work, with reference to established poetic patterns and established poets. Prereq: English 110 or 110.xx or 111 or 111.xx. Repeatable to a maximum of 10 cr hrs.

268 Writing of Creative Nonfiction I UGRD 5
Practice in the writing of creative nonfiction; analysis and discussion of student work, with reference to the general methods and scope of the genre. Workshop-seminar. 2-2 hr-cl. Prereq: English 110 or 111 or equiv. Repeatable to a maximum of 10 cr hrs.

269 Digital Media Composing UGRD 5
A writing course where students analyze and compose digital media texts while studying complex forms and practices of textual production. Prereq: English 110 or equiv. GEC arts and humanities course.

270 Introduction to Folklore UGRD 5
A general study of the field of folklore including basic approaches and a survey of primary folk materials: folktales, legends, folksongs, ballads, and folk beliefs. Prereq: English 110 or 110.xx or 111 or 111.xx. GEC arts and humanities and social diversity course.

271 Introduction to English Language Study UGRD 5
An introduction to the grammar, history, and social and regional dialects of the English language. Prereq: English 110 or 110.xx or 111 or 111.xx. Not open to students with credit for 507, 669, 671, 672, or Linguis 601. GEC arts and humanities course.

275 Thematic Approaches to Literature UGRD 5
An introduction to literature through the examination of a major theme as treated in different genres and periods; topic varies quarterly. Prereq: English 110 or 110.xx or 111 or 111.xx. Repeatable to a maximum of 10 cr hrs. GEC arts and humanities course.

276 Introduction to Rhetoric UGRD 5
Study of developments in rhetorical theory, teaching, criticism, and practice through examination of representative figures, texts, movements and periods from antiquity to the present. Prereq: English 110 or 110.xx or 111 or 111.xx. GEC arts and humanities course.

277 Introduction to Disability Studies UGRD 5
Foundational concepts and issues in disability studies; introduction to the sociopolitical models of disability. 2-2 hr-cl. Prereq: English 110 or 110.xx or 111 or 111.xx. GEC arts and humanities course.

280 The English Bible UGRD 5
The Bible in English translation, with special attention to its literary qualities, conceptual content and development within history. 280H (honors) may be available. Prereq: 110 or 110.xx or 111 or 111.xx. GEC arts and humanities course.

281 Introduction to African-American Literature UGRD 5
A study of representative literary works by African-American writers from 1760 to the present. Prereq: English 110 or 110.xx or 111 or 111.xx. Offered in cooperation with African-American and African Studies. GEC arts and humanities and social diversity in the US course.

282 Introduction to Queer Studies UGRD 5
Introduces and problematizes foundational concepts of the interdisciplinary field of queer studies, highlighting the intersections of sexuality with race, class, and nationality. Au Qtr. Not available to students with credit for WGSS 282. GEC arts and humanities and social diversity in the US course. Cross-listed in WGSS.
290 Colonial and U.S. Literature to 1865 UGRD 5
Introductory study of significant works of U.S. literature from its Colonial origins to 1865.
Prereq: English 110 or 110.xx or 111 or 111.xx. GEC arts and hums lit course. Either 290 or 291 is required of non-honors English majors.

291 U.S. Literature: 1865 to Present UGRD 5
Introductory study of significant works of U.S. literature from 1865 to the present.
Prereq: 110 or 111 or equiv. Either 290 or 291 is required of non-honors English majors. GEC arts and hums lit course.

294 Group Studies UGRD 3-5
Topic varies from quarter to quarter on subjects not otherwise covered by English courses.
Prereq: English 110 or 110.xx or 111 or 111.xx. Repeatable to a maximum of 30 or hrs.

296H Honors Seminar: Literature and Intellectual Movements UGRD 5
Studies in the relationship of works of literature to their general intellectual contexts, involving such topics as Deism, Primitivism, Freudian psychology; topic varies quarterly. Prereq: CPRHF of 3.00 or better, with 3.50 or better in English, and permission of dept.

304 Business and Professional Writing UGRD 5
The study of principles and the practice of techniques associated with business and professional writing; emphasis on the style, organization, and conventions appropriate to business letters and reports.
2-2 hr cl. Prereq: 110 or 111 or equiv, and jr or sr standing.

305 Technical Writing UGRD 3
Study of principles and practices of technical writing. Emphasis on the style, organization, and conventions of technical and research reports, proposals, memoranda, professional correspondence, etc.
2.1-3 hr cl. Prereq: 110 or 111 or equiv.

361 Narrative and Medicine UGRD 5
Study of fictional and nonfictional narratives offering diverse perspectives on such medical issues as illness, aging, treatment, health and healing, and doctor-patient relationships.
Prereq: 110 or 111 or equivalent. GEC arts and hums literature course.

364 Special Topics in Reading Popular Culture UGRD 5
Focused study in reading popular culture texts, organized around a single theme or medium.
Prereq: 110 or equiv. GEC arts and hums cultures and ideas course.

367.01 Language, Identity and Culture in the U.S. Experience UGRD 5
Study and analysis of poetry, fiction, and drama, and issues in literary studies; intensive practice in writing critical essays in preparation for upper-division course work in English. 367.01H (honors) may be available.
Prereq: Credit for 110 through regular course enrollment and soph standing; or EM credit for 110; or a declared major in English. Not open to students with credit for 210, 267, 267H, 301, 303, 305, or 367. Only one English 367 decimal subdivision may be taken for credit. GEC second writing and social diversity in the US course.

367.01H Language, Identity and Culture in the U.S. Experience UGRD 5
Study and analysis of poetry, fiction, and drama, and issues in literary studies; intensive practice in writing critical essays in preparation for upper-division course work in English. 367.01H (honors) may be available.
Prereq: Credit for 110 through regular course enrollment and soph standing; or EM credit for 110; or a declared major in English. Not open to students with credit for 210, 267, 267H, 301, 303, 305, or 367. Only one English 367 decimal subdivision may be taken for credit. GEC second writing and social diversity in the US course.

367.02 Literature in the U.S. Experience UGRD 5
Discussion and practice of the conventions, practices, and expectations of scholarly reading of literature and expository writing on issues related to diversity within the U.S. experience.
Prereq: Credit for 110 through regular course enrollment and soph standing; or EM credit for 110; or a declared major in English. Not open to students with credit for 210, 267, 267H, 301, 303, 305, or 367. Only one English 367 decimal subdivision may be taken for credit. GEC second writing and social diversity in the US and arts and hums lit (for BS majors only) course.

367.02H Literature in the U.S. Experience UGRD 5
Discussion and practice of the conventions, practices, and expectations of scholarly reading of literature and expository writing on issues related to diversity within the U.S. experience.
Prereq: Honors program or permission of department or instructor; EM credit for 110, or credit for 110 through regular course enrollment , or a declared major in English. Not open to students with credit for 210, 267, 267H, 301, 303, 305, or 367. Only one English 367 decimal subdivision may be taken for credit. GEC second writing and social diversity in the US and arts and hums lit (for BS majors only) course.

367.03 Documentary in the U.S. Experience UGRD 5
An intermediate course that extends and refines skills in critical reading and expository writing through analysis and composition of written texts, video, and documentaries. 367.03H (honors) may be available.
Prereq: Credit for 110 through regular course enrollment and soph standing; or EM credit for 110; or a declared major in English. Not open to students with credit for 210, 267, 267H, 301, 303, 305, or 367. Only one English 367 decimal subdivision may be taken for credit. GEC second writing course.

367.03H Honors Documentary in the U.S. Experience UGRD 5
An intermediate course that extends and refines skills in critical reading and expository writing through analysis and composition of written texts, video, and documentaries.
Prereq: Honors program or permission of department or instructor; EM credit for 110, or credit for 110 through regular course enrollment, or a declared major in English. Not open to students with credit for 210, 267, 267H, 301, 303, 305, or 367. Only one English 367 decimal subdivision may be taken for credit. GEC second writing course.

367.04 Technology and Science in the U.S. Experience UGRD 5
Explores how changes in technology impact our culture and relationships; students build and expand skills in rhetorical analysis and composition through experimentation with new forms of communicating. 367.04H (honors) may be available.
Prereq: Credit for 110 through regular course enrollment and soph standing; or EM credit for 110; or a declared major in English. Not open to students with credit for 210, 267, 267H, 301, 303, 305, or 367. Only one English 367 decimal subdivision may be taken for credit. GEC second writing course.

367.05H The U.S. Folk Experience UGRD 5
Basic concepts of American folklore and ethnography, including folk groups, tradition, and fieldwork methodology, focusing on how these concepts and methodologies contribute to the development of critical reading, writing, and thinking skills. 367.05H (honors) may be available.
Prereq: Credit for 110 through regular course enrollment and soph standing; or EM credit for 110; or a declared major in English. Not open to students with credit for 210, 267, 267H, 301, 303, 305, or 367. Only one English 367 decimal subdivision may be taken for credit. GEC second writing course.

367.06 Intermediate Essay Writing: Composing U.S. Communities UGRD 5
Discussion, analysis, and writing about how rhetorical discourse helps to define, sustain, and challenge American society.
Prereq: Credit for 110 through regular course enrollment and soph standing; or EM credit for 110; or a declared major in English. Not open to students with credit for 210, 267, 267H, 301, 303, 305, or 367. Only one English 367 decimal subdivision may be taken for credit. GEC second writing course.

367.07 Intermediate Essay Writing: Issues of Diversity UGRD 5
Discussion, analysis and writing about issues of diversity as they affect communication in U.S. workplaces.
Prereq: Credit for 110 through regular course enrollment and soph standing; or EM credit for 110; or a declared major in English. Not open to students with credit for 210, 267, 267H, 301, 303, 305, or 367. Only one English 367 decimal subdivision may be taken for credit. GEC second writing course.

372 Science Fiction and/or Fantasy UGRD 5
Introduction to the tradition and practice of speculative writing. Provides students the opportunity to examine and compare works of science fiction and/or fantasy.
Wi Qtr. Prereq: 110 or equivalent. GEC arts and hums lit course.

378 Special Topics in Film and Literature UGRD 5
Focuses on the relationship between film and literature; topics may include adaptation, cross-media themes and modes, influence of cinema on literature and vice versa.
1.3-4 hr cl. Prereq: 110 or 111 or equiv. GEC arts and hums cultures and ideas course.

398 Writing for English Majors UGRD 5
Analysis of poetry, fiction, and drama, and issues in literary studies; intensive practice in writing critical essays in preparation for upper-division course work in English. 398H (honors) may be available.
Prereq: 110 or 111 or equiv, a 367 writing course, and a declared English major; Rank 4 students must have permission of the director of undergraduate studies. Not open to students with credit for 302. Required of English majors; enrollment limited to English majors except by permission of dept. GEC third writing course.

398H Honors Writing for English Majors UGRD 5
Intensive practice in writing various kinds of analyses of literary texts.
405 Special Topics in Professional Communication UGRD 5
Topics vary; possible topics include technical communication, technical editing, managerial communication, international business communication, visual rhetoric, writing for the web, and scientific writing. 2-2 hr cl. Prereq: A 367 second writing course. Repeatable to a maximum of 10 cr hrs.

465 Intermediate Creative Writing: Special Topics in Fiction UGRD 5
Designed for students who have experience with the basic elements of fiction writing. Advanced techniques in fiction writing will be explored. Au Qtr: 5 cr. Pre-reg: C or better in 265. Repeatable to a maximum of 10 cr hrs.

466 Intermediate Creative Writing: Special Topics in Poetry UGRD 5
Poetry workshop will explore the many figures a poem can take and will include practical and theoretical study of various poetic forms. Au Qtr: 5 cr. Pre-reg: C or better in 266. Repeatable to a maximum of 10 cr hrs.

467 Issues and Methods in Tutoring Writing UGRD 5
Theories and practices in tutoring and writing; explores the writing-learning connections and prepares students to work as writing consultants/facilitors for small writing groups. Au, Wi Qtrs. Prereq: 110 or 111 or equiv. Not open to students with credit for HumCol 467. Cross-listed in HumCol.

468 Intermediate Creative Writing: Special Topics in Creative Non-Fiction UGRD 5
Designed for students who have experience with the basic elements of creative non-fiction writing. Advanced techniques will be explored. Au Qtr: 5 cr. Pre-reg: C or better in 265. Repeatable to a maximum of 10 cr hrs.

505 Language and the Black Experience UGRD 5
Introduction to the structure, history, and use of distinctive varieties of English used by and among many African Americans in the U.S. Prereq: English 110 or 110.01 or 110.02 or 110.03. Not open to students with credit for AfrAmSt 505 or Linguist 505. Cross-listed in African American and African Studies and Linguistics.

505S Language and the Black Experience UGRD 5
Introduction to the structure, history, and use of distinctive varieties of English used by and among many African Americans in the U.S. Sp Qtr. Prereq: Linguist 201 or Linguist 303 or Linguist 367.01 or Linguist 367.32 or Linguist 372. Not open to students with credit for AfrAmSt 505S or Linguist 505S. Cross-listed in AfrAmSt and Linguist. Service Learning course.

513 Introduction to Medieval Literature UGRD 5
The study of masterpieces from the Middle Ages, chosen for their values in interpreting medieval culture as well as for their independent literary worth. Prereg: 10 cr of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs.

514 Middle English Literature UGRD 5
A study of non-Chaucerian classics from late medieval England, such as Sir Gawain and the Green Knight, Piers Plowman, and The Book of Margery Kempe. 2-2 hr cl. Prereq: 10 cr of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs.

515 Chaucer UGRD 5
A close study of Troilus and Criseyde and The Canterbury Tales as introduction to the artist and his period. Prereg: 10 cr of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs.

520.01 Shakespeare UGRD 5
A critical consideration of the art, personality, and achievement of Shakespeare in the light of Renaissance and modern significance. Prereg: 10 cr of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs. Not open to students with credit for 520.

520.02 Special Topics in Shakespeare UGRD 5
Topics include genre-specific courses (e.g. the Histories), period-specific courses (e.g. Elizabethan Shakespeare), and theme-specific courses (e.g. Shakespeare and religion). Prereq: 520 or 520.01 or equiv.

521 16th-Century Literature UGRD 5
A study of Tudor prose and poetry as they exemplify literary art and as they reflect the creative and inquiring temper of the age. Not open to students with credit for 621.

522 Early 17th-Century Literature UGRD 5
A study of the poetry and prose of 1600-1660, including the major works of Milton. Prereg: 10 cr of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs.

531 Restoration and Early 18th-Century Literature UGRD 5
Study of poetry, prose and drama from the Restoration to the 1730s; authors may include Behn, Swift, and Wycherley. Prereg: 10 cr of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs.

533 Literature of the Eighteenth Century, 1740-1800 UGRD 5
Study of poetry, prose, and drama from the 1740s to the end of the eighteenth century; authors may include Johnson, Burke, Sheridan, and Wolstencroft. 2-2 hr cl. Prereq: 10 cr of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs. Not open to students with credit for 535 prior to Au Qtr 2002.

535 The Early British Novel: Origins to the 1830s UGRD 5
Readings in the Early British Novel before the 1830s, with particular attention to novels of the 18th century; authors may include Fielding, Richardson, Burney, and Austen. Prereg: 10 cr of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs.

540 Poetry and Poetics of the British Romantic Period UGRD 5
Study of Romantic poetry and poetics: readings in Blake, Wordsworth, Coleridge, Byron, Shelley, Keats, and Mary Shelley. Prereg: 10 cr of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs.

541 Victorian Poetry and Poetics UGRD 5
Study of Victorian poetry and poetics; readings in Tennyson, the Brownings, Arnold, the Rossettis, Swinburne, Hopkins, and Hardy. Prereg: 10 cr of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs.

542 The Victorian Novel UGRD 5
Readings in a group of representative Victorian novelists, such as George Eliot, Charles Dickens, and William Thackeray, with special emphasis upon social and humanistic values. Prereg: 10 cr of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs. Not open to students with credit for 641.

543 20th-Century British Fiction UGRD 5
A study of the development of British fiction after 1900, with emphasis on such major novelists as Conrad, Joyce, Lawrence, and Woolf. Prereg: 10 cr of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs. Not open to students with credit for 643.

547 20th-Century Poetry UGRD 5
A study of 20th-century American and British poetry, with emphasis on such major figures as Frost, Yeats, Stevens, Eliot, Williams, Auden, Bishop, and Langston Hughes. Prereg: 10 cr of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs.

549 Modern Drama UGRD 5
An historical and critical examination of the major developments, personalities, and achievements in the drama of Europe and America since the advent of Ibsen. Prereg: 10 cr of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs. Not open to students with credit for 649.

550 Colonial and U.S. Literature to 1830 UGRD 5
Introduction to selected works of early U.S. and Colonial literature including such writers as Anne Bradstreet, Phillis Wheatley, Benjamin Franklin, Washington Irving, James Fenimore Cooper. Prereg: 10 cr of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs.

551 U.S. Literature, 1830-1865 UGRD 5
An introduction to the major American writers of the mid-19th century: Poe, Hawthorne, Melville Emerson, Thoreau, and Whitman. Prereg: 10 cr of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs. Not open to students with credit for 551E.

551E U.S. Literature, 1830-1865 UGRD 5
An introduction to the major American writers of the mid-19th century: Poe, Hawthorne, Melville Emerson, Thoreau, and Whitman. 551E may be available for honors embodied experience.

551E U.S. Literature, 1830-1865 UGRD 5
An introduction to the major American writers of the mid-19th century: Poe, Hawthorne, Melville Emerson, Thoreau, and Whitman. 551E may be available for honors embodied experience.

552 U.S. Literature, 1865-1914 UGRD 5
Studies in fiction and poetry emphasizing such major figures as Twain, Howells, James, Dickinson, Robinson, Crane, Dreiser, and Willa Cather. Prereg: 10 cr of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs.

553 20th-Century U.S. Fiction UGRD 5
A study of American fiction after 1914, with emphasis on the work of such major figures as Anderson, Fitzgerald, Hemingway, and Faulkner. Prereg: 10 cr of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs.

559 Introduction to Narrative and Narrative Theory UGRD 5
Study of narrative in its different manifestations, e.g., novel, autobiography, film, legal testimony, and of theories of its form and significance. Prereg: 10 cr of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs.
560 Special Topics in Poetry UGRD 5
Topic varies; examples: the dramatic monologue; epic and mock epic; the religious lyric; narrative poetry.
Prereq: 10 cr hrs of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs. Repeatable to a maximum of 10 cr hrs.

561 Special Topics in Fictional and Nonfictional Narrative UGRD 5
Topic may focus on fiction, nonfiction, or both; examples: the novel in the city; character narrators in fiction and autobiography.
Prereq: 10 cr hrs of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs. Repeatable to a maximum of 10 cr hrs.

562 Special Topics in Drama UGRD 5
Topic varies; examples: the revenge play; Restoration and 18th-century drama; tragedy; the play within the play.
Prereq: 10 cr hrs of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs. Repeatable to a maximum of 10 cr hrs.

563 Contemporary Literature UGRD 5
A study of prose and poetry written since approximately 1945.
Prereq: 10 cr hrs of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs.

564.01 Special Topics in a Major Author: Medieval and Renaissance British Literature UGRD 5
Intensive study of the work of one of the major authors of English and American Literature.
Prereq: 10 cr hrs of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs.

564.02 Special Topics in a Major Author: 18th and 19th Century British Literature UGRD 5
Intensive study of the work of one of the major authors of English and American Literature.
Prereq: 10 cr hrs of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs.

564.03 Special Topics in a Major Author: American Literature to 1900 UGRD 5
Intensive study of the work of one of the major authors of English and American Literature.
Prereq: 10 cr hrs of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs.

564.04 Special Topics in a Major Author: 20th Century Literature in English UGRD 5
Intensive study of the work of one of the major authors of English and American Literature.
Prereq: 10 cr hrs of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs.

565 Writing of Fiction II UGRD 5
Practice in the writing of fiction; continuation of 265 at an advanced level.
Prereq: 265 or equiv and permission of instructor. Repeatable to a maximum of 15 cr hrs. including cr hrs earned in 665.

566 Writing of Poetry II UGRD 5
Practice in the writing of poetry; continuation of 266 at an advanced level.
Prereq: 266 or equiv and permission of instructor. Repeatable to a maximum of 15 cr hrs. including cr hrs earned in 666.
566E may be available for honors embedded experience.

566E Writing of Poetry II UGRD 5
Practice in the writing of poetry; continuation of 266 at an advanced level.
Prereq: 266 or equiv and permission of instructor. Repeatable to a maximum of 15 cr hrs. including cr hrs earned in 666.
566E may be available for honors embedded experience.

567 Rhetoric and Community Service: A Writing Seminar UGRD 5
The study of issues relating to rhetoric, community service, and intercultural communication while serving as volunteers and as writers for a local community service agency.
2-2 hr cl, 2 hrs on site. Prereq: 110 and one of the 367 decimals. Repeatable to a maximum of 10 hrs.

568 Writing of Creative Nonfiction II UGRD 5
Practice in the writing of essays and book-length creative nonfiction; continuation of 268 at an advanced level.
Prereq: 268 or equiv, and permission of instructor. Repeatable to a maximum of 15 cr hrs. including cr hrs earned in 664.

569 Digital Media and English Studies UGRD 5
A critical examination of the intersection of English studies and the emergent technologies that are used to acquire and create knowledge in the discipline.
2-2 hr cl. Prereq: 10 cr hrs of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs. Repeatable to a maximum of 10 cr hrs.

570 Introduction to the History of English UGRD 5
A study of the historical development of English giving attention to social factors associated with language changes in the phonology, morphology, syntax, lexicon, and discourse structure.
Prereq: 10 cr hrs of English at 200 or 300 level or equiv, or permission of instructor. Not open to students with credit for 274.

571 Studies in the English Language UGRD 5
Topic varies; examples: American English; the sociology of American dialects; language and style.
Prereq: 10 cr hrs of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs. Repeatable to a maximum of 10 cr hrs.

572 Traditional Grammar and Usage UGRD 5
An examination of terminology and structures traditionally associated with the study of English grammar and of usage rules, especially problematical ones, governing edited written American English.
Prereq: 10 cr hrs of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs.

573.01 Research Theory and Analysis of Discourse UGRD 5
Examination of persuasive strategies in a representative selection of textual genres, including oratory, news articles, editorials, essays, advertisements, fiction, poetry, and film.
Prereq: 10 cr hrs of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs.

573.01E Research Theory and Analysis of Discourse UGRD 5
Examination of persuasive strategies in a representative selection of textual genres, including oratory, news articles, editorials, essays, advertisements, fiction, poetry, and film.
Prereq: 10 cr hrs of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs.
573.01E may be available for honors embedded experience.

573.02 Research Theory and Analysis of Social Action UGRD 5
Examination of persuasive strategies in social interaction, including collective social movements, political protests, cultural trends, rituals and ceremonies, and everyday practices.
Prereq: 10 cr hrs of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs.

574 History and Theories of Writing UGRD 5
Study of the origins, definitions, and development of writing, with varying perspectives on historical, technological, theoretical, and ideological issues.
Prereq: 10 cr hrs of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs.

575 Special Topics in Literary Forms and Themes UGRD 5
Topic varies; examples: ironic forms; the Trojan War in English literature; the hero and the anti-hero; pastoralism and romance.
Prereq: 10 cr hrs of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs. Repeatable to a maximum of 10 cr hrs. E575 may be offered for honors embedded experience.

576.01 History of Critical Theory: Plato to Aesthetics UGRD 5
Study of the developments and basic texts in literary criticism and critical theory from Plato to Oscar Wilde.
2-2 hr cl. Prereq: 10 cr hrs of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs.

576.02 History of Critical Theory: 1900 to Present UGRD 5
Study of the developments and basic texts in literary criticism and critical theory from 1900 to the present.
2-2 hr cl. Prereq: 10 cr hrs of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs.

576.03 Issues and Movements in Critical Theory UGRD 5
Study of selected issues or movements in critical theory; topics may include feminist theory, postmodernism, narrative theory, mass culture and queer theory.
2-2 hr cl. Prereq: 10 cr hrs of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs.

577.01 Studies in Folklore: Folk Groups and Communities UGRD 5
Study of group identities, group concerns, expressive strategies of particular groups; African-American folklore; folklore and the elderly; women and folklore; ethnicity, identity, heritage.
2-2 hr cl. Prereq: 10 cr hrs of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs.

577.02 Studies in Folklore: Folklore Genres: Form, Meaning and Use UGRD 5
Study of the relationship between cultural forms, community interpretations, and social uses; topics include fairy tales; festival; folksong; the joke; narrative, self, and society.
2-2 hr cl. Prereq: 10 cr hrs of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs.

577.03 Studies in Folklore: Issues and Methods in the Study of Folklore UGRD 5
General concerns in the study of folklore; topics include ethnography and fieldwork; folklore and public policy; tourism and museums; folklore and memory; folklore and race.
2-2 hr cl. Prereq: 10 cr hrs of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs.
578 Special Topics in Film
Examination of particular directors, themes, genres, or movements in cinema; topics may include particular directors (Orson Welles), periods (The Sixties), genres (horror). 1-3 hr, 1-2 hr cr. Prereq: 10 cr hrs of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs. Repeatable to a maximum of 15 cr hrs.

579 Special Topics in Nonfiction
Critical analysis of nonfiction written discourse with varied topics, e.g., Victorian prose, American nature writing, business and professional writing, rhetorical discourse, biography and autobiography. 2-2 hr cl. Prereq: 10 cr hrs of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs. Repeatable to a maximum of 10 cr hrs.

580 Special Topics in Gay and Lesbian Language and Literature
Issues in the representation of gay and lesbian desires, identities, and cultures, through the study of literature, film, folklore, or language. 2-2 hr cl. Prereq: 10 cr hrs of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs. Repeatable to a maximum of 10 cr hrs.

581 Special Topics in U.S. Ethnic Literatures
Study of selected issues or forms in U.S. ethnic literatures and cultures; topic varies: Native American autobiography; Asian-American poetry, Latino/Latina novel. 2-2 hr cl. Prereq: 10 cr hrs of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs. Repeatable to a maximum of 10 cr hrs.

582 Studies in African-American Literature
Topic varies; examples: Neo-slave narratives; the Harlem Renaissance; literature by African-American women. 2-2 hr cl. Prereq: 10 cr hrs of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs. Repeatable to a maximum of 10 cr hrs.

583 Special Topics in World Literature in English
Study of literatures written in English and produced outside of the U.S. and Britain; topics include colonial/postcolonial writing, regional literature, theoretical and historical approaches, genres. 2-2 hr cl. Prereq: 10 cr hrs of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs. Repeatable to a maximum of 10 cr hrs.

585.01 Topics in Literary Studies
This foundational course explores how our understanding of literary and its relationships to ongoing societies, cultures, and social change has been challenged and revised. Reconsiders the "great debates" about literacy—oral v. written, etc.—through the critical study of literary's acquisition, practice or use, and consequences/concomitants. Prereq: 10 cr credit hours of English courses at the 200 or 300 level or permission of instructor. Prereq: 10 hours of English courses at the 200 or 300 level or permission of instructor. Not open to students with credit for CompStd 585.01. History will be cross-listing the 585.02 version of the class only. They will offer it as 585. Comparative Studies will cross-list both versions (585.01 and 585.02) of the class. Cross-listed with CompStd 585.01.

585.02 History of Literacy
This foundational course explores how our understanding of literary and its relationships to ongoing societies, cultures, and social change has been challenged and revised. This course seeks to understand the history of literacy by examining literacy's contributions to making the modern world, and social changes' impacts on literacy. Prereq: 10 credit hours of English courses at the 200 or 300 level or permission of instructor. Prereq: 10 credit hours of English courses at the 200 or 300 level or permission of instructor. Not open to students with credit for History 585 or CompStd 585.02. History will be cross-listing the 585.02 version of the class only. They will offer it as 585. Comparative Studies will cross-list both versions (585.01 and 585.02) of the class. Cross-listed with History 585 and CompStd 585.02.

586 Studies in American Indian Literature and Culture
Focused study of a topic in American Indian literary and cultural studies. Prereq: 110, 110.01, 110.02 or 110.03. Repeatable to a maximum of 10 cr hrs.

587 Studies in Asian American Literature and Culture
Focused study of a topic in Asian American literary and cultural studies. Prereq: 110, 110.01, 110.02 or 110.03. Repeatable to a maximum of 10 cr hrs. including or hrs earned in CompStd 543. Cross-listed with CompStd 543.

588 Studies in Latino/a Literature and Culture
Focused study of a topic in Latino/a literary and cultural studies. Prereq: 110, 110.01, 110.02 or 110.03. Repeatable to a maximum of 10 cr hrs. including or hrs earned in CompStd 544. Cross-listed with CompStd 544.

590.01 Honors Seminar: Major Periods in Literary History: The Middle Ages
Intensive study of one of the major periods of English and American literature: The Middle Ages. Prereq: CPHR of 3.00 or better, with a 3.50 or better in English, and permission of dept.

590.02 Honors Seminar: Major Periods in Literary History: The Renaissance
Intensive study of one of the major periods of English and American literature: The Renaissance. Prereq: CPHR of 3.00 or better, with a 3.50 or better in English, and permission of dept.

590.03 Honors Seminar: Major Periods in Literary History: 18th Century British Literature
Intensive study of one of the major periods of English and American literature: 18th Century British Literature. Prereq: CPHR of 3.00 or better, with a 3.50 or better in English, and permission of dept.

590.04 Honors Seminar: Major Periods in Literary History: Romanticism
Intensive study of one of the major periods of English and American literature: Romanticism. Prereq: CPHR of 3.00 or better, with a 3.50 or better in English, and permission of dept.

590.05 Honors Seminar: Major Periods in Literary History: The Later 19th Century
Intensive study of one of the major periods of English and American literature: The Later 19th Century. Prereq: CPHR of 3.00 or better, with a 3.50 or better in English, and permission of dept.

590.06 Honors Seminar: Major Periods in Literary History: The Modern Period
Intensive study of one of the major periods of English and American literature: The Modern Period. Prereq: CPHR of 3.00 or better, with a 3.50 or better in English, and permission of dept.

590.07 Honors Seminar: Major Periods in Literary History: Literature in English after 1945
Intensive study of one of the major periods of English and American literature: Intensive study of literature written in English after World War II, examining influential intellectual and literary movements and theories of the time. 2-2 hr cl. Prereq: CPHR of 3.00 or better, with a 3.50 or better in English, and permission of dept.

590.08 Honors Seminar: Major Periods in Literary History: U.S. and Colonial Literature
Intensive study of one of the major periods of English and American literature: U.S. and Colonial Literature. 2-2 hr cl. Prereq: CPHR of 3.00 or better, with a 3.50 or better in English, and permission of dept.

591.01H Honors Seminar: Special Topics in the Study of Creative Writing
A seminar in literary forms and themes, with a significant creative writing component. 2-2 hr cl. Prereq: 265 or 266 or 269; and enrollment in an honors program, or permission of instructor. Repeatable to a maximum of 10 cr hrs.

591.02H Honors Seminar: Special Topics in the Study of Rhetoric
Study of rhetorical theories, practices, and literacies through examination of rhetorical communities, texts, movements, and periods both past and present. Prereq: Enrollment in an honors program or permission of instructor. Repeatable to a maximum of 10 cr hrs.

592 Special Topics in Women in Literature
Close examination from feminist perspectives of literature by or about women; central topic varies, for example, biography or autobiography, women as artists, images, and stereotypes. Prereq: 10 cr hrs of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs. Repeatable to a maximum of 10 cr hrs. Offered in cooperation with Women's Studies.

593 Literature and Law
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 cr hrs of English courses at the 200 or 300 level or permission of instructor. A 367.xx in any subject is acceptable towards the 10 cr hrs.

595 Literary Locations
Study of sites of literary importance, and texts connected with them in the British Isles, Ireland, and elsewhere. Concludes with 10-day visit to location. Wi, Sp Qtrs. 2-2 hr cl. Prereq: Rank 2 or above; cumulative GPA of 3.0; completion of at least 10 cr hrs in English beyond 110; permission of instructor. Repeatable to a maximum of 10 cr hrs. Taught in conjunction with English 697; Sp Qtr focuses on London; Wi Qtr locations vary.

596 Studies in Literature and the Other Arts
Studies in English literature in interdisciplinary context. Period and context will vary: possible topics are modernism and music, romanticism and painting, Elizabethan literature and iconography. Prereq: 10 cr hrs of English courses at the 200 or 300 level or permission of instructor. Repeatable to a maximum of 10 cr hrs.
597.01 The Disability Experience in the Contemporary World
UGRD 5
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: Jr or Sr standing. GEC contemporary world course.

597.02 American Regional Cultures in Transition
UGRD 5
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.
Sp Qtr. Prereq: Junior or Senior standing. GEC contemporary world course.

597.03 Environmental Citizenship
UGRD 5
Provides tools for environmental citizenship by teaching interdisciplinary perspectives on biophysical and sociocultural forces that shape environments. Addresses general processes through local case studies.
Sp Qtr. Prereq: Not open to students with credit for Geography 597.03. Cross-listed in Geography. GEC contemporary world course.

597.04 Interdisciplinary Approaches to Narrative in the Contemporary World
UGRD 5
Interdisciplinary Approaches to Narrative in the Contemporary World: Variable topics in the interdisciplinary study of narrative's role in contemporary culture; topics include narrative and cognition, narrative and emotion; narrative and ethics.
Wi Qtrs. Prereq: Jr or Sr standing; enrollment in an Honors program. GEC contemporary world course.

598H Honors Seminar: Selected Topics in Literature and Literary Interpretation
UGRD 5
Selected problems (themes, movements, genres, and styles) emphasizing continuity and development in English and American literary and linguistic history; topic varies quarterly.
Prereq: CPRH of 3.00 or better with a 3.50 or better in English, and permission of dept. Repeatable to a maximum of 10 cr hrs.

662 Literary Publishing
UGRD 5
Theory and practice of editing and publishing literature.
Prereq: 265 or 266, 5 cr hrs of 500-level literature courses in English, and permission of instructor.

681.01 Studies in Asian-American Literature: Korean-American Literature
UGRD 5
Critical study of Korean-American literature and literary genres of the twentieth century, with particular attention to historical, social, and cultural contexts.
2 2-hr cl. Prereq: 10 cr hrs in any literature or grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs, including cr hrs earned in CompStd 645 or Korean 645. Cross-listed with CompStd 645 and Korean 645.

681.02 Studies in Asian-American Literature: Studies in UGRD 5
Japanese-American Literature
Critical study of modern Japanese-American literature in historical and cultural context; topics vary: literature of the interment, gender and identity politics, genre studies, women's writing.
2 2-hr cl. Prereq: 10 cr hrs in any literature or grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs, including cr hrs earned in CompStd 665 or Japanese 665. Cross-listed with CompStd 665 and Japanese 665.

681.03 Studies in Asian-American Literature: Studies in UGRD 5
Chinese-American Literature
Critical study of modern Chinese-American literature in historical and cultural context; topics vary: gender issues, genre studies, women's studies.
2 2-hr cl. Prereq: 10 cr hrs in any literature or grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs, including cr hrs earned in CompStd 665 or Chinese 665. Cross-listed with Chinese 665 and CompStd 665.

689 Writing Internship
UGRD 1-5
Workplace experience requiring writing, editing, and/or research; projects are student-initiated. Su, Au, Wk. Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 5 credit hours toward completion of English major.

692 Workshop
GRAD 1-8
Workshop. Repeatable to a maximum of 12 cr hrs.

693 Individual Studies
UGRD 1-10
Students may register for individual directed study under this number for work not normally offered in courses.
Prereq: Sr standing and permission of instructor and of dept undergard or grad committee. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

694 Group Studies
UGRD 2-5
Group Studies.
Repeatable to a maximum of 15 cr hrs.

696 Research in English: Comprehensive Examinations
GRAD 1-18
Research in preparation for MA comprehensive exams. Arr. Prereq: Permission of grad studies director. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

697 Study at a Foreign Institution
UGRD 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Art. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This course is Progress (P) graded. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

700 Introduction to Graduate Study in English
GRAD 5
Introduction to bibliography, research methods, critical theory, and the principles of literary criticism for advanced work in English studies.
Prereq: Permission of director of graduate studies. Not open to students with credit for 800. Required of all MA candidates.

710 Introduction to Old English Language and Literature
GRAD 5
The reading of Old English prose with special attention to the language and to cultural background.
Prereq: 15 cr hrs of English courses at the 300 or 500 or 600 levels or the equivalent work in allied departments or permission of instructor.

713 Introduction to Middle English Language
GRAD 5
An intensive study of Middle English phonology, morphology, syntax, and dialectology from 1100-1500, with selected readings in the literature.
Prereq: 15 cr hrs of English courses at the 300 or 500 or 600 levels or the equivalent work in allied departments or permission of instructor.

716 Introduction to Graduate Study in the Middle Ages
GRAD 5
Introduction to advanced study and current scholarship and criticism in medieval literature, 1300-1500.
Prereq: Grad standing or permission of instructor. Advanced undergrads may be admitted with permission of instructor.

718 Introduction to Graduate Study in Chaucer
GRAD 5
Introduction to advanced study in Chaucer, with a focus on The Canterbury Tales and Troilus and Criseyde.
2 2-hr cl. Prereq: Grad standing in English or permission of instructor. Advanced undergrads may be admitted with permission of instructor.

720 Introduction to Graduate Study in Renaissance Drama
GRAD 5
Introduction to advanced study and current scholarship and criticism in drama by Shakespeare and his contemporaries.
2 2-hr cl. Prereq: Grad standing in English or permission of instructor. Advanced undergrads may be admitted with permission of instructor.

727 Introduction to Graduate Study in Literature of the 16th Century
GRAD 5
Introduction to advanced study and current scholarship and criticism in 16th century English literature.
2 2-hr cl. Prereq: Grad standing in English or permission of instructor. Advanced undergrads may be admitted by permission of instructor.

728 Introduction to Graduate Study in English Literature of the 17th Century
GRAD 5
Introduction to advanced study and current scholarship and criticism in 17th century English literature.
2 2-hr cl. Prereq: Grad standing in English or permission of instructor. Advanced undergrads may be admitted with permission of instructor.

736 Introduction to Graduate Study in the Restoration and 18th Century
GRAD 5
Introduction to advanced study and current scholarship and criticism in English literature, 1660-1800.
Prereq: Grad standing in English or permission of instructor. Advanced undergrads may be admitted with permission of instructor.

737 Introduction to Graduate Study in 18th Century English Fiction
GRAD 5
Introduction to advanced study and current scholarship and criticism in 18th century English fiction.
2 2-hr cl. Prereq: Grad standing or permission of instructor. Advanced undergrads may be admitted with permission of instructor.

746 Introduction to Graduate Study in British Literature of the Romantic Period
GRAD 5
Introduction to advanced study and current scholarship and criticism in British literature of the Romantic period.
Prereq: Grad standing or permission of instructor. Advanced undergrads may be admitted with permission of instructor.

747 Introduction to Graduate Study in British Literature of the Victorian Period
GRAD 5
Introduction to advanced study and current scholarship and criticism in British Victorian literature.
2 2-hr cl. Prereq: Grad standing in English or permission of instructor. Advanced undergrads may be admitted with permission of instructor.
English

750 Introduction to Graduate Study in Literacy GRAD 5
Basic issues in literacy research: the "great debates" about literacy - oral v. written, traditional v. modern - literacy's relationships with development, major approaches in interpreting literacy. Sp: Cr: 2-Hr cr. Prereq: Grad standing or permission of instructor. Advanced undergraduates may be admitted with permission of instructor.

755 Introduction to Graduate Study in American Literature, Origins to 1840 GRAD 5
Introduction to advanced study and current scholarship and criticism in early American literature. 2-2 Hr cr. Prereq: Grad standing in English or permission of instructor. Advanced undergraduates may be admitted with permission of instructor.

756 Introduction to Graduate Study in American Literature, 1840-1914 GRAD 5
Introduction to advanced study and current scholarship and criticism in American Literature, 1840-1914. Prereq: Grad standing in English or permission of instructor. Advanced undergraduates may be admitted with permission of instructor.

757.01 Introduction to Graduate Studies in African-American Literature: 1746-1900 GRAD 5
A survey of creative texts and critical interpretations representing and reflecting black culture and literary expression in the United States from 1746 to 1900. 2-2 Hr cr. Not open to students with credit for AfAm/As 757.01. Cross-listed in African-American and African Studies.

757.02 Introduction to Graduate Studies in African-American Literature: 1900 to Present GRAD 5
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. 2-2 Hr cr. Not open to students with credit for AfAm/As 757.02. Cross-listed in African-American and African Studies.

758 Introduction to Graduate Study in U.S. Ethnic Literature and Culture GRAD 5
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. Repeatable to a maximum of 10 cr hrs.

760 Introduction of Graduate Study in Postcolonial Literature and Theory GRAD 5
Introduction to graduate-level study of representative examples of the literature, cultural and theoretical texts that inform postcolonial studies. Au, Wi, Sp: Cr: 2-Hr cr. Prereq: Grad standing.

761 Introduction to Graduate Study in Narrative and Narrative Theory GRAD 5
Study of narrative in its different forms (novel, history, autobiography, film, etc.) and of key issues in narrative theory (narrative discourse, plot, progression, ethics, etc.), Su, Au, Wi, Sp: Cr: 2-Hr cr. Prereq: Grad standing or permission of instructor. Advanced undergraduates may be admitted with permission of instructor.

762 Introduction to Graduate Study in Drama and Performance GRAD 5
Introduction to advanced study in the theory, history, and practice of drama and performance. Prereq: Grad standing in English or permission of instructor. Advanced undergraduates may be admitted with permission of instructor.

763 Graduate Workshop in Poetry GRAD 5
A graduate-level workshop in the writing of poetry. Prereq: MFA standing or permission of instructor. Repeatable to a maximum of 20 cr hrs.

765 Graduate Workshop in Fiction GRAD 5
A graduate-level workshop in the writing of fiction. Prereq: MFA standing or permission of instructor. Repeatable to a maximum of 20 cr hrs. Designed for advanced undergrads and grad students.

766 Introduction to Graduate Study in 20th Century Literature, 1900-1945 GRAD 5
Introduction to advanced study and current scholarship and criticism in literature written in English 1900-1945. Prereq: Grad standing in English or permission of instructor. Advanced undergraduates may be admitted with permission of instructor.

767 Introduction to Graduate Study in 20th Century Literature, 1945-Present GRAD 5
Introduction to advanced study in 20th century literature written in English since 1945. 2-2 Hr cr. Prereq: Grad standing in English or permission of instructor. Advanced undergraduates may be admitted with permission of instructor.

768 Graduate Workshop in Creative Nonfiction GRAD 5
A graduate-level workshop in the writing of creative nonfiction. Prereq: MFA standing or permission of instructor. Repeatable to a maximum of 20 cr hrs.

769 Graduate Workshop in Creative Writing (Special Topics) GRAD 5
A special topics course in the writing of fiction, poetry, and/or creative nonfiction. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

770.01 Intro to Grad Study in Folklore: Genres and Interpretive Methods GRAD 5
First of a two-course sequence in current scholarship and methods necessary for advanced study in folklore. Introduction to the canonical folklore genres and practice and methods in the interpretation of folklore in context. Prereq: Grad standing or permission of instructor. Advanced undergraduates may be admitted with permission of instructor. Not open to students with credit for English 770.01. Cross-listed in Comparative Studies.

770.02 Intro to Grad Study in Folklore: Field Research GRAD 5
Second of a two-course sequence in current scholarship and methods necessary for advanced study in folklore. Introduction to ethnographic research design, participant observation and interview methods, ethics in human subject research, archiving of research materials, and ethnographic writing. Prereq: Grad standing or permission of instructor. 770.01 or English 770.01 recommended. Not open to students with credit for English 770.02. Cross-listed in Comparative Studies.

770.03 Intro to Grad Study in Folklore: The Ethnography of Communication GRAD 5
Ethnographic approaches to social interaction and performance; the speech community; the communicative economy. Prereq: Grad standing. Cross-listed in Comparative Studies.

771 Introduction to the English Language GRAD 5
Introduction to the structure of and variation in the English language, with emphasis on both oral and written English. Prereq: 15 cr hrs of English courses at the 300 or 500 or 600 levels or the equivalent work in allied departments or permission of instructor.

772 English Syntax GRAD 5
A study of various systems of English grammar, with emphasis on their application to writing and teaching. Prereq: 271 or 771, or Linguist 201 or 601.

773 Applied English Phonology GRAD 5
A study of English phonology and its application to a variety of literary and non-literary resources. Prereq: 271, or Linguist 201 or 601.

774 History of the English Language GRAD 5
The historical development of English and its place among the world's languages; emphasis on inner history and outer matrix. Prereq: 15 cr hrs of English courses at the 300 or 500 or 600 levels or the equivalent work in allied departments or permission of instructor.

776.01 Graduate Study in the History of Literary Criticism: From Plato to Aestheticism GRAD 5
First of a two-course sequence in literary criticism from Plato to contemporary theory: Major texts and issues in criticism from the classical Greeks to Wilde. Prereq: Grad standing in English or permission of instructor. Not open to students with credit for 676.

776.02 Graduate Study in the History of Literary Criticism: From 1900 to the Contemporary Period GRAD 5
Second of a two-course sequence in literary criticism from Plato to contemporary theory: Major texts and issues from 1900 to the present. Prereq: Grad standing in English or permission of instructor. Not open to students with credit for 676.

777 American English GRAD 5
Introduction to various aspects of the English language as it is used, and has been used in the continental United States. Prereq: 271 or 771 or equiv or permission of instructor.

778 Introduction to Graduate Study in Film and Film Theory GRAD 5
An introduction to the methodologies, contexts, and development of film and film theory. 1-2 Hr cr, 1-3 cr cr. Prereq: Grad standing in English or permission of instructor.

779.01 Introduction to Graduate Study in Rhetoric: Classical to Early Renaissance GRAD 5
First of a two-course sequence in history and theory which provides a foundation for advanced study in rhetoric: History and theory of rhetoric from Classical Greece to early modern Europe. Prereq: Grad standing in English or permission of instructor. Advanced undergraduates may be admitted with permission of instructor.

779.02 Introduction to Graduate Study in Rhetoric: Renaissance to 20th Century GRAD 5
Second of a two-course sequence in history and theory which provides a foundation for advanced study in rhetoric: History and theory of rhetoric from the Renaissance to the present. Prereq: Grad standing in English or permission of instructor; 779.01 recommended. Advanced undergraduates may be admitted with permission of instructor.
780 Current Theory and Practice in the Teaching of Writing GRAD 5
Modern theories of composition; topics include: invention, style, sentence combining, evaluation, the composing process. Prereq: Grad standing or permission of instructor.

781 Introduction to the Teaching of First-Year English GRAD 5
Introduction to the theory and practice of teaching first-year English. 2 2-hr cl. Not open to students with credit for 881.01. Required of new GTAs in English. This course is graded S/U.

783H Honors Research UGRD 3-5
A program of reading arranged for each student, with individual conferences, reports, and honors thesis. Prereq: 4th yr standing and permission of professor under whose supervision the work is to be completed. Open only to candidates for distinction in English. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

788 Studies in the Theory and Practice of Imaginative Writing GRAD 5
Instruction in imaginative writing as a method for studying scholarly issues in English, e.g. disability narratives, ethnicity and literature, gender and genre. Prereq: Grad standing. Repeatable to a maximum of 10 cr hrs.

789 Introduction to Graduate Studies in Digital Media GRAD 5
Explores how scholars in English studies use computer technologies and multiple media to make meaning, represent and analyze information, teach, and conduct research. Prereq: Grad standing.

790 Foundations of Contemporary Critical Theory GRAD 5
Interdisciplinary survey of the theoretical bases of maj or contemporary approaches to the study of literature; readings in Marx, Freud, Derrida, Cixous, and others. Prereq: Grad standing or permission of instructor. Advanced undergrads may be admitted with permission of instructor. Cross-listed in Comparative Studies, French, German, Italian, and Spanish.

791 Introduction to Graduate Study in Critical Theory: Contemporary Movements GRAD 5
Introduction to a movement in critical or cultural theory such as feminist, marxist, reader-response, queer, or postcolonial, and its relation to current critical practices. Prereq: Grad standing or permission of instructor. Advanced undergraduates may be admitted with permission of instructor. Repeatable to a maximum of 15 cr hrs.

792 Interdepartmental Studies in the Humanities GRAD 3-5
Two or more departments present colloquia on subjects of mutual interest; topics to be announced. Prereq: Grad standing or permission of instructor(s). Repeatable to a maximum of 15 cr hrs. with permission of dept.

795 Introduction to Research Methods in Rhetoric and Composition GRAD 5
Introduction to the quantitative and qualitative research methods most widely used in rhetoric and composition studies. 2 2-hr cl. Prereq: Grad standing in English or permission of instructor.

799 Graduate Studies in Literary Bibliography GRAD 5
An introduction to the materials and methods of literary bibliography for graduate students in literary studies. 2 2-hr cl. Prereq: Grad standing.

817 Seminar in Early Medieval English Literature GRAD 5
Topics include: Beowulf and its background; Old English poetry exclusive of Beowulf. Prereq: 710 or equiv. Repeatable to a maximum of 10 cr hrs.

818 Seminar in Later Medieval English Literature GRAD 5
Topics include: Poetry of the allegorical revival; medieval English drama; 15th-century non-dramatic literature. Prereq: 15 or hrs of English courses at the 300 or 500 or 600 levels or the equivalent work in allied departments or permission of instructor. Repeatable to a maximum of 20 cr hrs.

820 Seminar in Shakespeare GRAD 5
An intensive consideration of selected problems in the scholarly study of Shakespeare. Prereq: 15 or hrs of English courses at the 300 or 500 or 600 levels or the equivalent work in allied departments or permission of instructor. Repeatable to a maximum of 10 cr hrs.

821 Seminar in English Renaissance Literature GRAD 5
Topics include: Renaissance and early 17th-century poetry; Spenser; Renaissance drama; Milton; Renaissance prose. Repeatable to a maximum of 20 cr hrs.

837 Seminar in Restoration and 18th-Century Literature GRAD 5
Topics: 18th-century novel; Restoration and 18th-century drama; 18th-century literature and culture. Repeatable to a maximum of 25 cr hrs.

840 Seminar in English Romantic Literature GRAD 5
Literary romanticism in relation to contemporary intellectual and political movements; topic varies from year to year. Repeatable to a maximum of 15 cr hrs.

844 Seminar in Victorian Literature GRAD 5
Topics include: Victorian poetry; 19th-century non-fictional prose; 19th-century novel. Repeatable to a maximum of 15 cr hrs.

850 Seminar in 19th-Century American Literature GRAD 5
Topics include: American literature 1865-1914; individual American writers, 1800-1900; the American Renaissance. Repeatable to a maximum of 20 cr hrs.

851 Seminar in Critical Approaches to Black Literatures GRAD 5
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. 2 2-hr cl. Prereq: Grad standing and an introductory course in African-American/African literature; or permission of instructor. Repeatable to a maximum of 10 cr hrs. including cr hrs earned in AfrAm/St 851. Cross-listed in African-American and African Studies.

858 Seminar in U.S. Ethnic Literatures and Cultures GRAD 5
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. Au, Wi, Sp. Qtr. 2 2-hr cl. Prereq: Grad standing. Repeatable to a maximum of 10 cr hrs.

860.01 Seminar in 20th-Century American Literature GRAD 5
Problems, forms, and themes in 20th-century American literature; study of particular 20th-century American writers. Repeatable to a maximum of 15 cr hrs.

860.02 Seminar in 20th-Century British Literature GRAD 5
Problems, forms, and themes in 20th-century British literature; study of particular 20th-century British writers. Repeatable to a maximum of 15 cr hrs.

860.03 Seminar in 20th-Century British and American Literature GRAD 5
Topics in 20th-century British and American literature; study of particular 20th-century British and American writers. Repeatable to a maximum of 15 cr hrs.

861 Studies in Narrative and Narrative Theory GRAD 5
Seminar in narrative theory and practice; focus on an approach (e.g., feminist narratology), a problem (ethics), or subcategory of narrative (the multi-plot novel). Wi Qtr. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 20 cr hrs.

864 Postcolonial/Transnational Literatures GRAD 5
Topics include postcolonial and transnational literature in English; theories of colonial, postcolonial, and transnational literature and culture. 2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

870 Seminar in Folklore GRAD 5
Intensive study of some particular aspect of folklore. Prereq: 770 or equiv with written permission of instructor. Repeatable to a maximum of 10 cr hrs.

871 Seminar in the Forms of Literature GRAD 5
Problems in the criticism of fiction, poetry, or drama. Repeatable to a maximum of 20 cr hrs.

872 Seminar in the English Language GRAD 5
Advanced English language study; topics vary. Prereq: 771 or Linguist 601 or equiv with permission of instructor. Repeatable to a maximum of 10 cr hrs.

876 Seminar in Critical Theory GRAD 5
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. Repeatable to a maximum of 10 cr hrs.

878 Seminar in Film Studies GRAD 5
An intensive consideration of selected issues, themes, and forms in Film Studies. Topic varies. Su, Au, Wi, Sp. Qtrs. 2 2-hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

879 Seminar in Rhetoric GRAD 5
Rhetoric of a particular period; major figures in rhetoric; rhetorical analysis of literature. Repeatable to a maximum of 10 cr hrs.

880 Seminar in Composition GRAD 5
Invention; the composing process and revision; evaluating and responding to writing; discourse analysis. Repeatable to a maximum of 10 cr hrs.

881.02 Teaching Basic Writing GRAD 5
Theory and practice in the teaching of basic writing. Prereq: 781 or permission of instructor.
194 English

881.03 Teaching of College Composition in English as a Second Language
Research in teaching English as a second language at the college level; materials and pedagogical techniques to use in English as a second language courses. Prereq: 871 or Linguist 692.01 or permission of instructor.

881.04 Teaching Business and Professional Communication
Theoretical foundations of and teaching techniques for major units in business communication, designed to prepare graduate students to do research in and to teach business and professional writing. Prereq: 881.01 or permission of instructor.

883 Studies in Literacy
Examination of the meanings of the term "literacy" and the historical, cognitive, social, economic, artistic, and political consequences of these definitions. 2-2 hr cl. Prereq: Grad standing in English or permission of instructor. Repeatable to a maximum of 15 cr hrs.

884 Literacy Past and Present
From the invention of alphabets to the electronic age: literacy's relationships with social, cultural, political, and economic changes; impacts and significance for individuals and collectives. Sp Qtr. 2-2 hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs. Cross-listed with History 775.

889 Seminar on 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. Repeatable to a maximum of 15 cr hrs.

890 Interdepartmental Seminar in Critical Theory
Interdisciplinary study of a movement (phenomenology, feminism, deconstruction, etc.) or problem (intentionality, evaluation, etc.) in literary theory. Prereq: Background in critical theory recommended. Cross-listed in Comparative Studies, French, German, Spanish, and WGSST.

891 Seminar in Disability Studies in Language and Literature
Intensive study of disability as a representational system and of key issues in disability studies. Repeatable to a maximum of 20 cr hrs.

892 Seminar in Feminist Studies in Literature and Culture
Analysis of literary and cultural texts through feminist methodologies. Time, period, and topic vary. Repeatable to a maximum of 20 cr hrs.

894 Group Studies
Group Studies. Repeatable to a maximum of 15 cr hrs.

895 Seminar in Research Methods in Rhetoric and Composition
Advanced study in a specific quantitative or qualitative research method in rhetoric and composition. Prereq: 795 or permission of instructor. Repeatable to a maximum of 10 cr hrs.

900 The Long Seminar: Research in Literary History, Theory, and Forms I
Reading and research in literature, its theory and forms, and its intellectual and social backgrounds. Prereq: At least 25 cr hrs of grad instruction. Repeatable to a maximum of 10 cr hrs. This course is Progress (P) graded. 900 must be followed by 901. Credit awarded upon completion of 901.

901 The Long Seminar: Research in Literary History, Theory, and Forms II
Continuation of 900. Prereq: 900. Repeatable to a maximum of 10 cr hrs.

903 Teaching College English I
Students work as apprentices to faculty members in the planning and execution of an undergraduate English course. Su, Au, Wi, Sp Qtr. Prereq: PhD standing and permission of instructor. Not open to ABD students. Students must have completed the sequence prior to candidacy exams. Repeatable to a maximum of 9 cr hrs. A maximum of 3 credits count toward doctoral requirements in English. This course is graded S/U.

903.02 Teaching College English II
Students work as apprentices to faculty members in the planning and execution of an undergraduate English course. Su, Au, Wi, Sp Qtrs. Prereq: PhD standing and permission of instructor. Not open to ABD students. Students must have completed sequence prior to candidacy exams. Repeatable to a maximum of 6 hr hrs. A maximum of 2 credits count toward doctoral requirements in English. This course is graded S/U.

904 Writing for Publication
Assists students in English in learning to write publishable critical essays and in becoming familiar with publishing protocols. 2 hrs cl. Prereq: Must be enrolled in English graduate program. Repeatable with permission of English graduate director. This course is graded S/U.

980 Bibliography and Method
For advanced grad students in the methods and tools of literary research.

982 Textual Criticism and Editing
Evaluation of literary editorial methods, past and present; training in skills requisite to the textual critic and scholarly editor; practice in textual editing. Prereq: 980.

993 Individual Studies
Doctoral students may register for individual study in areas not normally covered by courses. Prereq: Permission of dept grad committee. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

996 Research in English: Candidacy Examination
Research in preparation for Ph.D. exams. Arr. Prereq: Permission of graduate studies director. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

997 The Dissertation Seminar
Doctoral candidates present their research-in-progress to faculty and each other. Prereq: Successful completion of the General Exam. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

998 Research in English: Thesis
Research for the master's thesis. Repeatable. This course is graded S/U.

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

Entomology

101 Insect Biology I
Biological sciences with insects as a model: structure, function, development, and interactions with environment. Su Qtr. 4 cl, 1 2-hr lab. Prereq: Math 075, 076, or 104; or Mathematics Placement Level R. GEC bio sci course.

102 Insect Biology II
Continuation of 101; behavior, diversity, insect interactions with humans, pathogens, social insects. Wi Qtr. 4 cl, 1 2-hr lab. Prereq: 101 or Biology 101. GEC bio sci course.

126 Introductory Insect Biology
Biology of insects and their relatives, with emphasis on behavior, ecology and diversity; collection is required. Su Qtr. Offered at Stone Lab. Prereq: A high school course in biology. Offered at Stone Lab. One week (7 days). Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

294 Group Studies
Group studies in the field of the chosen problem. Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

333 Social Insects
Exploration of biological and cybernetic factors that permit ants, bees, wasps, and termites to maintain large and complex societies. Aut, Wi Qtrs. 3 cl, 1 rec. Prereq: Biology 101 or equiv. Not open to students with credit for 444H GEC bio sci course.

444h Social Insects
Introduction to the biology of social insects (ants, bees, wasps, termites). Sp Qtr. 3 cl, 1 2-hr lab. Prereq: 102, or Biology 102 or 114 or 116H, or PlantBio 102; and enrollment in an honors program; or equivs with permission of instructor. Not open to students with credit for 333.

460 Economic Entomology and Insect Pest Management
Survey of arthropods that affect public health, crops, livestock, and the home; integrated control methods, and examination of specimens from economic orders, and important pests. Wi Qtr. 3 cl, 2 2-hr labs. Prereq: Biology 101 or 113 or 115H. Not open to students with credit for 462. Requirement for Entomol undergrad majors.

461 Forest Entomology
Insects and other arthropods in the forest as they relate to effective management for maximum production of wood products and sustained preservation of forests and parklands.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>462</td>
<td>Economic Entomology for Turf, Ornamentals,</td>
<td>4</td>
<td>and Greenhouses; emphasis on biology, identification, and control methods, including integrated pest management.</td>
</tr>
<tr>
<td>500</td>
<td>General Entomology</td>
<td>5</td>
<td>Structure, function, development, ecology, and insect-human interactions in an evolutionary context; lab stresses classification and identification of insects; insect collection required.</td>
</tr>
<tr>
<td>550</td>
<td>Comparative Endocrinology</td>
<td>3</td>
<td>Introduction to hormones and hormone action; comparison between vertebrates and invertebrates with emphasis on special situations such as metamorphosis.</td>
</tr>
<tr>
<td>592</td>
<td>Workshop</td>
<td>1-6</td>
<td>Intensive study of a topic in entomology; the format will depend upon the topic.</td>
</tr>
<tr>
<td>612</td>
<td>Aquatic Entomology</td>
<td>5</td>
<td>Designed for preparation in the teaching of biology or for research on aquatic resources; emphasis on taxonomy and ecology of immature and adult aquatic insects.</td>
</tr>
<tr>
<td>621</td>
<td>Insect Systematics and Diversity</td>
<td>5</td>
<td>Principles of systematics and application to insect classification and identification.</td>
</tr>
<tr>
<td>623</td>
<td>Insect Morphology</td>
<td>5</td>
<td>Comparative external and internal anatomy of insects and other arthropods; organ systems in developmental, functional, and evolutionary contexts; individual historiographic studies.</td>
</tr>
<tr>
<td>626</td>
<td>Cladistic Methods</td>
<td>3</td>
<td>Designed to familiarize students with the philosophy and tools of cladistic analysis to interpret current literature and to execute publishable analyses of their own data.</td>
</tr>
<tr>
<td>631</td>
<td>Insect Physiology</td>
<td>5</td>
<td>The general physiology of insects and other arthropods; labs stress the use of insects to demonstrate fundamental physiological processes.</td>
</tr>
<tr>
<td>632</td>
<td>Insect Molecular Genetics</td>
<td>3</td>
<td>Structure, genetics and methodology of insect genes and genomes.</td>
</tr>
<tr>
<td>641</td>
<td>Insect Ecology</td>
<td>3</td>
<td>This course overviews insect ecology from an evolutionary perspective focusing on factors influencing the diversity, distribution, and abundance of insects.</td>
</tr>
<tr>
<td>642</td>
<td>Insect Behavior</td>
<td>4</td>
<td>Introduction to mechanisms of insect behavior, behavioral physiology and ecology, and social behavior.</td>
</tr>
<tr>
<td>645</td>
<td>Simulation Modeling in Applied Insect Ecology</td>
<td>5</td>
<td>Theory and practice of systems analysis relative to management of insect pests.</td>
</tr>
<tr>
<td>650</td>
<td>Biological Control of Arthropod Pests</td>
<td>4</td>
<td>Introduction to the theory and practice of biological control of arthropod pests.</td>
</tr>
<tr>
<td>655</td>
<td>Quantitative Methods in Applied Biology</td>
<td>3</td>
<td>Review of quantitative methods used in biological research especially emphasizing practical application to agricultural and environmental sciences.</td>
</tr>
<tr>
<td>660</td>
<td>Advanced Economic Entomology</td>
<td>5</td>
<td>Theory and practice of pest population management, emphasizing current research, population modelling, sampling, and data analysis.</td>
</tr>
<tr>
<td>661</td>
<td>Medical Entomology</td>
<td>5</td>
<td>Arthropod agents and vectors of vertebrate disease: life cycles, behavior, pathogenesis, identification, control; arthropod-pathogen and arthropod vertebrate relationships; arthropod-borne disease systems.</td>
</tr>
<tr>
<td>670</td>
<td>General Acarology</td>
<td>2</td>
<td>An introduction to the morphology, development, and general biology of mites; laboratory consists of a taxonomic review of the families of Acari.</td>
</tr>
<tr>
<td>693</td>
<td>Individual Studies</td>
<td>1-10</td>
<td>Individual work in the field of the chosen problems.</td>
</tr>
<tr>
<td>694</td>
<td>Group Studies</td>
<td>2-5</td>
<td>Group work in the field of the chosen problems.</td>
</tr>
<tr>
<td>697</td>
<td>Study at a Foreign Institution</td>
<td>1-15</td>
<td>An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.</td>
</tr>
<tr>
<td>698.01</td>
<td>Study Tour: Domestic</td>
<td>1-15</td>
<td>Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.</td>
</tr>
<tr>
<td>698.02</td>
<td>Study Tour: Foreign</td>
<td>1-15</td>
<td>Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.</td>
</tr>
<tr>
<td>699</td>
<td>Undergraduate Research in Entomology</td>
<td>1-6</td>
<td>Undergraduate experience in entomological research in variable topics.</td>
</tr>
<tr>
<td>762</td>
<td>Environmental Toxicology and Chemistry</td>
<td>3</td>
<td>Technical examination of the environmental behavior of organic, inorganic, and microbial xenobiotics; emphasis on chemistry of interactions with physical environment, fagacity models, risk assessment, and predictive toxicology.</td>
</tr>
<tr>
<td>783H</td>
<td>Honors Research</td>
<td>3-5</td>
<td>A program of reading and research for each student with individual conferences, reports, and Honors thesis.</td>
</tr>
<tr>
<td>790</td>
<td>The Nature and Practice of Science</td>
<td>2</td>
<td>Analysis and application of logic underlying scientific reasoning, theory, hypothesis, and their integration with experimental design, discovery, ethics, and science as a human endeavor.</td>
</tr>
<tr>
<td>795.01</td>
<td>Special Topics in Entomology: Acarology</td>
<td>1-3</td>
<td>Seminar on publications, current research, or research techniques: Acarology.</td>
</tr>
<tr>
<td>795.02</td>
<td>Special Topics in Entomology: Apiculture</td>
<td>1-3</td>
<td>Seminar on publications, current research, or research techniques: Apiculture.</td>
</tr>
<tr>
<td>795.03</td>
<td>Special Topics in Entomology: Behavior</td>
<td>1-3</td>
<td>Seminar on publications, current research, or research techniques: Behavior.</td>
</tr>
<tr>
<td>795.04</td>
<td>Special Topics in Entomology: Biological Control</td>
<td>1-3</td>
<td>Seminar on publications, current research, or research techniques: Biological Control.</td>
</tr>
</tbody>
</table>
Entomology

795.05 Special Topics in Entomology: Ecology UGRD 1-3
Seminar on publications, current research, or research techniques: Ecology. Prereq: 25 or hrs in biological sciences at 200 level or above. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

795.06 Special Topics in Entomology: Economic Entomology UGRD 1-3
Seminar on publications, current research, or research techniques: Economic Entomology. Prereq: 25 or hrs in biological sciences at 200 level or above. Repeatable to a maximum of 10 cr hrs.

795.07 Special Topics in Entomology: Genetics UGRD 1-3
Seminar on publications, current research, or research techniques: Genetics. Prereq: 25 or hrs in biological sciences at 200 level or above. Repeatable to a maximum of 10 cr hrs.

795.08 Special Topics in Entomology: Medical Entomology UGRD 1-3
Seminar on publications, current research, or research techniques: Medical Entomology. Prereq: 25 or hrs in biological sciences at 200 level or above. Repeatable to a maximum of 10 cr hrs.

795.09 Special Topics in Entomology: Pathology UGRD 1-3
Seminar on publications, current research, or research techniques: Pathology. Prereq: 25 or hrs in biological sciences at 200 level or above. Repeatable to a maximum of 10 cr hrs.

795.10 Special Topics in Entomology: Physiology-Toxicology UGRD 1-3
Seminar on publications, current research, or research techniques: Physiology-Toxicology. Prereq: 25 or hrs in biological sciences at 200 level or above. Repeatable to a maximum of 10 cr hrs.

795.11 Special Topics in Entomology: Research Methods UGRD 1-3
Seminar on publications, current research, or research techniques: Research Methods. Prereq: 25 or hrs in biological sciences at 200 level or above. Repeatable to a maximum of 10 cr hrs.

795.12 Special Topics in Entomology: Systematics UGRD 1-3
Seminar on publications, current research, or research techniques: Systematics. Prereq: 25 or hrs in biological sciences at 200 level or above. Repeatable to a maximum of 10 cr hrs.

796 Advanced Studies and Techniques in Entomology GRAD 1-2
Presentation of specialized information and methods of entomologically related research, teaching, and extension. Su, Au, Wi, Sp Qtrs. 1 or 2 2-hr cl. Prereq: 500 or equiv. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

800 Entomology Seminar GRAD 1
Faculty, graduate students, and outside speakers will participate; topics: recent advances in various entomological fields. Au, Wi, Sp Qtrs. 1 or 2 1-3 hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

831 Advanced Insect Physiology GRAD 5
Insect biochemistry and recent advances in insect physiology; lab consists of a term project. **Sp Qtr. 2 cl, 2-3 hr labs. Prereq: 631 or EECB 415 or Zoology 415 or 432, or equiv.

840 Insect Chemical Ecology GRAD 3
Chemical strategies used by insects for defense, mate finding, and host selection; techniques used for the characterization of semiochemicals. **Sp Qtr. 1-2 1-2 hr lab. Given at CARRD, Wooster, Ohio. Prereq: 642 and Chem 251 and 254, or equivs; or permission of instructor; Biochem 511 recommended.

870 Medical-Veterinary Entomology GRAD 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. Su Qtr. 1 cl, 1-4 hr lab; 3 hrs c/lib daily for 2 wks. Course is part of Acaiology Summer Program.

871 Agricultural Entomology GRAD 4
An intensive review of the mites associated with crops, ornamental plants, and stored food products with emphasis on taxonomy and ecology of these animals. Su Qtr. 1 cl, 1-4 hr lab, 8 hrs c/lib daily for 2 wks. Course is part of Acaiology Summer Program.

872 Soil Acarology GRAD 6
Taxonomy, ecology and life-history of mites associated with soil and litter. Su Qtr. 3 cl, 3-2 hr labs/day for 19 days. Prereq: 670 and Biology 114, or permission of instructor. Course is part of the Acaiology Summer Program. This course is graded S/U.

880 Research and Training Seminar GRAD 2
Presentation of procedures, resources, and faculty research in the Department of Entomology; required of all graduate majors during the first year of registration. Au Qtr. 1-2 hr d. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

891 Interdepartmental Seminar in Environmental Science GRAD 2
Biology
Selected topics treating the environmental aspects of organisms, populations, and ecosystems as they may relate to time, space, and human activities. Su, Au, Wi, Sp Qtrs. 1-2 hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

999 Research in Entomology GRAD 1-18
Research for thesis and dissertation purposes only. Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

Environment and Natural Resources

101 Soils in Our Environment UGRD 5
Soil as an impalpable natural resource, source of pollution, and as the media for storage and/or inactivation of pollutants. Nutrient pollution of waters, homeowners’ problems with soils, and the effect of soils on the food chain. Su, Au Qtrs. 3 cl, 1-2 hr disc. Not open to Soil Science majors or students required to take or with credit for 300.01 or SoilSci 300.01. GEC phys sci sequence course, phys sci sequence with EarthSci 100.

119.01 Survey of Park and Policy Careers UGRD 1
The identification, development and recommended academic preparation for professional career opportunities in park administration and conservation policy. Sp Qtr. 1-2 hr cl. Repeatable to a maximum of 3 cr hrs. Some off campus field trips for direct contact with various park operation and programs with professional administrators. This course is graded S/U.

119.02 Professional Survey of Forestry, Fisheries and Wildlife UGRD 1
Origin, development, and future of the Forestry, Fisheries, and Wildlife professions. Career opportunities, professional development, and curriculum planning for majors and exploring students. Wi Qtr. 1-2 hr cl. Not open to students with credit for NatRes 119.02. Repeatable to a maximum of 3 or hrs. Required of Forestry, Fisheries, and Wildlife majors. This course is graded S/U.

119.03 Professional Survey of Environmental Science UGRD 1
Exploration of the field, including areas of study and career opportunities in Ecosystem Restoration, Environmental Science Education, Stream, Coastal and Wetland Science, and Soil and Water Conservation. Wi Qtr. This course is graded S/U.

155 Energy and Environment UGRD 5
This course introduces and examines the fundamentals of energy sources, energy use, energy efficiency, and resulting environmental implications of the various energy supplies. Sp Qtr. Not open to students with credit for EarthSci 155. Crosslisted with EarthSci 155. GEC Natural Sciences, Physical Science Courses and sequences.

189 Work Experience in Natural Resources UGRD 2
Student must secure approval of instructor prior to employment (equivalent to 10 weeks full-time) and submit an evaluation by third Friday of quarter following work. Su, Au, Wi, Sp Qtrs. Equiv of 10 wks employment. Prereq: Permission of instructor. Repeatable to a maximum of 4 cr hrs. This course is graded S/U.

201 Introduction to Environmental Science UGRD 5
Introduction to environmental science, the ecological foundation of environmental systems, and the ecological impacts of environmental degradation by humans. Su, Au, Wi, Sp Qtrs. 4 cl, 1 dis. GEC bio sci course.

203 Society and Natural Resources UGRD 5
Introduction to interactions between humans, natural resources, and ecosystems from a social science perspective. Su, Wi, Sp Qtrs. GEC soc sci human, natural, and economic resources course.

221 Biology and Identification of Woody Forest Plants UGRD 5
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 Qtr. 3 cl, 1 4.5-hr lab.

222 Natural Resources Data Analysis UGRD 5
Natural resources applications of statistics to land management. Au, Wi, Sp Qtrs. 4 cl, 1-3 hr lab. GEC data analysis course.

230 Ecology and Conservation of Birds UGRD 3
Introduction to the ecology and conservation of birds, with special emphasis on field ornithology and student research projects. Su Qtr. Course integrates concepts related to the design of ecological studies, avian ecology, habitat management, and conservation in order to foster an understanding of how research and management can support bird conservation. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

231 Research in Avian Ecology UGRD 5
Introduction to the scientific process and research methods as commonly applied to studies of avian ecology and conservation. 231H (honors) may be available. Sp Qtr. 1-2 hr cl. Three weekend field trips are required.
232 Landscape Maintenance UGRD 4
Management of landscape plantings with special emphasis on transplanting, mulching, nutrition, pest control, pruning, physiological disorders and diagnosing plant problems.
Su, Au, Wi, Sp Qtrs. 2-1.5 hr. Crosslisted in Horticulture and Crop Science.

289 Natural Resources Practicum UGRD 2
Experience in the application of principles and techniques of environmental/natural resources problem solving.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Enrollment in the School of Environment and Natural Resources and permission of instructor. Repeatable to a maximum of 4 or 6 hrs. This course is graded S/U.

300.01 Soil Science UGRD 3
Introduction to soil physical, chemical, and biological properties related to land use, environmental quality, and crop production.
Au, Wi, Qtr. 3 cl. This course is available for EM credit. NS Adms Cond course. BER/LAR course. GEC phys sci course.

300.02 Soil Science Laboratory UGRD 2
Observation and quantitative determination of soil properties.
Au, Wi Qtrs. 1-3-hr. lab. Prereq or concour: 300.01. This course is available for EM credit. NS Adms Cond course. BER/LAR course. GEC phys sci course.

311 Foundations for Environmental Communications, Education and Interpretation UGRD 3
Fundamental course that prepares students in ECEI for understanding the theoretical bases that relate and differentiate environmental communications, education, and interpretation.
Au Qtr. 1-2.5-hr cl. Prereq: 201 and 203 or permission of instructor. Course includes required field trips.

319 Introduction to Forestry Fisheries and Wildlife UGRD 3
Ecological principles applied to integrated management of forest, fish, and wildlife resources; economic, policy, and administrative aspects of forestry, fisheries, and wildlife management.

322 Forest Ecosystems UGRD 5
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.
Au Qtr. 3 cl. 1.5-3-hr lab. Prereq or concour: 201, 203, 221 or permission of instructor.

323 Forest Biometrics UGRD 5
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 Qtr. 3 cl. 2-4 hr. lab. Prereq: 222 or Stat 145 or HCS 260 or AnimSci 260.

324 Natural Resources Photointerpretation UGRD 3
Principles and methods of photointerpretation for natural resources management.
Wi Qtr. 2 cl, 1-3 hr. lab. Prereq: 201 and 203.

333 Silviculture UGRD 5
Ecological principles and practical applications of methods for controlling forest ecosystem structure and function; prescription of silvicultural practices in the field.
Sp Qtr. 3 cl. 1.5-hr lab. or 1 or 2 all-day field trips. Prereq or concour: 201, 203, 221, or permission of instructor.

340 Concepts of Parks and Recreation UGRD 3
Examination of parks and recreation concepts including development, rationale, and frameworks for park and recreation systems in the United States.
Wi Qtr. 3 cl.

347 Religion and Environmental Values in America UGRD 5
Explores contemporary religious thought on the morality and ethics of environmental responsibility in North America. Focuses on how religion and spirituality contribute to environmental citizenship.

350.01 Introduction to Wildland Fire Management UGRD 3
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 Qtr. 1-3 hr cl.

350.02 Wildland Fire Management Laboratory UGRD 2
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 Qtr. 1-3 hr cl. Concur: 350.01.

355 Water Quality Management UGRD 3
Causes, consequences, and solutions of pollution in lakes, rivers, wetlands, and groundwater; analysis of the physical, chemical, and biological indicators of water quality.
Wi Qtr. 1-3 hr cl.

367 The Making and Meaning of the American Landscape UGRD 5
Interpretation of the contemporary American landscape as the product of many interacting physical and sociocultural forces.
Au, Wi, Sp Qtrs. 3 cl, 2-4 hr rec. Prereq: English 110 or 110.01 or 110.02 or 110.03 or equiv. Not open to students with credit for LVrch 202 or 367. Crosslisted in Landscape Architecture. VPA Adms Cond course. GEC second writing and arts and hums cultures and ideas (for BS majors only) course.

400 Natural Resources Policy UGRD 5
Conceptual and historic development, implementation, and evaluation of resource policy. Wi, Sp Qtrs. 4 cl, 1 rec. Prereq: 201 and 203. BER/LAR course. GEC soc sci organizations and polities course.

410 Environmental Interpretation and Visitor Services UGRD 5
Principles and practice in communicating with visitors in leisure and non-formal education settings. Wi Qtr. 2.5-3 hr cl. 3 independent off campus site visits. Prereq: 367 or equiv. Not open to students with credit for 610.

413 Methods for Environmental and Conservation Education UGRD 5
Experience centered course for environmental and conservation education including objective, instructional, and evaluative procedures appropriate for nonformal settings. ^Sp Qtr. 2.5-3 hr cl. Not open to students with credit for 613, Edu/LT 613.

415 Zoo Science and Management UGRD 4
This course introduces students to zoo science and management through combination of formal course work and experience with zoo/aquarium professionals. Wi Qtr. Prereq: 319 or 340 or 311 or permission of instructor. This course will be held on-site at the Columbus Zoo and Aquarium in their classrooms, laboratories and other facilities.

432 Sustainable Forest Products UGRD 5
A study of forest operations including timber harvesting and transport from the forest to the mill. Uses of wood, fiber products, and wood waste, including solid wood products, wood composites, biomass energy, and biofuel. Consideration of the environmental effects of the harvesting and manufacturing processes.
Sp Qtr. Prereq: 201 and 203 or permission of instructor.

442 Soil Management UGRD 5
A consideration of the necessity for conserving our soil resource. Emphasis on processes active in erosion and management practice to sustain productivity and maintain environmental quality.
Sp Qtr. 5 cl.

448 Natural Resources Law Enforcement UGRD 4
An examination of the law enforcement function in natural resources and recreation management. Prerequisite for acceptance to the Natural Resources Ranger Academy program. Wi Qtr. 1-4 hr cl.

494 Group Studies UGRD 3-5
Selected topics in soil science.
Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 12 or 15 hrs.

498.01 Study Tour - Domestic UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details. Prereq: Permission of instructor. Repeatable for different titled study tours only.

498.02 Study Tour - Foreign UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details. Prereq: Permission of instructor. Repeatable for different titled study tours only.

510 Natural History of Ohio UGRD 5
Field course emphasizing inter-relationship among physical and biological factors in various ecological settings; field techniques and identification skills used for research paper; teacher section offered.
Sp Qtr. 2.5-4.5 hr cl and Sat field trip.

531 Environmental and Natural Resources Economics UGRD 5
Economic analysis of the use and management of natural resources and of environmental policy.
Au, Wi, Sp Qtrs. 5 cl. Not open to students with credit for AEDEcon 531. Cross-listed in Agricultural, Environmental, and Development Economics.

540 Urban and Sports Turf Soils UGRD 3
Soil science relevant to urban use, including problems associated with urban soil, urban and sports turf soil design, and playability of sports turf soils.
Sp Qtr. 3 cl. Prereq: 300.01 or permission of instructor.

567 Communicating Environmental and Natural Resources Information UGRD 5
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.
Au, Wi, Sp Qtrs. 3-2 hr cl. Prereq: Second writing course. GEC/LAR course.

580 Soil Fertility and Fertilizers UGRD 3
Principles of soil fertility, plant nutrition, and fertilizer management; environmental considerations and low input concepts in soil fertility.
Wi Qtr. 2.5-hr cl.
Environment and Natural Resources

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590H Honors Colloquium UGRD 2
Instruction in the preparation of research proposals and discussion of current research in natural resources.
Wi Qtr. 1 2-hr cl. Prereq: Jr standing in ENR honors program. Required of all ENR honors students. This course is graded S/U.

595.01 Wilderness Leadership Education - Term UGRD 6
Affiliate program with the National Outdoor Leadership School (NOLS). Field studies and practice of wilderness expedition skills, leadership, group dynamics, safety, judgement, and environmental studies.
Term - 4 weeks. Prereq: Permission of instructor. Approval of NOLS application. Repeatable for different titled study tours only. Specific content, location, quarter(s) of offering, and prerequisites vary. Contact department office for details. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

595.02 Wilderness Leadership Education - Quarter UGRD 15
Affiliate program with the National Outdoor Leadership School (NOLS). Field studies and practice of wilderness expedition skills, leadership, group dynamics, safety, judgement, and environmental studies.
Quarter - 12 weeks. Prereq: Permission of instructor. Approval of NOLS application. Repeatable for different titled study tours only. Specific content, location, quarter(s) of offering, and prerequisites vary. Contact department office for details. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

596.01 Environmental Field Studies - Term UGRD 6
Affiliate program with the School for Field Studies (SFS). Interdisciplinary studies and field research methods exploring ecological, socio-political, and economic aspects of environmental issues.
Term - 4 weeks. Prereq: Permission of instructor. Approval of SFS application. Repeatable for different titled study tours only. Specific content, location, quarter(s) of offering, and prerequisites vary. Contact department office for details. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

596.02 Environmental Field Studies - Quarter UGRD 15
Affiliate program with the School for Field Studies (SFS). Interdisciplinary studies and field research methods exploring ecological, socio-political, and economic aspects of environmental issues.
Quarter - 12 weeks. Prereq: Permission of instructor. Approval of SFS application. Repeatable for different titled study tours only. Specific content, location, quarter(s) of offering, and prerequisites vary. Contact department office for details. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

597.02 Antarctic Marine Ecology and Policy UGRD 5
Historical and contemporary evaluation of Antarctic resource management and its scientific basis. 597.O2H (honors) may be available.
Sp Qtr. 1 3-hr cl. Prereq: Sr standing. Not open to students with credit for IntStds 597.02 or Zoology 597.02. LAR courses. Cross-listed in International Studies. GEC contemporary world course.

598 Natural Resources Management Study Tour UGRD 2-5
Analysis and comparative studies of natural resources management program through on-site visits and interaction with professional managers.
Au, Wi, Sp Qtrs. 1-2 hr cl; field study tour. Prereq: Jr standing. Repeatable to a maximum of 10 or hrs. Travel and subsistence costs will be borne by the student.

601 Evaluation of Environmental Impact UGRD 4
Study of impact of human activity in natural resources through evaluation of environmental impact.
Au Qtr. 2 2-hr cl. Prereq: Sr or grad standing. Not open to students with credit for NatRes 601.

602 International Environmental Impact Assessment UGRD 5
Fundamental concepts of international environmental impact assessment including the legal and institutional frameworks, practice and performance, and social and cultural contexts that shape EA's implementation worldwide.
Wi Qtr. 2 2-hr cl, 1 hr arr. Prereq: Jr, sr, grad standing or permission of instructor.

606.01 Natural Resources Management UGRD 5
Intergration of technical knowledge with social and institutional constraints as they relate to professions in resources management.
Au, Wi, Sp Qtrs. 4 cl, 1-4 hr/disc (Arranged). Prereq: Sr standing and permission of instructor. Required of Human Dimensions and Environmental Science majors.

606.02 Natural Resources Management for Forestry UGRD 5
Fisheries and Wildlife
Application and integration of technical knowledge and methodologies in the forestry, fisheries, and wildlife sciences to planning, problem-solving, and decision-making in natural resources.
Au Qtr. Prereq: 323 or 662 or NatRes 323 or 626 or 662 and Sr standing in natural resources. Students will normally be Forestry, Fisheries, and Wildlife majors. Required of Forestry, Fisheries, and Wildlife majors. Lodging, meals, and transportation fee required for off-campus field experience. 2-week off-campus field experience before autumn quarter. Course continues on-campus during autumn quarter.

611 Great Lakes Education Workshop UGRD 1-4
Techniques and curriculum for presenting interdisciplinary aspects of the oceans and Great Lakes in formal and nonformal education settings.
* Su, Au, Wi, Sp Qtrs. 10 course hrs per cl, field trip. Prereq: Jr standing or above. Repeatable to a maximum of 10 or hrs. Offered frequently off-campus on request. Cross-listed with Education Teaching and Learning. Taught at F.T. Stone Lab.

614 Marine and Aquatic Education UGRD 3
Overview of oceanic and Great Lakes resources, their roles in history, climate, commerce, and culture, examination of teaching materials for formal and informal settings.
* Su, Wi Qtrs. 1 3-hr cl, field trip. Prereq: 20 or hrs of social, physical, and/or biological sciences or teacher certification, and permission of instructor. Cross-listed with Educational Studies. Travel and subsistence costs for winter field trip must be borne by students. Taught at F.T. Stone Lab.

615 Environment, Risk, and Decision Making: Theory UGRD 5
The theory and psychology behind individual and group decision making for the environment and other risk management contexts.
Au Qtr. 3 1.5-hr cl. Prereq: Jr standing or above. Not open to students with credit for ENR 815.

617 Aquatic Environmental Science for Teachers UGRD 3
Classroom adaptable study of coastal/lake environments including physical and biological characteristics and processes, species interactions, management principles, and human environmental impacts.
Su Qtr. 6 days, 8AM-4PM. Prereq: 20 or hrs of physical and/or biological sciences. Taught at F.T. Stone Laboratory.

618 Ecological Engineering and Science UGRD 4
Definition, classification, and practice of Ecological Engineering. Course describes ecological systems and the design of natural systems to provide societal services and benefits to nature.
Wi Qtr. 2 2-hr cl. Prereq: Jr standing with at least one course in one of the following subject areas: biology, ecology, engineering, or geology. Not open to students with credit for CivilEn 618 or FABEng 618 or EnvEng 618. Cross-listed in Food, Agricultural and Biological Engineering and Environmental Engineering.

620 Principles of Fisheries Ecology and Management UGRD 5
Ecological principles applied to conservation and management of aquatic vertebrates. Principles of fisheries management including social and economic factors.
Wi Qtr. 5 Prereq: 319, or grad standing, or permission of instructor.

622 Stream Ecology UGRD 5
Structure, function, and biota of streams and rivers. Emphasis on ecosystem processes and community dynamics over space and time.
Sp Qtr. Prereq: 319 or permission of instructor.

623 Principles of Wildlife Ecology and Management UGRD 5
Principles of population and community ecology applied to conservation and management of terrestrial vertebrates. Principles of wildlife management including social and economic factors.
Au Qtr. 3 1.5-hr cl. Prereq: 319 or NatRes 319 or grad standing or permission of instructor.

624 Wildlife Identification and Management UGRD 5
Characteristics, life histories, and population management of North American game, non-game, and special interest wildlife.
Wi Qtr. 2 1.5-hr cl, 2 2-hr labs, 1-2 Sat field trips required. Prereq: 319 or equiv.

625 Management of Wildlife Habitat UGRD 3
Principles and practices of ecosystem conservation for game, non-game, and special interest wildlife.
Wi Qtr. 3 1-hr cl. Prereq: 319 or permission of instructor.

626 Methods in Aquatic Ecology UGRD 5
Introduction to experimental designs, field and laboratory techniques, and statistical methods commonly used to study aquatic ecosystems.
Au Qtr. 3 cl, 1 4-hr lab, 4 overnight field trips. Prereq: 201 or grad standing.

627 Ecology and Management of Aquatic Invertebrates UGRD 5
Diversity, ecology, and management of the major groups of aquatic invertebrates, with an emphasis on North American freshwater macroinvertebrates.
* Sp Qtr. 3 cl, 1-4 hr/lb. Prereq: 319 or permission of instructor.

628 Aquaculture UGRD 5
Overview of physical, biological and economical factors influencing fish culture systems. World fish production practice comparisons. Emphasis on propagation and conservation efforts.
Wi Qtr. 3 cl, 1-4 hr/lb. 2 fish hatchery trips. Prereq: 319 or grad standing.

629 Ecology and Management of Wetlands Birds UGRD 3
Ecology and habitat relationships of wetland birds that inhabit the Lake Erie region. Management of wetlands as wildlife habitat.
Su Qtr. Prereq: College Biology, Ecology, or permission of instructor. Taught at F.T. Stone Lab.

630 Soils of Forest Ecosystems UGRD 3
Characteristics and processes of soils in natural and managed forests; interactions of forest communities and soils; management of soils in forest ecosystems.
Su Qtr. Prereq: Designed for undergraduate and graduate students, and practicing professionals in forestry and soil science.

631 Arboriculture UGRD 5
Integration of environmental factors and culture practices necessary to establish, grow, and maintain plant function in the landscape in an ethical, cost effective manner.
Au Qtr. 4 cl, 1-2 hr/lb. Prereq: HCS 234 or ENR 221. 400 level course in Entomol or PntPh is strongly recommended. This course is available for EM credit.
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635 Forest Management UGRD 4
Application of biological, economic, and planning principles to address the sustainable management of forest resources with emphasis on the timber resource and associated products.
Wi Qtr. 2 2-hr cl. Prereq: 323 and 333, or permission of instructor.

640 Natural Resources Program Planning I UGRD 5
Inventory and evaluation of natural resources for program planning with consideration of goals, objectives and actions, budgeting, and planning documents.
Au Qtr. 2 1.5-hr cl, 1.2-hr lab. Prereq: 311 or 340 and 400.

641 Natural Resources Program Planning II UGRD 3
Application of concepts, strategies, and data from Natural Resources Program Planning I to a field planning exercise.
Wi Qtr. 1 2-hr cl. Prereq: 640.

642 Natural Resources Administration UGRD 5
Organization and administration of parks and associated recreation areas and activities.
Sp Qtr. 1 1-hr cl. Prereq: 400 or permission of instructor.

643 Outdoor Recreation and Tourism by the Private UGRD 4 Sector
Factors influencing supply and demand for outdoor recreation and tourism facilities provided by the private sector; the feasibility study, liability, insurance, and other managerial concerns.
Sp Qtr. 4 d. Prereq: 545.

649 Wildlife Conservation Policy UGRD 4
Overview of fish and wildlife policy in the US and key issues affecting wildlife conservation in North America. Wi Qtr. Prereq: 400.

650 Soil Landscapes: Morphology, Genesis and Classification UGRD 5
Course in soil genesis, classification and mapping.
Au Qtr. 2 2-hr cl, 1-hr lab. Prereq: 300.01 and 300.02 or permission of instructor.

651 Water Resources Institutions and Policies UGRD 5
Review and advanced analysis of Ohio, interstate, and federal institutions and policies which influence the use and management of water resources.
Wi Qtr. 2 2-hr cl, 1 1-hr cl. Prereq: 400 or permission of instructor and sr standing or grad standing.

655 The Soil Physical Environment UGRD 4
Principally involves the state and transport of water, heat and gas within soil, and the associate soil physical properties.
Au Qtr. 4 hrs lec. Prereq: 300.01, Physics 111 or 113 and Math 150 or equiv.

656 Ecosystems of the World: Temperate, Boreal and High Latitude Ecosystems UGRD 3
Intermediate course in ecology emphasizing structure-function relations at broad scales, incorporating soil development, geomorphology, climate, and human impact into analyses of major temperate, boreal, and polar ecosystems.
Wi Qtr. 2 1.5-hr cl. Prereq: Sr or grad standing; PCMB 413.01 or EEOB 413.01 or equiv, and 20 additional hrs in natural science or natural resources or permission of instructor. Not open to students with credit for EEOB 656 or PCMB 656. Cross-listed in Evolution, Ecology, and Organismal Biology.

660 Soil Chemical Processes and Environmental Quality UGRD 5
A comprehensive study of chemical processes in soils and their impact on environmental quality. Computer laboratory provides hands-on experience with geochemical speciation models.
Wi Qtr. 2 2-hr cl. Prereq: 300.01 or graduate standing or permission of instructor. Not open to students with credit for 680.

662 Wildlife Ecology Methods UGRD 5
Methods used by professional wildlife ecologists to measure population characteristics and influence the use and management of water resources.
Wi Qtr. 2 2-hr cl. Prereq: Sr or grad standing; PCMB 413.01 or EEOB 413.01 or equiv, and 20 additional hrs in natural science or natural resources or permission of instructor. Not open to students with credit for EEOB 656 or PCMB 656. Cross-listed in Evolution, Ecology, and Organismal Biology.

663 Soil Physical Properties in the Field UGRD 3
A comprehensive study of microbial communities and their role in providing ecosystems services.
Sp Qtr. 2 2-hr cl. Prereq: 300.01 or SoiSci 300.01. Not open to students with credit for 682.

671 Environmental Soil Physics UGRD 5
Soil physical, mechanical, hydrological and rheological properties in relation to environmental quality including: Greenhouse effect, wetland management, irrigation and salinity, soil erosion, tillage and mulching.
Wi Qtr. 3 cl, 2 2-hr labs.

675 Environmental Fate and Impact of Contaminants in Soil and Water UGRD 4
An overview of contaminant sources, transport through soil and water, and environmental fate and impact to human and ecosystem receptors.
Sp Qtr. 2 2-hr cl. Prereq: Two qtrs of chemistry.
### 200 Environment and Natural Resources

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>733</td>
<td>Successional Dynamics of Forests</td>
<td>UGRD 5</td>
<td>Analysis of past development of forest stands; examination of major processes causing changes over time in communities of trees. *Wi Qtr. 2 hr lab, and arranged 1 or 2 all-day field trips. Prereq: Sr or grad standing; permission of instructor. Taught in odd years.</td>
</tr>
<tr>
<td>734</td>
<td>Forest Ecosystem Management</td>
<td>UGRD 4</td>
<td>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 Qtr. 2 2-hr d. Prereq: Sr or grad standing and permission of instructor.</td>
</tr>
<tr>
<td>736</td>
<td>Public Forest and Lands Policy</td>
<td>UGRD 4</td>
<td>Explores fundamental and leading-edge concepts in U.S. public forest and lands policy. Emphasizes political, legal, and administrative issues of federal and state lands, especially forests. *Wi Qtr. 2 2-hr d. Prereq: 400 or grad standing.</td>
</tr>
<tr>
<td>738</td>
<td>Climate and Society</td>
<td>GRAD 4</td>
<td>Examines links between climatic changes and human societies and examines social influences on our current state of knowledge, impacts, and potential responses. Wi Qtr. Prereq: Grad standing or undergraduates with permission of instructor.</td>
</tr>
<tr>
<td>740</td>
<td>Field Soil Investigation: Soil Chemistry, Fertility and Biology</td>
<td>UGRD 4</td>
<td>A comprehensive overview of theory, principles and techniques of laboratory methods used for chemical analysis of soil, plant material, and environmental samples. Sp Qtr: 2-1 hr d; 2-2 hr lab. Not open to students with credit for 672.</td>
</tr>
<tr>
<td>750</td>
<td>Resolving Social Conflict</td>
<td>GRAD 4</td>
<td>A multidisciplinary examination of social conflict, its dynamics, and its negotiated and consensual resolution; offers a broad-based framework for diagnosing and managing conflict; applied to legal, environmental, organizational, and geopolitical conflicts. Au Qtr. 1 3-hr d. Prereq: Grad standing or permission of instructor. Cross-listed in Business Administration: Interdisciplinary and City and Regional Planning.</td>
</tr>
<tr>
<td>752</td>
<td>Environmental Science and Law</td>
<td>GRAD 4</td>
<td>Introduction to the common and statutory law and administration of environmental protection, with special emphasis on scientific and technological aspects. Au Qtr. 2 2-hr cl. Prereq: ENR 400 or Sr or grad standing or permission of instructor.</td>
</tr>
<tr>
<td>753</td>
<td>Soil Mineralogy</td>
<td>UGRD 5</td>
<td>Theory and application of methods for analyzing minerals in soil environments, including X-ray, thin section, electron optical, thermal, and wet chemical techniques. *Wi Qtr. 3 cl, 2 2-hr labs. Prereq: Grad standing or permission of instructor.</td>
</tr>
<tr>
<td>756</td>
<td>Rehabilitation/Restoration of Ecosystems</td>
<td>UGRD 3</td>
<td>Intermediate-level course dealing with ecosystems drastically disturbed by human impacts and strategies employed to rehabilitate and restore them for long-term biological productivity and use. Au Qtr. 2 1.5-hr cl. Prereq: Sr or grad standing: 201, 203 and 20 additional hrs in natural resources or natural science; or permission of instructor.</td>
</tr>
<tr>
<td>760</td>
<td>Ecosystem Modeling</td>
<td>UGRD 5</td>
<td>Development and simulation models for natural resource/ecosystem management conceptual and symbolic models, simulation techniques on main frame and microcomputers. *Wi Qtr. 5 cl. Arr. Prereq: Math 151 and EEB 413.01 or EEB 503.01 or equiv. Taught in odd years.</td>
</tr>
<tr>
<td>761</td>
<td>Soil Biochemistry</td>
<td>UGRD 4</td>
<td>Soil biochemical techniques, elemental transformations, biologically active compounds, pesticide metabolism, and fate of genetic materials in soils. Wi Qtr: 2 2-hr cl. Prereq: 300.01, Chem 231, Biochem 511.</td>
</tr>
<tr>
<td>770</td>
<td>Watershed Ecology and Restoration</td>
<td>UGRD 4</td>
<td>Fundamental ecological processes affecting streams, wetlands, and rivers at the watershed scale and the emerging roles of restoration and adaptive management in disturbed aquatic ecosystems. *Au Qtr. 3 hr lecture, field trips. Prereq: Grad standing or permission of instructor. Offered every other year.</td>
</tr>
<tr>
<td>797</td>
<td>Interdepartmental Seminar</td>
<td>UGRD 1-5</td>
<td>Two or more departments may collaborate in presenting seminars in subjects of mutual interest topics to be announced. Su, Au, Wi, Sp Qtrs. Repeatable.</td>
</tr>
<tr>
<td>799</td>
<td>Current Topics in Environment and Engineering</td>
<td>UGRD 1</td>
<td>Summer seminar which presents research, management and policy of topics in science, environment and engineering. Su Qtr. 1.5 hrs/wk, 5 week term. Taught at F.T. Stone Laboratory. Repeatable to a maximum of 3 or hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>800</td>
<td>Research in Natural Resources</td>
<td>GRAD 3</td>
<td>The use of science and research to address natural resource problems; development of a thesis proposal. Au Qtr. 2 1.5-hr cl. Prereq: Grad standing. This course is graded S/U.</td>
</tr>
<tr>
<td>815</td>
<td>Advanced Environment, Risk and Decision Making</td>
<td>GRAD 5</td>
<td>Theory of individual and participatory risk-based decision making and applications to improve risk communication and decision making in environmental and other risk-based management contexts. *Wi Qtr.</td>
</tr>
<tr>
<td>835</td>
<td>Ecosystem Management Policy</td>
<td>GRAD 5</td>
<td>Theory and practice of integrating natural and social science for managing watersheds, forests, and regions. Foundations, adoption, and potential future for this emerging natural resources paradigm. *Au Qtr. 2 2-hr cl, 1 2-hr lab. Prereq: Grad standing. Service learning may include off-campus field experience.</td>
</tr>
<tr>
<td>840</td>
<td>Theoretical Foundations in the Human Dimensions of Ecosystem Management</td>
<td>GRAD 3</td>
<td>Provides an overview of interdisciplinary theories and frameworks for understanding and addressing natural resources management issues. Au Qtr. Prereq: Grad standing.</td>
</tr>
<tr>
<td>851</td>
<td>Human Dimensions Theory Building in Natural Resources</td>
<td>GRAD 4</td>
<td>Explores fundamental concepts in human dimensions theory building related to natural resources. Bridges qualitative and quantitative research approaches, applied to developing a practice thesis proposal. *Wi Qtr. 2 2-hr cl. Prereq: Grad standing.</td>
</tr>
<tr>
<td>871</td>
<td>Soils and Climate Change</td>
<td>GRAD 3</td>
<td>Soil processes, abrupt climate change, trace gases and their properties, global C cycle, greenhouse emissions, C-neutral fuels, carbon sequestration, Kyoto Treaty, trading of C credits. Wi Qtr.</td>
</tr>
<tr>
<td>880</td>
<td>Natural Resources Seminar</td>
<td>GRAD 1</td>
<td>Required of all graduate students in natural resources. Au, Wi, Wi Qtrs. 1 2-hr cl. Prereq: Grad standing. Repeatable. This course is graded S/U.</td>
</tr>
<tr>
<td>885</td>
<td>Advanced Individual Studies</td>
<td>GRAD 1-5</td>
<td>Individual studies in selected areas not otherwise offered in natural resources. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Grad standing and permission of instructor. Repeatable. Not for use by PhD candidates who have passed the general examination. Not more than 10 hrs of any 693 and/or any 893 will apply toward the master's degree. This course is graded S/U.</td>
</tr>
<tr>
<td>894</td>
<td>Advanced Group Studies</td>
<td>GRAD 2-5</td>
<td>Advanced group studies in the nature and management of natural resources. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 10 or hrs.</td>
</tr>
<tr>
<td>897</td>
<td>Research Proposal Symposium</td>
<td>GRAD 1</td>
<td>A symposium for graduate students to present thesis and dissertation proposals. Sp Qtr. Arr. Prereq: Grad standing. Repeatable to a maximum of 6 or hrs. This course is grade S/U.</td>
</tr>
<tr>
<td>899.01</td>
<td>Fish and Wildlife Management Seminar</td>
<td>GRAD 2-5</td>
<td>Seminar on special topics in fish and wildlife ecology and management. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 160 or hrs, each subdivision repeatable to 20 or hrs.</td>
</tr>
<tr>
<td>899.02</td>
<td>Watershed Ecology and Management Seminar</td>
<td>GRAD 2-5</td>
<td>Seminar on special topics in watershed ecology and management. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 160 or hrs, each subdivision repeatable to 20 or hrs.</td>
</tr>
<tr>
<td>899.03</td>
<td>Environmental Science Seminar</td>
<td>GRAD 2-5</td>
<td>Seminar on special topics in environmental science. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 160 or hrs, each subdivision repeatable to 20 or hrs.</td>
</tr>
<tr>
<td>899.04</td>
<td>Soil Science Seminar</td>
<td>GRAD 2-5</td>
<td>Seminar on special topics in soil science. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 160 or hrs, each subdivision repeatable to 20 or hrs.</td>
</tr>
<tr>
<td>899.05</td>
<td>Forest Science and Management Seminar</td>
<td>GRAD 2-5</td>
<td>Seminar on special topics in forest science and management. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 160 or hrs, each subdivision repeatable to 20 or hrs.</td>
</tr>
<tr>
<td>899.06</td>
<td>Environmental Policy and Decision-Making Seminar</td>
<td>GRAD 2-5</td>
<td>Seminar on special topics in environmental policy and decision-making. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 160 or hrs, each subdivision repeatable to 20 or hrs.</td>
</tr>
<tr>
<td>899.07</td>
<td>Environmental Education and Communication</td>
<td>GRAD 2-5</td>
<td>Seminar on special topics in environmental education and communication. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 160 or hrs, each subdivision repeatable to 20 or hrs.</td>
</tr>
</tbody>
</table>
Environmental Engineering

413 Fluid Mechanics UGRD 4
Fluid properties; fluid statics; flow concepts; continuity, energy, and momentum equations; dimensional analysis and dynamic similarity; viscous effects; drag; basic pipe flow; lab demonstrations and experiments.

511 Introduction to Environmental Engineering UGRD 3
Quantitative analysis of water, air, and noise pollution, hazardous waste management, ionizing radiation, occupational and environmental health engineering, and pollution prevention.

516 Water Resources Engineering UGRD 4
Pipe systems, introduction to open channel flow, basic hydrology, demographic studies, water supply, and wastewater flows.

619 Environmental Engineering Capstone Design UGRD 4
A laboratory demonstration of the treatment processes discussed in 520 and an introduction to pilot-testing procedures for environmental engineering majors.

624 Coastal and Ocean Engineering UGRD 4
Linear and nonlinear waves, water level and wave forecasting spectra, forces on fixed structures, beach processes, littoral drift, and transport; shoreline protection.

699 Research GRAD 1-18
Research for thesis or dissertation purposes only.

Environment and Natural Resources
202 Environmental Engineering

718 Strategies for Industrial Environmental Management
Industrial environmental management systems, audits, accounting, reports; industrial ecology; design for environment; ISO 14000, 14000; global competition; entrepreneurship; case studies. Au Qtr. 1.5-3 cr. Prereq; or concurrent 540 or CivilEn 540 or equiv with permission of instructor. Not open to students with credit for CivilEn 718.

719 Water Quality Modeling
Stream and efficient standards for beneficial uses, and computer modeling of pollutant impacts on rivers. * Au Qtr. 3 cr. Prereq; 520 or CivilEn 520 or equiv with written permission of instructor. Not open to students with credit for CivilEn 719. Offered in even years.

720 Environmental Engineering Risk Assessment
Basic methodologies for quantitative risk assessment and applications to a variety of contaminants, pathways, and engineering problem areas. Wi Qtr. 3 cr. Prereq; CivilEn 540 or CivilEn 540 or grad standing. Not open to students with credit for CivilEn 720.

722 Open Channel Hydraulics
Flow classifications, channel properties, energy and momentum principles, critical flow, uniform flow formulas, erodible and nonerodible channel design, and gradually varied flow profile computations. 4 cr. Prereq; CivilEn 516. Not open to students with credit for CivilEn 722. Cross-listed in Civil Engineering.

723 Transport Phenomena in Water Resources Engineering
Water environment momentum mass energy transport, laminar and turbulent mixing; applications include river and lake pollutant dispersion, heated effluent plumes, eutrophication processes. 4 cr. Prereq; CivilEn 516 and Math 255 or 415, or equivs. Not open to students with credit for CivilEn 723 or 721. Cross-listed in Civil Engineering.

760 Civil and Environmental Engineering Planning
Water resource planning process; benefit-cost analysis; environmental, economic, and social impacts of civil engineering projects; project selection; and case studies in water resources, transportation, and energy. 5 cr. Prereq; CivilEn 516 or Math 516. Not open to students with credit for CivilEn 760 or 761 or 762. Cross-listed in Civil Engineering.

771 Radioactive Waste Management
Overview of radioactive waste management. Covers waste categories, sources, treatment and disposal methods, minimization, transportation and current research topics. 3 cr. Prereq; CivilEn 505 or CivilEn 606 or permission of instructor. Not open to students with credit for CivilEn 771 or CivilEn 762. Cross-listed in Nuclear Engineering.

783H Honors Research
Supervised research and project work arranged individually for honors students. Prereq: Honors standing; permission of instructor. Limitations on number of credit hours applicable toward degree are governed by departmental rules. This course is graded S/U.

797 Interdepartmental Seminars
Two or more departments may collaborate in presenting seminars in subjects of mutual interest. Topics to be announced. Repeatable. Cross-listed in Civil Engineering.

798 Current Topics in Environmental Science and Engineering
Seminar course which presents current research findings on environmental quality and pollution control. Au, Sp Qtr. 1-3 cr. Prereq; Grad standing in Engineering, Science, NatRes, or Agr., or permission of instructor. Repeatable to a maximum of 3 or 4 cr. Not available for simultaneous credit as ENR 798. Cross-listed in Environmental and Natural Resources.

Environmental Science

694 Group Studies
Group Studies. Su, Aw, Wi, Sp Qtr. Prereq; Permission of instructor. Repeatable to a maximum of 15 cr hrs.

697 Study at a Foreign Institution
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Su, Aw, Wi, Sp Qtr. 1-3 cr. Prereq; Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This course is Progress (P) graded. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

793 Individual Studies in Environmental Science
Affords the qualified student the opportunity for independent reading, study, practical experience, or laboratory work in a specialized field of interest. Su, Aw, Wi, Sp Qtr. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

796 Current Research Issues in Environmental Studies
Graduate seminar where faculty from within and outside the University and graduating students will present their research. Au, Wi, Sp Qtr. Repeatable to a maximum of 4 cr hrs. This course is graded S/U.

999 Research in Environmental Science
Research for thesis or dissertation purposes only. Su, Aw, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

Evolution, Ecology and Organismal Biology

110 Introduction to Local Flora
Structures, processes, and stages of the plant life cycle; common families of flowering plants; plant geography, ecology, and conservation; and uses of plants. Su Qtr. 1 week at Stone Laboratory. Prereq; A course in high school biology.

125 Introductory Aquatic Biology
Components of the ecosystem in freshwater aquatic environments at Stone Laboratory. Su Qtr. 1 week at Stone Laboratory. Prereq; A course in high school biology. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

126 Introduction to the Study of Birds
An introductory course for students interested in ornithology including bird identification, ecology, and ornithology, with an emphasis on field and laboratory techniques. Su Qtr. 1 week at Stone Laboratory. Prereq; Successful completion of a course in high school biology.

210 Local Flora
A lecture, laboratory, and field course in identifying common Ohio plants; emphasis on taxonomic principles, use of keys and manuals, and field recognition of plants. Su, Sp Qtrs. 3 cr. 2-2 hr labs, several Sat field trips. Prereq; Biology 114, or PlantBiol 102 or 112, or equiv with written permission of instructor. Not open to students with credit for PlantBiol 210. NS Admin Cond course. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

232 Introductory Physiology
A survey of the human nervous system, sense organs, muscle function, circulation, respiration, digestion, metabolism, kidney function, and reproduction. Su, Wi, Sp Qtrs. 5 cr. Prereq; 5 cr hrs in general biology or general chemistry; Biology 102 or 113 recommended. Credit does not count toward a major in evolution and ecology or zoology. Not intended for biological science majors. GEC bio sci course. NS Admin Cond course.

235 Introductory Anatomy
An introduction to mammalian anatomy with emphasis on human anatomy; dissection of cat. Su, Wi Qtrs. 3 cr. 1.5 hr lab. Prereq; 5 cr hrs in general biology (Biology 102 recommended) or Anthrop 200. Credit does not count toward a major in evolution and ecology or zoology. Not intended for biological science majors. GEC bio sci course. NS Admin Cond course. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

293 Individual Studies
Individual work in the field of the chosen problem. Su, Aw, Wi, Sp Qtr. Prereq: 405; and written permission of instructor. Repeatable to a maximum of 15 or 20 cr hrs. Only 5 hrs to count on evolution and ecology or zoology majors. This course is graded S/U.

294 Group Studies
Study of selected topics in evolution, ecology, and organismal biology. Su, Aw, Wi, Sp Qtr. Prereq; Permission of instructor. Repeatable to a maximum of 10 or 15 cr hrs.

322 Introduction to Ornithology
The general biology of birds with emphasis on their natural histories and on the field identification of local species. Sp Qtr. 3 cr. 2-2 hr labs. Prereq; 5 cr hrs in introductory biology. NS Admin Cond course. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

350 Dynamics of the Dinosaurs
Review of current information on dinosaur biology, emphasizing scientific approaches to reconstructing dinosaurs as living, dynamic animals. Sp Qtr. 3 cr. Prereq; 5 cr hrs of biological science or historical geology course work.

370 Extinction
Exploration of the causes of, and possible solutions to, the present-day global extinction event. Sp Qtr. 2.5-3 hr cr. Prereq; 5 cr hrs of biological sciences course work.

400 Evolution
Basic conceptual issues and processes in evolution with emphasis on the ecological basis of adaptation and consequences of natural selection. 400H (honors) may be available. Su, Aw, Wi, Sp Qtrs. 5 cr. Prereq; Biology 114 or 116H. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

400H Evolution
Basic conceptual issues and processes in evolution focusing on the ecological basis of adaptation and consequences of natural selection; class discussions, reading, and writing assignments. Wi Qtr. 3-80 min cr. Prereq; Honors program or permission of department or instructor; Biology 114 or 116H, and MolGen 500 or 501.
Evolution, Ecology and Organismal Biology  203

405.01 Diversity and Systematics of Organisms:  UGRD  4
Lecture
Survey of organismal diversity and the evolutionary relationships between and within major
taxonomic groups.
4 c. Prereq; 400.
405.02 Diversity and Systematics of Organisms:  UGRD  2
Laboratory
Laboratory survey of animal diversity (including animal-like protists), and the evolutionary
relationships between and within major taxonomic groups.
2 2-hr labs. Prereq; 400; prereq or concur: 405.01.
Requires materials and/or equipment for which an additional fee has been assessed. Course

410 Animal Form and Function  UGRD  4
Functional systems in invertebrates and vertebrates: respiration; circulation; water, ion, and
energy balance; communication; locomotion; and reproduction. 410H (honors) may be available
Au, Wi, Sp Qtrs. 3 c. 1 1-hour discussion. Prereq: Biology 114 or 116H, Chem 122, Math 148, and
Physics 111 or 131.

415 Principles of Animal Cellular and  UGRD  4
Developmental Biology
Introduction to the structure and function of animal cells, and to patterns of early development in
vertebrates and invertebrates. 415H (honors) may be available.
Wi Qtr. 4 c. Prereq: 400 or 400H, recommended; Biology 113 or 115H, Chem 231 or 252, and
Physics 112 or equiv. Not open to students with credit for MIA 502.

440 Introductory Ethology  UGRD  5
Observations of animal behaviors, and introductory analysis of their adaptive value,
physiological mechanisms, development, and evolution; emphasis on movie presentations,
reading, and small-group discussions.
Au Qtr. 4 c. 1-2 hr field work per week. Prereq; 405. GEC third writing course.
Requires materials and/or equipment for which an additional fee has been assessed. Course

470 Biology of Vertebrates  UGRD  5
Analysis of the anatomical, physiological, behavioral and ecological characteristics of the
major vertebrate groups.
Au Qtr. 3 c. 2-2 1/2 hrs. Prereq; 405.
Requires materials and/or equipment for which an additional fee has been assessed. Course

502 Plants and People  UGRD  4
Introductory course on the botany and historical uses of economically important plants; topics
include the major food, spice, drug and industrial plants, their domestication and cultural
significance.
** Au Qtr. 3 c. 1 arr. Prereq; 5 or 5 hrs in biological sciences.

503.01 Introduction to Ecology: Lecture  UGRD  4
Distribution and abundance of species, population dynamics, community ecology, ecosystem
dynamics, and applied perspectives.
Au, Wi Qtrs. 4 c. Prereq; 10 or hrs in biological sciences. Not open to students with credit for
413.01.

503.02 Introduction to Ecology: Laboratory  UGRD  2
Critique of ecological primary literature, analysis of ecological data, and design and execution of
experiments.
Au, Wi Qtrs. 2 c. Prereq or concur; 413.01 or 503.01. Not open to students with credit for
413.02.
Requires materials and/or equipment for which an additional fee has been assessed. Course

503.03 Introduction to Ecology: Lecture and Lab  UGRD  6
Distribution and abundance of species, population dynamics, community ecology, ecosystem
dynamics, applied perspectives, and design and execution of experiments.
Su Qtr. Prereq; Math 151 and Biology 402 or 20 hrs in biological sciences. Not open to students with
credit for 413.01 or 413.02 or 413.03 or 503.01 or 503.02.
Requires materials and/or equipment for which an additional fee has been assessed. Course

505 Marine Biology and Ecology  UGRD  5
Diversity and distribution of marine organisms; population dynamics, productivity, and structure
of marine ecosystems; human impact on ocean resources.
Su Qtr 3 all-day cl per wk for 1 term at Stone Laboratory. Prereq; 405, or PCMB 102 or
equiv; PCMB 413.02, or 413.03 recommended.

510 Field Botany  UGRD  5
Collection, preservation, field and laboratory identification, and local distribution of plants of the
major groups, Su, Sp Qtrs. 3 c. 1 3-hr lab. Prereq; Biology 102 or 114, or PCMB 102 ; or permission of
instructor.

511 Local Flora for Teachers  UGRD  3
Basic botanical and identification skills, field experience, and preparation of lessons for the
classroom with special attention given to IDE Academic Content Standards.
Su Qtr. One week full-time at Stone Laboratory. Prereq; In-service teacher, non-formal educator,
or education major with jr standing or above. No graduate credit for plant biology majors.
Requires materials and/or equipment for which an additional fee has been assessed. Course

512 Laboratory in Comparative Vertebrate Anatomy  UGRD  2
Introduction to trends in vertebrate evolution as illustrated by the anatomy of select taxa; involves
dissection of specimens.
Au, Wi, Sp Qtrs. 1 1/2-hr lab. Prereq or concur; 410.
Requires materials and/or equipment for which an additional fee has been assessed. Course

513 Field Ecology  UGRD  3
A field based introduction to the distribution and abundance of animals and plants in pond, lake,
river, marsh, beach, field and woodland ecosystems.
Su Qtr. 1 week full-time at Stone Laboratory (8AM-4PM, evenings 7PM-9PM). Prereq; At least
jr standing by the summer of enrollment, minimum GPA 2.5 and completion of 15 hours of
biology including introductory ecology, or permission of instructor.
Requires materials and/or equipment for which an additional fee has been assessed. Course

522 Ornithology for Teachers  UGRD  3
Field and laboratory studies of birds, discussion of birds of the world and their classification
with resource material for classroom teachers and other educators.
Su Qtr. 1 week full-time at Stone Laboratory. Prereq; In-service teacher, non-formal educator,
or education major with sr standing.

550 Comparative Endocrinology  UGRD  3
Introduction to hormones and hormone action; comparison between vertebrates and
invertebrates with emphasis on special situations such as metamorphosis.
Sp Qtr. 3 1-hr cl. Prereq; Biochem 511 or equiv. Not open to students with credit for Entomol
550. Cross-listed in Entomology.

557H Tropical Field Ecology  UGRD  3
Study of tropical ecosystems and biodiversity; includes travel to Costa Rica, independent field
experimentation, and inquiry into the natural history of tropical plants and animals.
Sp Qtr. Arr. Prereq; 413.01; enrollment in an honors program and permission of instructor.
Travel to Costa Rica over Spring break. Mandatory organizational meetings Wi Qtr. Students
will pay Ohio State fees as well as travel and subsistence costs.

597.02 Antarctic Marine Ecology and Policy  UGRD  5
Historical and contemporary evaluation of Antarctic resource management and its scientific
basis. 597.02H (honors) may be available.
Au, Wi, Sp Qtrs. 3 1.5 c. Prereq; Sr standing. Not open to students with credit for IntSds
597.02 or NatRes 597.02. Cross-listed in International Studies and Natural Resources. GEC
temporary world course.

611 Aquatic and Wetland Flora  UGRD  5
Aquatic plants, other than the algae, of Great Lakes region; field and laboratory work on their
identification and ecological and geographical relations.
Su (2nd term) Qtr. 5 all-day cl per wk for 3 wks at Stone Laboratory. Prereq; PlantBio 102 or 112
and 15 or 20 hrs in biological sciences. Not open to students with credit for PlantBio 611.

617 Theoretical Ecology I  UGRD  5
The models, assumptions, and conclusions of the mathematical theory of ecology including
stability notions, deterministic and stochastic models, and models for patchy environments.
* Wi Qtr. 3 c. Prereq; 413.01 or 413.03, equiv; and introductory calculus. This course is graded
S/U.

620 Animal Communication  UGRD  4
Study of the structure of animal communication signals, methods used by scientists in this field,
and how signals function and evolve.
Wi Qtr. 3 lecture, 1 lab. Prereq; 440 or permission of instructor.
Requires materials and/or equipment for which an additional fee has been assessed. Course

621 Ichthyology  UGRD  5
Study of the distribution and classification of fishes, which includes methods of identification,
collection, and preservation.
Su Qtr. 3 all-day cl per wk for 1 term at Stone Laboratory. Prereq; 405 or equiv.

622 Field Herpetology  UGRD  3
Study of the distribution and classification of reptiles and amphibians of Ohio, which includes
methods of field research, species identification, collection, preservation and conservation.
Su Qtr. 3 all-day cl per wk for 1 term at Stone Laboratory. Prereq; Junior rank by summer of
enrollment, min. GPA 2.5, 15 credit hours in biological sciences.
Requires materials and/or equipment for which an additional fee has been assessed. Course

625 Mammalogy  UGRD  5
Mammals of the world, their natural history, distribution, taxonomy, and major anatomical and
physiological adaptations; study of local species emphasized in lab.
Wi Qtr. 3 c. 2 2-hr labs. Prereq; 405 or equiv.
Requires materials and/or equipment for which an additional fee has been assessed. Course
204  Evolution, Ecology and Organismal Biology

626  Biology of Fishes  UGRD  5
Lecture emphasis on the behavior, migration, distribution, and evolution of fishes; laboratory emphasis on ecological and systematic ichthyology.
Sp Qtr. 3 cl, 1.5-hr lab. Prereq: 405 and 15 cr hrs in biological sciences; or permission of instructor.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

630  Vertebrate Histology  UGRD  5
Examination and analysis of the functional morphology of cells and tissues of vertebrate animals, with emphasis on mammalian histology.
Sp Qtr. 3 cl, 2-3 hr labs. Prereq: 5 or 15 cr hrs in biological structure/functions e.g., 410 or 415 or permission of instructor. GEC third writing course.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

632  Neurobiology  UGRD  3
Integration of studies of sensory, integrative and motor systems with evolution and ecology.
* Sp Qtr. 3 cl. Prereq: 10 or hrs in biological sciences at 500 level or above, or grad standing.

640  The Genetic Basis of Evolution  UGRD  5
The modern theory of evolution and its underlying genetic basis.
Sp Qtr. 3.5-1.5-hr cl. Prereq: MolGen 500 or MolGen 506 or equiv. Not open to students with credit for MolGen 640. Cross-listed in Molecular Genetics.

647  Plankton  UGRD  5
Examination of phytoplankton and zooplankton communities, emphasizing population dynamics, seasonality, predation, and productivity; lab emphasis on identification and quantitative methods for collecting and enumerating plankton.
Au Qtr. 2 cl, 2-3 hr labs, 1 required week field trip to Lake Erie. Prereq: English 110 or 111 or equiv, and 20 cr hrs in biological sciences recommended; 413.01 or 413.03 or 652 or 665, recommended. Occasionally offered at Stone Laboratory. GEC third writing course.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

651  Field Zoology  UGRD  5
Field and laboratory identification of aquatic and terrestrial vertebrates and invertebrates of the region, in relation to habitats occupied.
Su Qtr. 3 all-day cl per wk for 1 term at Stone Laboratory. Prereq: 405 or equiv.

652  Limnology at Stone Laboratory  UGRD  5
Study of physical, geological, chemical and biological factors influencing freshwater life; field and laboratory techniques for determining lake morphometry, chemistry and biological productivity are emphasized.
Su Qtr. 3 all-day cl per wk for 1 term at Stone Laboratory. Prereq: 405 or equiv; 10 cr hrs in chem; 10 cr hrs in physics; and written permission of instructor.

653  Fish Ecology  UGRD  5
Field and laboratory studies of life histories and interspecific relationships of fishes and of the various factors influencing their abundance.
Su Qtr. 3 all-day cl per wk for 1 term at Stone Laboratory. Overnight field trips. Prereq: 621.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

654.01 Ecological Physiology of Animals  UGRD  4
Study of the habitat includes physical and chemical adjustment, tolerance, and acclimatization to environment by vertebrates and invertebrates.
* Wi Qtr. 4 cl. Prereq: 410 or equiv.

654.02 Ecological Physiology of Animals: Third Writing  UGRD  5
Course
Study of the habitat including physical and chemical adjustment, tolerance, and acclimatization to environment by vertebrates and invertebrates.
* Wi Qtr. 4 cl. Prereq: 410 or equiv.

655  Limnology  UGRD  5
Aquatic Ecology: 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.
Sp Qtr. 3 cl, 1.5-4 hr lab, several field trips (1 required field trip to Lake Erie). Prereq: 10 or hrs in chem and 20 or hrs in biological sciences.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

657  Experimental Field Ecology  UGRD  5
Field research projects in plant and animal and aquatic and terrestrial ecology, emphasizing experimental design, data collection, analysis, interpretation, and expression of results.
** Au Qtr. Prereq: 413.02 or 413.03, and at least 15 cr hrs in biological sciences.

661  Conservation Biology  UGRD  5
Application of population and community ecology, population genetics, and biogeography to the study and conservation of biodiversity, threatened communities, and endangered species.
Au Qtr. 3 cl, 1.5-hr lab, occasional field trips (some Sat). Prereq: 15 or hrs in biological sciences above the 100 level, including 413.01 or 413.03.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

671  Plant Population Ecology  UGRD  5
Quantitative study of plant population processes, evolutionary ecology, and ecological methods.
Au Qtr. 3 cl, 1.5-4 hr lab, field trips. Prereq: 413.01 or 413.03, or Math 151; and 15 cr hrs in biological sciences.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

672  Taxonomy of Vascular Plants  UGRD  5
A laboratory and lecture course concerning the classification of vascular plants; emphasis on taxonomic principles, systems of classification, family characteristics and relationships.
* Au Qtr. 3 cl, 2-3 hr labs. Prereq: 15 and 10 additional cr hrs in biological sciences; or permission of instructor.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

673  Evolutionary Processes in Flowering Plants  UGRD  5
Origin of variation in plants with emphasis on evolutionary processes unique to the flowering plants.
* Au Qtr. 5 cl.

674  Physiological Ecology of Plants  UGRD  5
Physiological relationships between light, water, mineral nutrients and plant growth, including plant-insect and plant-microbe interactions.
* Au Qtr. 3 cl, 1.5-4 hr lab. Prereq: 413.02 or 413.03, and 15 or hrs in biological sciences.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

692  Workshop  UGRD  1-5
Intensive study of topics in evolution, ecology, and organismal biology; format will depend upon the topic and time.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of workshop director. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

693  Individual Studies  UGRD  2-10
Individual work in the field of the chosen problem.
Su, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 or hrs. No more than 5 or hrs may be counted toward an undergraduate EEOB or Zoology major. This course is graded S/U.

694  Group Studies  UGRD  2-5
Group work in the field of the chosen problem.
Su, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 35 or hrs for grad cr and 20 or hrs for undergrad cr.

695  Senior Seminar in Evolution and Ecology  UGRD  3
Seminar on topics in evolution and/or ecology; required of all undergraduate evolution and ecology majors in their 4th year.
Wi Qtr. 1.2 hr cl. Prereq: 15 hours in the biological sciences at the 200 level or above, and 4th yr standing. Open only to EEOB majors. This course is graded S/U.

697  Study at a Foreign Institution  UGRD  1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This course is Progress (P) graded. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

698.01 Study Tour: Domestic  UGRD  1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only.

698.02 Study Tour: Foreign  UGRD  1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only.

699  Undergraduate Research in Evolution, Ecology, and Organismal Biology  UGRD  1-15
Undergraduate research in evolution, ecology, and organismal biology.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 or hrs. This course is graded S/U.

700  Principles of Biogeography  UGRD  5
Principles and patterns of animal and plant distribution over the world, using historical, geographic, and biological approaches.
* Au Qtr. 5 cl. Prereq: 10 hours of biology.

710  Creation and Evolution: Differing World Views  UGRD  5
Philosophical and historical survey of the controversy over evolution theory and creationist viewpoints.
** Sp Qtr. 5 cl. Prereq: 10 cr hrs of biology. Not open to students with credit for PntBio 710.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>711</td>
<td>Molecular Evolution</td>
<td>UGRD 3</td>
<td>Evolution and population genetics as seen at the molecular level; phenomena, concepts, methods of study, and implications for molecular biology and other disciplines. * Wi Qtr. 3 cl. Prereq: Gen 600 or MolGen 606, and EEOB 640 or MolGen 640 or MolGen 701 or ECOE 400 or equivs or permission of instructor. Not open to students with credit for MolGen 711. Cross-listed in Molecular Genetics.</td>
</tr>
<tr>
<td>713</td>
<td>Molecular Ecology</td>
<td>UGRD 5</td>
<td>Overview of the use of molecular markers in ecological studies. Sp Qtr. 3 cl, 1 rec, 1 3-hr lab. Prereq: 400, and an additional 10 hours of EEOB courses other than 400. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at <a href="http://registrar.osu.edu">http://registrar.osu.edu</a>.</td>
</tr>
<tr>
<td>714.01</td>
<td>Theoretical Ecology II: Lecture</td>
<td>UGRD 4</td>
<td>Dynamic optimization theory applied to ecology and resource management. * Au Qtr. 2 2-hr cl. Prereq: 617, or PlntBio 617; or permission of instructor. Not open to students with credit for 714 or PlntBio 714.</td>
</tr>
<tr>
<td>714.02</td>
<td>Theoretical Ecology II: Lab</td>
<td>UGRD 2</td>
<td>Computer techniques for solving optimization problems in ecology and resource management. * Au Qtr. 1 4-hr cl. Prereq or concn: 714.01. Not open to students with credit for 714 or PlntBio 714. This course is graded S/U.</td>
</tr>
<tr>
<td>720</td>
<td>Community Ecology and Ecosystems</td>
<td>UGRD 5</td>
<td>A quantitative and descriptive approach to the establishment, development, succession, and dynamics of plant communities and their interactions with historic, climatic, soil, and biotic factors. * Sp Qtr. 5 cl. several field trips. Prereq: 413.01 or 413.03 and 20 cr hrs in biological sciences.</td>
</tr>
<tr>
<td>730</td>
<td>Bioacoustics</td>
<td>UGRD 3</td>
<td>Theory and practice of the study of animal sound: physics of sound transmission, acoustic analysis, and the use of sound in communication. ** Au Qtr. 2 cl, 1 2-hr lab, 1 Saturday field trip. Prereq: 440 or 640 or 740, or Psych 601.</td>
</tr>
<tr>
<td>740</td>
<td>Behavioral Ecology</td>
<td>UGRD 5</td>
<td>Comparative study of mechanisms, ontogeny, function and evolution of behavior in its ecological and social contexts. Wi Qtr. 3 1.5-hr cl. Prereq: Grad standing or written permission of instructor.</td>
</tr>
<tr>
<td>741.01</td>
<td>Social Behavior: Lecture</td>
<td>UGRD 4</td>
<td>Theory of the evolution of social behavior in animals, from spacing patterns and mating systems through complex social systems including reproductive division of labor. * Sp Qtr. 2 1.5-hr cl. Prereq: 413.01 or 413.03 or 440 or 640 or 740, or PlntBio 313 or 413.01; or permission of instructor.</td>
</tr>
<tr>
<td>741.02</td>
<td>Social Behavior: Lab</td>
<td>UGRD 2</td>
<td>DNA-based techniques for discerning genetic relatedness among individuals. * Sp Qtr. 6 hrs. Prereq: 741.01; and prereq or concn: MolGen 500 or 501; or permission of instructor.</td>
</tr>
<tr>
<td>737H</td>
<td>Honors Research</td>
<td>UGRD 3-5</td>
<td>A program of reading and research for each student, with individual conferences, reports, and Honors thesis. Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the courses in biological sciences and an average of 8 in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 or hrs. At least 2 qtrs are required of candidates for the Honors program.</td>
</tr>
<tr>
<td>795</td>
<td>Stream Ecology for Teachers</td>
<td>UGRD 3</td>
<td>Introduces high school teachers to concepts and methodologies of stream ecology. Su Qtr. 1 week full time. Taught for OSU’s Stone Laboratory at the Old Woman Creek National Estuary, Huron, OH. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at <a href="http://registrar.osu.edu">http://registrar.osu.edu</a>.</td>
</tr>
<tr>
<td>801</td>
<td>Principles of Systematics</td>
<td>UGRD 3</td>
<td>A study of the principles and techniques used in the identification, classification, and nomenclature of organisms. * Sp Qtr. 2 2-hr cl. Prereq: 15 or hrs in EECOB or Entomol at the 600-level or above.</td>
</tr>
<tr>
<td>880</td>
<td>Seminar</td>
<td>GRADE 1-2</td>
<td>Seminar on Systematics. Required of all grad majors in evolution, ecology, and organismal biology during the first Au Qtr of registration. Au, Wi Qtrs. 1 cl. Repeatable to a maximum of 10 or hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>881.01</td>
<td>Seminar on Anatomy and Physiology</td>
<td>GRADE 1-3</td>
<td>Seminar on Anatomy and Physiology. Repeatable to a maximum of 20 or hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>881.02</td>
<td>Seminar on Behavior</td>
<td>GRADE 1-3</td>
<td>Seminar on Behavior. Repeatable to a maximum of 20 or hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>881.03</td>
<td>Seminar on Cell Biology</td>
<td>GRADE 1-3</td>
<td>Seminar on Cell Biology. Repeatable to a maximum of 20 or hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>881.04</td>
<td>Seminar on Ecology</td>
<td>GRADE 1-3</td>
<td>Seminar on Ecology. Repeatable to a maximum of 20 or hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>881.05</td>
<td>Seminar on Evolution</td>
<td>GRADE 1-3</td>
<td>Seminar on Evolution. Repeatable to a maximum of 20 or hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>881.06</td>
<td>Seminar on Marine Biology</td>
<td>GRADE 1-3</td>
<td>Seminar on Marine Biology. Repeatable to a maximum of 20 or hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>881.07</td>
<td>Seminar on Wildlife Biology</td>
<td>GRADE 1-3</td>
<td>Seminar on Wildlife Biology. Repeatable to a maximum of 20 or hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>881.08</td>
<td>Seminar on Fisheries Biology</td>
<td>GRADE 1-3</td>
<td>Seminar on Fisheries Biology. Repeatable to a maximum of 20 or hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>999</td>
<td>Research in Evolution, Ecology, and Organismal Biology</td>
<td>GRADE 1-18</td>
<td>Research for thesis and dissertation purposes only. Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.</td>
</tr>
<tr>
<td>100.01</td>
<td>Exploration University Survey</td>
<td>UGRD 1</td>
<td>Introduction to the process of decision making and exploring majors at Ohio State; introduction to the university community; strategies for successful transition to and participation in that community; university resources and procedures. Prereq: First quarter student in EXP and permission of instructor. Not open to students with credit for a university survey course from another college.</td>
</tr>
<tr>
<td>100.02</td>
<td>Exploration University Survey</td>
<td>UGRD 1</td>
<td>Introduction to the process of decision making and exploring majors at Ohio State; introduction to the 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.</td>
</tr>
<tr>
<td>289</td>
<td>Introductory Professional Development in Family and Consumer Sciences Education</td>
<td>UGRD 2</td>
<td>Directed observation-participation in family and consumer science middle and secondary education program. Wi Qtr. Arr field experience, 1 hr cl. Prereq: 2nd yr standing; C+ in Math 105 or higher and English 110 or 110.01 or 110.02 or 110.03.</td>
</tr>
<tr>
<td>294</td>
<td>Group Studies</td>
<td>UGRD 2-5</td>
<td>Selected topics in family and consumer sciences education. Prereq: Open to students who meet program's stated prereqs. Repeatable to a maximum of 10 or hrs.</td>
</tr>
<tr>
<td>593</td>
<td>Individual Studies</td>
<td>UGRD 1-5</td>
<td>Problems in various phases of family and consumer sciences education. 593H (honors) may be available. Su, Au, Wi, Sp Qtrs. 1 or more conf. Prereq: Completion of individual study plan form. Repeatable to a maximum of 10 or hrs.</td>
</tr>
<tr>
<td>640</td>
<td>Workplace Education through Family and Consumer Sciences Education</td>
<td>UGRD 3</td>
<td>Principles and procedures for integrating and administering workplace education in family and consumer sciences education, including developing family, school, and community partnerships. Au Qtr. 1 2-hr cl, arr 15 hrs field experience. Prereq: 2.75 CPHR; concur: 746.01.</td>
</tr>
<tr>
<td>689.01</td>
<td>Professional Development: Accommodating Diversity</td>
<td>UGRD 2</td>
<td>Directed observation and teaching experiences in family and consumer sciences programs to develop critically reflective and creative teachers through journaling, action research, and portfolio development. Urban field experience and development of knowledge and skills for teaching and accommodating needs of diverse learners. Au Qtr. 1 2-hr cl, arr field experience. Prereq: 4th yr or grad standing; admission to a teacher education program. Prereq: 2.75 CPHR; 289, 742; concur: 746.01. Not open to students with credit for 589 series.</td>
</tr>
</tbody>
</table>
206 Family and Consumer Sciences Education

689.03 Professional Development: Context for Teaching and Learning UGRD 2
Directed observation and teaching experiences in family and consumer sciences programs to develop critically reflective and creative teachers through journaling, action research, and portfolio development. Examination of the student and social context for teaching and learning through action research and portfolio development.
Wi Qtr. 1 cr, arr field experience. Prereq: 4 yr or grad standing; admission to a teacher education program. Prereq: 2.75 CPHR; rank 4; concurs: 746.03. Not open to students with credit for 589 series.

694 Group Studies UGRD 2-5
Selected topics in family and consumer sciences education.
Prereq: Open to students who meet program's stated prerequisites. Repeatable to a maximum of 10 cr hrs.

741 Curriculum in Family and Consumer Sciences GRAD 3
Critical analysis and development of curriculum in family and consumer sciences in terms of philosophy, design, and adaptability.
1 2.5-hr cl. Prereq: Grad standing or permission of instructor.

742 Culturally Responsive Teaching UGRD 3
Principles and strategies for working with culturally diverse student populations, emphasizing teaching strategies and program modification.
Su Qtr. 1 2.5-hr cl.

743 Research Methods in Family and Consumer Sciences GRAD 3
Nature of research in various areas of the field; criteria for setting up a research problem; techniques for collecting and analyzing data.
1 2.5-hr cl. Prereq: Grad standing or permission of instructor.

744 Evaluation in Family and Consumer Sciences GRAD 3
Principles of evaluation, framework for evaluation, procedures for appraising student progress in the attainment of objectives, construction of evaluation instruments, analysis and interpretation of evaluation data.
1 2.5-hr cl. Prereq: Grad standing or permission of instructor.

745 Supervision in Family and Consumer Sciences Education GRAD 3
Principles, models, and processes of supervision in the context of student teaching and other settings where instruction in family and consumer sciences takes place.
1 2.5-hr cl. Prereq: Grad standing or permission of instructor.

746.01 Instruction for Effective Learning in Family and Consumer Sciences Education UGRD 5
Learning and developmental theory and its application to planning and instruction in family and consumer sciences education.
Au Qtr. 2 2-hr cl, 1 3-hr lab. Prereq: 289; 742; Edu P&L 309; 2.75 CPHR; rank 4; concurs: 689.01.

746.03 Instruction for Problem-Based Learning UGRD 5
Cognitive learning and critical social theories and related curricular and instructional theories and their implementation.
Wi Qtr. 2 2-hr cl, 1 3-hr lab. Prereq: 2.75 CPHR. 746.01; rank 4; concurs: 689.03.

791.01 Teaching Internship: Designing Instruction UGRD 4
Ten week full-time internship in a family and consumer sciences education program under guidance of a cooperating teacher and university supervisor; includes reflective seminar.
Prereq: Completion of all licensure courses, written permission of advisor, gpa 2.75. Concur: 791.02 and 791.03.

791.02 Teaching Internship: Facilitating Learning UGRD 4
Ten week full-time internship in a family and consumer sciences education program under guidance of a cooperating teacher and university supervisor; includes reflective seminar.
Prereq: Completion of all licensure courses, written permission of advisor, gpa 2.75. Concur: 791.01 and 791.03.

791.03 Teaching Internship: Professional Development and Action Research UGRD 4
Ten week full-time internship in a family and consumer sciences education program under guidance of a cooperating teacher and university supervisor; includes reflective seminar.
Prereq: Completion of all licensure courses, written permission of advisor, gpa 2.75. Concur: 791.01 and 791.02.

1 Individual Studies UGRD 1-5
Problems in various phases of family and consumer sciences education.
Su, Au, Wi, Sp Qtrs. 1 or more cr. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 hrs. This course is graded S/U.

846 Family and Consumer Sciences Teaching Strategies and Learning Theory GRAD 3
Innovative use of teaching methods; relationship to learning theory.
1 2.5-hr cl. Prereq: A course in educational psychology.

Family Medicine

270 Introduction to Film Studies UGRD 5
An introduction to the field of Film Studies based on a survey of the major theories of film analysis.
Su, Au, Wi, Sp Qtrs. Prereq: English 263 or HistArt 260, GEC arts and hums VPA course.

293 Individual Studies in Film UGRD 2-5
Individual investigation of minor problems in Film Studies not covered in regular coursework.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of Film Studies Director. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

294 Group Studies in Film UGRD 2-5
Investigation of minor problems in Film Studies not covered in regular coursework.
Su, Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 10 hrs.

367.01 The American Film Auteur UGRD 5
An intermediate course centering around the work of one important US filmmaker that extends and refines expository writing and analytic reading / viewing skills.
Prereq: Credit for English 110 through regular course enrollment and soph; standing; or EM credit for English 110; or a declared major in Film Studies. Repeatable to a maximum of 10 cr hrs. GEC second writing course.

367.02 The American Film Genre UGRD 5
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: Credit for English 110 through regular course enrollment and soph; standing; or EM credit for English 110; or a declared major in Film Studies. Repeatable to a maximum of 10 cr hrs. GEC second writing course.

489 Film Studies Internship/Field Practicum UGRD 1-2
An opportunity for work experience and on-the-job learning in film studies or film production related employment.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor and completion of internship learning agreement. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

580 Studies in a Major Director UGRD 5
A course in the films, style, themes, and career of a single director.
Prereq: 270 or 387; Junior standing; or permission of instructor. Repeatable to a maximum of 11 cr hrs.

670H Cinema and the Historical Avant Garde UGRD 5
Historicizes cinema's political and artistic roots, concentrating on the perceived and real possibilities of the medium. Fosters critical awareness of “film culture” historically and currently.
Prereq: English 110, 110.01, 110.02 or 110.03; and honors standing. Not open to students with credit for German 670H. Cross-listed in German. Taught in English.

680 Screenwriting and the Business of Cinema UGRD 5
This course examines screenwriting as both a literary art form and a challenging profession.
Prereq: Theatre 636 or permission of instructor.

690 Advanced Screenwriting UGRD 5
An intensive writing course in which each student completes a feature-length screenplay based on work previously completed in FilmStd 680.
Su, Au, Wi, Sp Qtrs. Prereq: FilmStd 680 and permission of Director.

693 Individual Studies UGRD 2-5
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 10 cr hrs. This course is graded S/U.

694 Group Studies UGRD 2-5
Group studies for work in various fields of film studies not normally offered in courses. Repeatable to a maximum of 10 cr hrs.

695 Advanced Seminar: Topics in Film Studies UGRD 5
Selected problems (themes, movements, theories, genres, styles, etc.) in film studies; topics vary quarterly.
Au, Wi, Sp Qtrs. Prereq: Film studies major with 4th year standing, or permission of instructor. Repeatable to a maximum of 25 cr hrs.

699 Undergraduate Research UGRD 1-15
Undergraduate research or creative activities in variable topics.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.
Food Science and Technology

101 Chocolate Science  UGRD  2
Introduction to science and business of chocolate. Students develop and market a chocolate product as part of a virtual company. Students taste commercial products weekly.
Au, Wi, Sp Qtrrs. 1 2-hr cl.

102 Culinary Aspects of Food Science  UGRD  2
Function of food constituents. Processing conditions that affect flavor and texture. Flavor profiles of regional cuisine.
Sp Qtr.

170 Wine and Beer in Western Culture  UGRD  3
The role of wine and beer in western culture with emphasis on the geographic origins, production techniques, and stylistic considerations.
Au, Sp Qtrrs. 2 5-hr cl.

201 The Science of Food  UGRD  5
Food and nutrition in modern civilization; principles involved in assembling, processing, and distribution of food; and the role of science, industry, and government in meeting food needs.
Su, Au, Wi, Sp Qtrrs. 5 cl. Prereq: Biology 101 or 113 or 115H or equiv. BER/LAR course. GEC bio sci course. E201 may be offered for honors embedded experience.

208H Food: Fact and Fiction  UGRD  5
Introduction to controversial topics in food science and nutrition that are found in popular media.
Wi Qtr. 3 1.5-hr cl. Prereq: Honors or Scholars program members or permission of instructor.

289 Food Industries Field Experience  UGRD  3
Ten weeks practical experience or equivalent in an approved food plant or laboratory; written report required.
Su, Au, Wi, Sp Qtrrs. Open only to students majoring in food science.

294 Group Studies  UGRD  1-5
Group studies on selected topics in food science and technology.
Su, Au, Wi, Sp Qtrrs. Quarter offered varies. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

401 Introduction to Food Processing  UGRD  3
Unit operations in food processing, basic elements of food processing equipment, product formulation, food manufacturing, quality control, cleaning, and sanitizing.
Au, Wi, Sp Qtrrs. 1 cl, 2-3-hr labs.

410 HACCP Analysis  UGRD  3
Principles of hazard analysis as applied to the food industry. Students will develop a HACCP plan.
Wi Qtr. 3 cl. Prereq: 401.

411 Brewing Science  UGRD  3
Science and practices of beer production including hop and barley cultivation, the science of malting and fermentation, flavor development and beer processing.
Wi Qtr. Prereq: Biol 101 or 113; Chem 102 or 122.

493 Individual Studies  UGRD  1-5
Individual study course to permit undergraduate students to explore in-depth selected areas of food science and nutrition.
Su, Au, Wi, Sp Qtrrs. 3, 6, 9, 12, or 15-hr lab. Prereq: 2.50 CPHR and written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

494 Group Studies  UGRD  3-5
Group studies on selected topics in food science and nutrition. 494H (honors) may be available.
Su, Au, Wi, Sp Qtrrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

536 Food Safety and Public Health  UGRD  3
Basic principles and practice of food safety. Transmission and control of foodborne illness.
Wi Qtr. Prereq: Microbiol 509 or written permission from instructor.

589 Professional Experience  UGRD  5
Ten weeks of supervised structured in-depth industrial experience in selected food related subjects.
Su, Au, Wi, Sp Qtrrs. Prereq: 20 cr hrs of 500-level courses or above in major field, and permission of instructor. Open only to students majoring in food science and nutrition. Repeatable to a maximum of 10 cr hrs. Experience must be obtained with organization approved by the dept.

597.01 Contemporary Issues: Alcohol and Society  UGRD  5
The historical, nutritional, medical, social, technical, and economic aspects of the use of beverage and industrial alcohol.
Wi, Sp Qtrrs. 2 2-hr cl. Prereq: Sr standing. GEC contemporary world course.

597.02 Contemporary Issues: Food and Health  UGRD  5
Controversies in the 21st Century
Examines current controversies surrounding food. Topics include biotech foods, dietary supplements, childhood obesity and public policies domestically and abroad that fuel the controversies.
Su, Au, Sp Qtrrs. Prereq: Sr standing. Prereq: 3rd or 4th yr standing only. GEC contemporary world course.

601 Food Analysis  UGRD  5
Basic composition, chemical structures and properties of foods; and chemical and instrumental analyses of food components.
Au Qtr. 4 cl, 3-hr lab. Prereq: Chem 252.

605 Advanced Food Chemistry  UGRD  4
Intensive coverage of the chemical reactions of food components with emphasis on the reaction mechanisms responsible for changes in food products.
Wi Qtr. 3 cl, 1-2-hr lab. Prereq or concur: Biochem 511 or permission of instructor.

610 Processing of Fluid Milk and Related Products  UGRD  4
Principles involved in the production, processing, and marketing of high quality, safe, and nutritious milk and milk products.
Wi Qtr. 3 cl, 1-3-hr lab. Prereq: Chem 101 or 121 or 201H and Rank 3 or 4 or permission of instructor.

611 Food Fermentation  UGRD  4
Principles and practices related to the manufacture, processing, distribution, and marketing, nutritional value and safety of fermented foods.
Sp Qtr. 3 cl, 1-3-hr lab. Prereq: Microbiol 509 or permission of instructor.

613 Fruit and Vegetable Processing  UGRD  4
Commercial processing of fruits, vegetables and related products. The effect of processing and raw product chemistry on final product quality.
Au Qtr. 3 cl, 1-3-hr lab. Prereq: 401.

621 Food Additives  UGRD  3
Chemical and physical nature of food additives; functions and effects on chemical, rheological, microbiological, and nutritional properties of foods.
Au Qtr. 3 cl. Prereq: 15 cr hrs in food science or related area.

630 Principles of Food Processing  UGRD  4
Principles of science and engineering applied in food processing and their unit operations including concentration, separation, and thermal sterilization processes.
Wi Qtr. 3 cl, 2-hr lab. Prereq: FABENG 481 or grad standing or permission of instructor.

632 Sensory Evaluation  UGRD  4
Fundamentals of sensory evaluation and the perception of taste, smell, and flavor. Emphasis or statistical interpretation and industrial application.
Sp Qtr. 3 cl, 1-2-hr lab. Prereq: Stat 135 or 145 or 245 or AEDEcon 205 or HCS 260 or AnimSc 260 or AgrEduc 367 or AEE 387 or NutRes 222 or Psych 320 and familiarity with Excel. Not open to students with credit for Psych 632. Cross-listed in Psychology.

636.01 Food Microbiology Lecture  UGRD  3
Microorganisms in relation to the production, processing and handling of food with emphasis on food transmitted pathogens and minimizing public health risks.
Au, Sp Qtrrs. 3 cl. Prereq: Microbiol 509 or 521. Not open to students with credit for 636 or Microbiol 636. Cross-listed in Microbiology.

636.02 Food Microbiology Laboratory  UGRD  3
Laboratory training for determining the microbiological safety and quality of food with emphasis on handling pathogens and observing analyst's safety.
Au, Sp Qtrrs. 2-3 hr labs, 1 cl. Prereq: 636.01 or concur. Not open to students with credit for 636 or Microbiol 636. Cross-listed in Microbiology.

640 Food Regulations  UGRD  3
Food laws, regulations and the technical control of processed foods.
Wi Qtr. 3 cl. Prereq: 401 or 610 or 611 or grad standing or permission of instructor.

648 Essentials of Food Plant Operation  UGRD  3
An in-depth presentation of the special factors affecting food plant organization, production, procurement, distribution, and the interaction required to develop plant operations.
Wi Qtr. 3 cl. Prereq: 401.

649 Food Packaging  UGRD  4
A discussion of terminology and literature of commercial packaging, principal methods of packaging, and principles of selecting packaging materials.
Sp Qtr. 3 cl, 1-3 hr lab. Prereq: 401 or grad standing or permission of instructor.

650 Food Product Development  UGRD  4
Development of a new food product including generation of concepts, consumer panel testing, development of prototypes, process optimization and consumer testing.
Sp Qtr. 2 cl, 2-3 hr labs. Prereq: 401 and 621 or permission of instructor.

683H Honors Projects  UGRD  1-10
Conducting and reporting the honors project.
Su, Au, Wi, Sp Qtrrs. Prereq: Enrollment in honors program, and permission of honors project supervisor. Repeatable to maximum as 683H or in combination with 293, 593, 593H, 599H, 693 or 693H. Repeatable to a maximum of 10 or hrs. This course is graded S/U.
### 208 Food Science and Technology

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>693</td>
<td>Individual Studies</td>
<td>UGRD 3-5</td>
</tr>
<tr>
<td>694</td>
<td>Group Studies</td>
<td>UGRD 1-5</td>
</tr>
<tr>
<td>696</td>
<td>Technical Problem Solving</td>
<td>UGRD 5</td>
</tr>
<tr>
<td>697.01</td>
<td>Study at a Foreign Institution: Irish Food and Culture</td>
<td>UGRD 3</td>
</tr>
<tr>
<td>724</td>
<td>Food Colors and Pigments</td>
<td>GRAD 3</td>
</tr>
<tr>
<td>730</td>
<td>Global Health and Environmental Microbiology</td>
<td>GRAD 4</td>
</tr>
<tr>
<td>736</td>
<td>Advanced Food Microbiology</td>
<td>GRAD 3</td>
</tr>
<tr>
<td>761</td>
<td>Carbohydrate and Lipid Metabolism</td>
<td>UGRD 5</td>
</tr>
<tr>
<td>762</td>
<td>Principles of Nutrient Metabolism</td>
<td>UGRD 5</td>
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<tr>
<td>763</td>
<td>Vitamin and Mineral Metabolism</td>
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### Food, Agricultural, and Biological Engineering

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<th>Course Code</th>
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<tr>
<td>708.01</td>
<td>Combined lecture/laboratory in the techniques of nucleic acid isolation, analysis, hybridization, sequencing, cloning, expression, and associated biotechnologies</td>
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* Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.
225 Introduction to Food, Agricultural and Biological Engineering
Principles of engineering problem solving and communications, statistical description and inference applied to agricultural, food and environmental problems.
Au Qtr. 2 cl, 1.2 hr lab. Prereq: Soph standing in Eng. Third writing course component. GEC course.

325 Transfer Processes in Food, Agricultural and Biological Systems
Material and energy balances in food, agricultural and biological systems. Introduction to heat, mass, momentum transfer. Psychrometrics and applications in conditioning of air.
Wi Qtr. 3 cl, 1.2 hr lab. Prereq: Enrollment as engineering major; prereq or contour: Math 153 or 162. Permission of instructor.

373 Principles of Soil and Water Engineering
Applications of level and chain surveying, hydrology, and soil dynamics to problems in food, agricultural and biological engineering.
Sp Qtr. 2 cl, 1.4 hr lab. Prereq: MechEng 410. Some survey/data gathering labs for specific course projects will be conducted away from campus though completed within lab-period.

425 Analysis of Elementary Biological-Physical Systems
Mathematical model formulation and analysis techniques developed and applied to elementary biological and physical systems.
Wi Qtr. 3 cl, 2-hr lab. Prereq: Math 255 or 415.

481 Introduction to Food Process Engineering
Introduction to engineering operations in food processing, process control and instrumentation, emphasizing heat transfer and fluid flow.
Sp Qtr. 3 cl, 1.2 hr lab. Prereq: Math 148 and Physics 106 or 111. Open to non-engineering majors only. Offered in cooperation with Food Science and Technology.

489 Professional Practice
Preparation and submission of a comprehensive report based on a pre-assigned outline of actual co-op employment in industry.
Su, Au, Wi, Sp Qtrs. Prereq. Admission to Co-op Program in Food, Agricultural and Biological Engineering. Open only to dept majors. Repeatable to a maximum of 10 cr hrs.

525 Electrical Power Systems for Agriculture
Design and specification of systems and components essential for the distribution of electrical power and for the control of electrical systems for agricultural production units.
Sp Qtr. 3 cl, 1.3 hr lab. Prereq: 425.

545 Agricultural Structures
Analysis and design of frames and members for agricultural structures.
Au Qtr. 3 cl, 1.2 hr lab. Prereq: MechEng 410.

565 Utilization of Energy in Agriculture
Study of motive and stationary power needs of agriculture, mechanics of traction, characteristics of power sources, morphology of off-the-road vehicle design.
Sp Qtr. 3 cl, 1.2 hr lab. Prereq: 425 and MechEng 501.

584 Food Process Engineering
Principles of food process engineering with emphasis on design of freezing and drying equipment and thermal sterilization processes.
Wi Qtr. 3 cl, 1.2 hr lab. Prereq: MechEng 501 or ChBe 509.

593 Individual Studies
Advanced study of problems not included in regular courses of this department.
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

605 Measurement and Instrumentation
Analysis and design of measurement systems; data acquisition, signal conditioning, error and noise control and transducers used in food, agricultural and biological systems.
Au Qtr. 3 cl, 1.3 hr lab. Prereq: 525 or ElecEng 300 or grad standing in engineering.

618 Ecological Engineering and Science
Definition, classification, and practice of Ecological Engineering. Course describes ecological systems and the design of natural systems to provide societal services and benefits to nature.
Wi Qtr. 3 hr cl. Prereq: 481, 525 or permission of instructor. Course is Progress (P) graded. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

625 Modeling and Design of Biological Systems
Application of transport processes, enzyme kinetics and the simulation of plant and animal growth to the analysis and design of biological systems and processes.
Au Qtr. 3 cl, 1.2 hr lab. Prereq: 425, CivilEng 413 or ChBe 420 or equiv or grad standing.

645 Environmental Controls for Agricultural Structures
Functional requirements and principles involved in housing animals and crops; analysis of factors and properties affecting energy exchanges with the environment.
Sp Qtr. 3 cl. Prereq: 325; CivilEng 413 or ChBe 420 or ChemEng 420 or grad standing.

650 Design of Waste Management Systems
Application of bioengineering principles of pollution control in the design of management systems for wastes from food and fiber production, storage, and processing operations.
Sp Qtr. 3 cl, 1.2 hr lab (includes 2 field trips). Prereq: Sr standing in ENG, or permission of instructor; CivilEng 413 or ChemEng 420 or ChBe 420 and FABEng 373.

652 Ecosystems for Waste Treatment
Through a design project and case studies, students will integrate ecological and engineering principles to design ecosystem-based systems to purify water and air.
Sp Qtr. 2.5 hr cl, 1.3 hr lab. Prereq: EEB 413, or NatRes 725, or FABEng 625, or CivilEng 501, or permission of instructor. Sr in Eng or grad standing in Eng or science required. Field trips to Oberlin College Living Machine and wetland treatment systems in central Ohio.

673 Design of Agricultural Water Management Systems
Basic knowledge of water management principles and introduction to agricultural drainage and irrigation methods and their applications.
Sp Qtr. 2 hr cl. Prereq: 373 and CivilEng 413 or equiv or grad standing in ENG or permission of instructor.

684 Food Extrusion Processing
Principles of food extrusions processing including extruder design, transport phenomena, chemical/physical changes during extrusion, product quality, automation. Economics discussed in relation to food industry.
* Su, Sp Qtr. 1.5 hr cl, 1.35 hr lab. Prereq: Senior standing for undergraduates, grad standing or permission of instructor. Lab time includes travel time for plant visits.

693 Individual Studies
Work on problems not included in regular courses; practice in development, organization, solution, and report on problems of student's choosing.
Su, Au, Wi, Sp Qtrs. Prereq: 15 cr hrs of 300 level or higher in FABEng courses. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

694 Group Studies
Advanced studies in Food, Agricultural and Biological Engineering with principal emphasis on design.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

695 Professional Development
Needs and programs for professional development in engineering related to food, agriculture, and environment; communication for professional advancement, engineering ethics, and responsibilities to society.
Au Qtr. 1.1 hr cl. Prereq: 3rd yr standing in Food, Agricultural and Biological Engineering. GEC course.

697 Study at a Foreign Institution
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Au Qtr. 1.1 hr cl. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 or hrs. This course is Progress (P) graded. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

723 Capstone Design I
Methodology of engineering design in a team environment; practice in the design and communication of a specific system within the student's area of specialization.
Au Qtr. 2.1 hr cl. Prereq: 525, MechEng 430, and CivilEng 413 or ChemEng 420 or ChBe 420, or grad standing in engineering. GEC requirement for (technical writing). FABEng 723, 724 and 725 must be taken in sequence in same academic year.

724 Capstone Design II
Continuation of 723.
Wi Qtr. 2.1 hr cl. Prereq: 723. GEC third writing course. FABEng 723, 724, and 725 must be taken in sequence in the same academic year.

725 Capstone Design III
Complete design project, produce final design report, oral presentation, short introductory video build and test prototype.
Sp Qtr. 2.1 hr cl. Prereq: 724. GEC third writing course. FABEng 723, 724, and 725 must be taken in sequence in the same academic year.

732 Agroecosystems
Holistic analysis of agricultural systems. Application of emergy analysis to evaluate and design sustainable agroecosystems.
* Wi Qtr. 2.2 hr cl. Prereq: Grad standing or permission of Instructor. Offered in winter quarters of odd-numbered years.

735 Probabilistic Methods in Engineering Design
Application of concepts of probability, random variables, statistical inference, multiple regression and correlation analysis to making reliable engineering design decisions.
Sp Qtr. 3 cl, 1.2 hr lab. Prereq: Stat 427 or permission of instructor.

773 Engineering Soil-Water Management
Engineering design of systems with high potential for negative environmental impacts; livestock waste, rural landfills, and strip mine reclamation; related water storage and conveyance structures.
Au Qtr. 3 cl, 1.3 hr lab. Prereq: 373 and CivilEng 413 or equiv.
210 Food, Agricultural, and Biological Engineering

783H Undergraduate Honors Program Research UGRD 1-3
Individually supervised research and project work for Honors program students. Student presentations and thesis writing included. Su, Au, Wi, Sp. Qtrs. Arr. Prereq: Honors standing; permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

784 Advanced Food Process Engineering UGRD 3
Application of heat and mass transfer, fluid flow, food properties, and food processing constraints in the design and selection of food process equipment. Sp Qtrs. 3 cr. Prereq: ChemEng 521 ChBE 521 or MechEng 510 or equiv. Offered in cooperation with Food Science and Technology.

801 Research Methods in Food, Agricultural and Biological Engineering UGRD 3
Research problem selection, mathematical models, errors, development, proposal and peer review. Wi Qtr. 1-3 hr cl.

810 College Teaching in Engineering GRAD 3
Preparation for instruction in engineering at the college level. Focuses on strategies, issues common to university teaching and engineering instruction more specifically. Sp Qtrs. 1-3 cr. This course is graded S/U.

850 Department/Graduate Seminar GRAD 1
Lecture and discussion of current topics related to food, agricultural and biological engineering presented by faculty, staff, graduate students, and guest speakers. Au, Wi, Sp Qtr. 1 cl. Repeatable. This course is graded S/U.

894 Group Studies UGRD 1-5
Graduate studies in Food, Agricultural and Biological Engineering. Su, Au, Wi, Sp. Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

999 Research GRAD 1-18
Research for thesis and dissertation purposes only. Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

Food, Agricultural, and Environmental Sciences

100 Food, Agricultural, and Environmental Sciences UGRD 1
Survey
Academic requirements; University procedures, grading system, resources; student rights and responsibilities; overview of academic areas of study. 100H (honors) may be available. Au, Wi, Sp Qtrs. 2 cr. Not open to students with credit for 101, ArtsCol 100, ArtsSci 100, Engineer 100, HomeEcc 100, NatRes 100, or UVCSurv 100 or 100H.

204 Group Studies UGRD 1-5
Group study classes or projects in selected interdisciplinary topics in Agriculture. Su, Au, Wi, Sp Qtrs. Arr.

351 Planning a Career in Food, Agricultural and Environmental Sciences UGRD 1
Discussion of personal career objectives in agriculture and conducting an effective employment campaign through resumes, cover letters, interviewing, and Job offer evaluation. Au, Wi Qtrs. 1 cl.

590.01H Honors Research Colloquium UGRD 1
Preparation of honors programs, design of honors research projects, and writing of research proposals. Au Qtr. 1 cl. Prereq: Enrollment in Agr honors program and jr standing or permission of instructor.

683 Research with Distinction UGRD 1-6
Conducting and reporting research with distinction. Prereq: Permission of project supervisor. Minimum 3.00 GPA overall and minimum 3.00 GPA in the major. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

694 Group Studies UGRD 1-5
Study in interdisciplinary topics in agriculture. Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 10 cr hrs.

697 Study at a Foreign Institution UGRD 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 25 cr hrs. This course is Progress (P) graded. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

797 Interdepartmental Seminar UGRD 1-2
Two or more departments or colleges may collaborate in presenting seminars in subjects of mutual interest; topics to be announced. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable. Repeatable by permission. This course is graded S/U.

101.01 Elementary French I UGRD 5
Introduction to French; development of listening, reading, speaking, and writing skills. Not open to students with credit for 100.02 or 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 dept. GEC for lang course. FL Adms Cond courses. Students must register for and complete 5 cr hrs during the qt. This course is available for EM credit.

101.51 Elementary French I: Individualized Track UGRD 1-5
Introduction to French; development of listening, reading, speaking, and writing skills. Not open to students with credit for 100.02 or 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 dept. GEC for lang course. FL Adms Cond courses. Students register for and complete from 1 to 5 cr hrs during the qt. Students who complete 5 hours before the end of the qt may proceed to 102.51. Progress is sequential from one or to the next, with proficiency at the level of 80% required for advancement.

102.01 Elementary French II UGRD 5
Continuation of 101, further development of listening, reading, speaking, and writing skills. Prereq: 101.01 or 5 cr hrs of 101.51. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. FL Adms Cond courses. Students must register for and complete 5 cr hrs during the qt. This course is available for EM credit.

102.51 Elementary French II: Individualized Track UGRD 1-5
Continuation of 101, further development of listening, reading, speaking, and writing skills. Prereq: Grade of B- or above in 101.01 or 5 cr hrs in 101.51, or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. FL Adms Cond courses. Students may register for and complete 5 cr hrs during the qt. Students may register for and complete 102.51 for 1-5 cr hrs. Progress is sequential, for each hour, with a proficiency of 80% required to move to the next credit hour.

102.66 Elementary French II: Intensive French for Review I UGRD 1-5
Continuation of 101, further development of listening, reading, speaking, and writing skills. Classroom track; review of basic structures, vocabulary, and skills needed for entry into 103. Prereq: 2 or more years of high school French and placement in 101 by placement exam. Not open to native speakers of this language through regular course enrollment or EM credit or students with credit for 101.01, 101.51, 102.01, or 102.51. GEC for lang course. FL Adms Cond courses. Students must register for and complete 5 cr hrs during the qt. Students may register for and complete 102.66 for 1-5 cr hrs. Progress is sequential from one or to the next, with proficiency at the level of 80% required for advancement.

103.01 Intermediate French I UGRD 5
Continued study of French; development of listening, reading, speaking, and writing skills; readings based on contemporary French culture and literature. Prereq: 102.01, or 102.66, or 5 or 5 cr hrs of 102.51. Not open to native speakers of this language through regular course enrollment or EM credit or students with credit for 101.01, 101.51, 102.01, or 102.51. GEC for lang course. FL Adms Cond courses. Students must register for and complete 5 cr hrs during the qt. Students may register for and complete 103.01, 103.66 for 1-5 cr hrs. Progress is sequential from one or to the next, with proficiency at the level of 80% required for advancement.

103.51 Intermediate French I: Individualized Track UGRD 1-5
Continued study of French; development of listening, reading, speaking, and writing skills; readings based on contemporary French culture and literature. Prereq: Grade of B- or above in 102.01, or 102.66, or 5 or 5 cr hrs of 102.51 or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. FL Adms Cond courses. Students may register for and complete 5 cr hrs during the qt. Students may register for and complete 103.51 for 1-5 cr hrs. Progress is sequential, for each hour, with a proficiency of 80% required to move to the next credit hour.

Continued study of French; development of listening, reading, speaking, and writing skills; readings based on contemporary French culture and literature. Classroom track; intensive review of basic structures, vocabulary, and skills needed for entry into 104. Prereq: 102.51 or 5 cr hrs of 103.51, or 3 or more yrs of high school French and placement into 102 by placement exam. Not open to native speakers of this language through regular course enrollment or EM credit. Not open to native speakers of French through regular course enrollment or EM credit or to students with credit for 102.01, 102.51, 102.66, 103.01, or 103.51. GEC for lang course. Students must register for and complete 5 or 5 cr hrs during the qt. Students may register for and complete 103.66 for 1-5 cr hrs. Progress is sequential, for each hour, with a proficiency of 80% required to move to the next credit hour.

104.01 Intermediate French II: Conversation and Composition UGRD 5
Continued development of listening, speaking, reading, and writing with an emphasis on oral and written skills; focus on functional topics and thematic vocabulary. 104.01H (honors) may be available.

Su, Au, Wi, Sp Qtrs. Prereq: 103.01 or 103.66 or 5 or 5 hrs of 103.51 or 112. Not open to student with credit for 104; or to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. Highly recommended for majors and minors. Course conducted in French. This course is available for EM credit.
104.02 Intermediate French II: Conversation UGRD 5
Emphasis on speaking and aural comprehension with special attention to practical situations. Prereq: 103.01 or 103.66 or 5 cr hrs of 103.51 or 112. Not open to students with credit for 104; or to native speakers of this language through regular course enrollment or EM credit. Only one of the decimal subdivisions may be taken for credit. GEC for lang course.

104.03 Intermediate French II: Contemporary French UGRD 5
Society
Emphasis on various aspects of contemporary French cultures; readings and discussion in French.

104.04 Intermediate French II: Civilization UGRD 5
Aspects of French civilization: geography, history, social developments, and the arts; readings and discussion in French.

104.51 Intermediate French II: Conversation and Composition
Continued development of listening, speaking, reading, and writing with an emphasis on oral and written skills; focus on functional topics and thematic vocabulary.

112 Intensive French
Elementary and intermediate French; intensive drill in form, syntax, vocabulary, and idiom; reading of short stories, novels, and plays.

150 French Literary and Cultural Works in Translation: From Renaissance to Enlightenment and Revolution
Important issues in 16th to 18th-century French literature and culture; focus on Humanist, Classical, and Enlightenment writings of such authors as Montaigne, Moliere, Voltaire, Rousseau. Taught in English. GEC arts and hums lit and social diversity - international issues (Western) course.

151 French Literary and Cultural Works in Translation: from Romantic Passion to Existential Doubt
Traces the growth of modernism and postmodernism out of romantic, realist, and symbolist currents of the nineteenth century in narratives, plays, poetry, films, art and music. Taught in English. GEC arts and hums lit and social diversity - international issues (Western) course.

152 Introduction to Francophone African and Caribbean Literatures in Translation
Introduces students to the literatures and cultures of important non-Western regions of the Francophone world and develops their analytical reading and writing skills. Taught in English. GEC arts and hums lit and social diversity - international issues (Global) course.

153 Issues in French or Francophone Culture UGRD 5
Exploration of a particular issue of a specific French or Francophone culture. 2 2-hr cl. Taught in English; GEC arts and hums cultures and ideas course.

201.01 Introduction to French Studies UGRD 5
Techniques for reading and interpreting different French texts: stories, poetry, plays, films, music, and ads while building vocabulary, comprehension, speaking and writing skills. 201.01H (honors) may be available. 2 2-hr cl. Prereq: 104.01, 104.02, 104.03, 104.04 or 5 cr hrs of 104.51; or permission of department or instructor. Conducted in French.

201.51 Introduction to French Studies: Individualized UGRD 1-5 Track
Techniques for reading and interpreting different French texts: stories, poetry, plays, films, music, and ads while building vocabulary, comprehension, speaking and writing skills. Su, Au, Wi, Sp Qtrs. Prereq: 104 or 5 cr hrs of 104.51 or permission of instructor. Course conducted in French. Students register for and complete from 1 to 5 cr hrs during the qtr. Proficiency at the level of 80% is required for advancement from 1 cr hr to the next. Repeatable to a maximum of 5 cr hrs.

206 Introduction to French Media and Visual Culture UGRD 5
Introduction to French media and visual culture based on texts from the electronic press, intero design and fashion magazines, multimedia documents, television, radio, and film. Prereq: 104 or 5 cr hrs of 104.51 or permission of instructor. Not open to native speakers of French through course enrollment or EM credit. Conducted in French.

250 Topics in French Literature and Culture in Translation
Examination of selected topics through a study of French literary works in the context of culture and the arts. Topic varies. 2 2-hr cl. Prereq: English 110 recommended. Repeatable to a maximum of 10 cr hrs. Conducted in English, GEC arts and hums lit course.

293 Individual Studies
Individual Studies.

294 Group Studies
Group Studies.

401 French Grammar Review UGRD 5
Oral and written review of French grammar. Prereq: 201 or 206.

402 French Conversation in a Cultural Context UGRD 5
Practice in speaking French, building of practical vocabulary; emphasis on comprehension and oral expression. Prereq: 201.01 or 206. Not open to native or near-native speakers of this language through regular course enrollment or EM credit.

403 Intermediate French Writing UGRD 5
Basic kinds of French prose and techniques of composition; practice in writing letters, essays, descriptive, narrative, and personal compositions. Prereq: 401. Not open to native speakers of this language through regular course enrollment or EM credit.

404 French Pronunciation UGRD 5
Formation of French sounds, rules of pronunciation and dictation; lectures and practical exercises; use of phonetic symbols. Prereq: 401.

406 Business French I UGRD 5
An introduction to business French with emphasis on basic business terminology, commercial correspondence, similarities and differences in business transactions, and international procedures. Prereq: 206 or any 400-level course or permission of instructor.

418 French Language and Cultures UGRD 5
Exploration of an aspect of French culture through the use of varied texts and multimedia tools (e.g., CD-roms, music, film, internet); topics vary. Prereq: 201 or 206 or permission of instructor. Repeatable to a maximum of 10 cr hrs.

425 French Literature and Society UGRD 5
Readings and analysis of the relationship between literature and society represented in different genres and periods of French Literature. 425H (honors) may be available. Prereq: 201 or 401 recommended.

426 French Literature and the Self UGRD 5
Readings and analysis of various concepts of the self as represented in different genres and periods of French literature. 426H (honors) may be available. Prereq: 201 or 206; 401 recommended.

427 Francophone Literature: from Empire to Nation UGRD 5
Readings and analysis of French-language literary texts as these relate to issues of empire, nation, and identity. 427H (honors) may be available. Prereq: 201 or 206; 401 recommended.

440 Introduction to the Study of Contemporary French Culture
Introduction to ways of studying major aspects of French culture by means of lectures, readings, research projects, in-class presentations, and research reports. Prereq: 201 or 206. Conducted in French.

470 Introduction to French Cinema UGRD 5
Introduction to the study of French cinema, of French film history, and of the art of the cinema. 2 2-hr cl. Prereq: 401. Conducted in French.

506 French-Speaking Cultures in a Business Context UGRD 5
Designed to provide students with a basic hands-on knowledge of principles of social and business interactions within the French-speaking world. Taught in English. Course cannot be used for the major or the minor.

571 Basic French for Graduate Students GRAD 5
Designed primarily for students who have no formal preparation in French; covers basic grammar and vocabulary. Prereq: Grad standing. Credit does not apply to the minimum number of hours required for the master's or doctoral degrees. No audit.
572 French for Research I  
GRAD 3  
Prereq: Grade of C or above in 571, or equiv preparation demonstrated by a placement test. Credit does not apply to the minimum number of hours required for the master's or doctoral degree. No audit. Satisfactory completion of this course (grade of A or B) may be accepted by the student's dept as evidence of a dictionary reading knowledge in fulfillment of PhD language requirement. Repeatable to a maximum of 6 cr hrs.

573 French for Research II  
GRAD 3  
French for Research II.  
Prereq: Grade of A or B in 572, or equiv preparation demonstrated by a placement test. Credit does not apply to the minimum number of hours required for the master's or doctoral degree. No audit. Satisfactory completion of this course (grade of A or B) may be accepted by the student's dept as evidence of a dictionary reading knowledge in fulfillment of PhD language requirement. Repeatable to a maximum of 6 cr hrs.

601 Advanced French Grammar  
UGRD 5  
Systematic review of French grammar with composition and other exercises based on contemporary authors; modern tendencies in syntactic analysis.  
Prereq: 401, 403, and at least one other 400 or 600-level course other than 404.

602 French Translating  
UGRD 5  
An introduction to the theory of translation and practice of translation (French to English and English to French) based on texts reflecting different types of written communication.  
Prereq: 601 or equiv.

603 Advanced Spoken and Written French  
UGRD 3  
Intensive practice in speaking and writing French; based on contemporary usage.  
Prereq: 402, 403, and 601 or equiv. Not open to native speakers of this language through regular course enrollment or EM credit. Repeatable to a maximum of 15 or hrs.

604 Advanced French Pronunciation, Styles, and Francophone Accents  
UGRD 5  
Training in auditory and oral aspects of advanced French pronunciation; analysis of different styles of spoken French and different francophone accents.  
^ 2 1.5-hr cl. Prereq: 404 or permission of instructor.

631 Topics in French Cultures and Literatures  
UGRD 2-5  
Intensive study of an aspect of French culture or literature; topic varies.  
Prereq: 401 and either 425, 426, 427, or 440; or permission of instructor. Repeatable to a maximum of 15 or hrs.

643 From Absolute Monarchy to WWII  
UGRD 5  
Political and cultural history of France from Absolute Monarchy to World War II.  
Prereq: 401 and 440, or permission of instructor.

644 French Civilization since WWII  
UGRD 5  
The transformation of French society since WWII as a result of changing social and political structures.  
Prereq: 401 and 440, or permission of instructor.

650 Survey of Medieval French Literature  
UGRD 5  
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: 401 and either 425, 426, or 427. Not open to students with credit for 721.

652 Early Modern French Literature  
UGRD 5  
Major early modern French literary movements and authors.  
Prereq: 401 and either 425, 426, or 427.

653 French Literature of the Enlightenment  
UGRD 5  
Major ideas and authors of the 18th century in France; emphasis on such writers as Montesquieu, Voltaire, Diderot, and Rousseau.  
^ Prereq: 401 and either 425, 426, or 427.

655 French Literature of the 19th Century  
UGRD 5  
Major 19th-century French literary movements and authors from romanticism to symbolism and naturalism.  
Prereq: 401 and either 425, 426, or 427.

656 French Literature of the 20th and 21st Centuries  
UGRD 5  
Major intellectual and literary currents in France from the early 20th century to the present.  
Prereq: 401 and either 425, 426, or 427.

657.01 Francophone Literature from Black Africa and the Caribbean  
UGRD 5  
Major intellectual and literary currents in black Africa and the Caribbean.  
Prereq: 401 and either 425, 426, or 427.

657.02 Literature from North Africa  
UGRD 5  
Major intellectual and literary currents in francophone North Africa.  
^ Prereq: 401 and either 425, 426, or 427.

657.03 Quebec Literature  
UGRD 5  
Major intellectual and literary currents in Quebec.  
^ Prereq: 401 and either 425, 426, or 427.

663 Women in French Literature  
UGRD 5  
Examination of representations of women and writing by women in selected works of French literature.  
^ Prereq: 401 and either 425, 426, or 427.

670 Studies in French Cinema  
UGRD 5  
The history and aesthetics of French cinema from its beginnings to 1945.  
Prereq: 470. Not open to students with credit for 671. Taught in French.

672 French Cinema, 1945 to Present  
UGRD 5  
The history and aesthetics of French cinema from 1945 to the present.  
Prereq: 15 cr hrs in literature and/or cinema above 200 level or permission of instructor. Taught in English.

690 French-Speaking Internship  
UGRD 1-15  
Supervised training in a French-speaking professional context coordinated by the student's academic advisor and the internship training director.  
Su, Wi, Sp Qtrs. Prereq: At least two 400-level French courses. This course is graded SU.

692 The Romance Languages  
UGRD 5  
Examines the socio-historical factors and the linguistic processes that contributed to the formation of the Romance languages and to their divergences.  
3.5-hr cl. Prereq: One year of a Romance language or permission of instructor. Not open to students with credit for Italian 692 or Linguist 692. Cross-listed in Italian and Romance Linguistics. Offered bi-annually. Taught in English. This course counts toward: the Italian major (as one of the two courses taught in English), the French major (as an elective for all the major tracks), the Linguistics major or minor, the Spanish major (as an elective and the one course taught in English permitted to count for the major).

693 Individual Studies  
UGRD 1-15  
Individual Studies.  
Su, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded SU.

694 Group Studies  
UGRD 1-15  
Group Studies.  
Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

697 Study at a Foreign Institution  
UGRD 1-15  
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.  
Su, Wi, Sp Qtrs. Prereq: Written permission of dept chairperson. This course is Progress (P) graded. 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 45 cr hrs.

699 Undergraduate Research in French  
UGRD 1-15  
Undergraduate research or creative activities in variable topics.  
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded SU.

701 Advanced French Language Usage  
UGRD 5  
Advanced study of present-day French language, with emphasis on more complex and finer morphological, syntactic, semantic, and stylistic distinctions, as well as on idiomatic expression.  
^ Prereq: 601.

702 Advanced Translation and Comparative Stylistics  
UGRD 5  
Theory of translation and a comparative study, through specific exercises and intensive translation, of the stylistic resources of French and English.  
Prereq: 602 or permission of instructor.

706 France: Geographical Setting and Socio-Economic Structures  
UGRD 5  
A study of the French geographic, economic, and social environment as it relates to business; parallel emphasis on advanced language skills.  
Prereq: 406 or permission of instructor. Taught in French.

710 Contrastive Structures of French and English  
UGRD 5  
Comparison of the linguistic structures (phonology, morphology, syntax, and semantics) of French and English with special emphasis on the problems of English-speaking students.  
^ Prereq: 601 or permission of instructor.

712 French Phonology and Morphophonemics  
UGRD 5  
The organization of the French sound system, its evolutionary tendencies, and its role in the articulation of the morphemes of the language.  
^ Prereq: 601 or permission of instructor.

714 Aspects of Morphology, Syntax, and Semantics of French  
UGRD 5  
Selected aspects of the morphological, syntactic, and lexical organization of modern French and the role of these subsystems in the communication of meaning.  
Prereq: 601 or permission of instructor.

716.01 Introduction to Medieval French  
UGRD 5  
Introduction to medieval French grammar and vocabulary, using a medieval text as vehicle.  
^ Prereq: 601 or permission of instructor. Not open to students with credit for 811.

716.02 Introduction to Medieval Occitan  
UGRD 5  
Introduction to the language and literature of medieval Occitan, especially to that of the troubadours.  
^ Prereq: 716.01 or permission of instructor.
<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
<th>Requirements</th>
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</thead>
<tbody>
<tr>
<td>211</td>
<td>Introduction to Geomatics</td>
<td>UGRD 4</td>
<td>Offered. An introduction to geomatics, with an emphasis on basic data collection using ground-based measurement techniques and basic photogrammetry. Su, Au, Wi. Prereq: Acceptance into Geomatics Engineering major or written permission of Department Chair. Not open to students with credit for 400.01 or 400.02 or CivilEn 400 or 400.01 or 400.03. Cross-listed in CivilEn.</td>
</tr>
<tr>
<td>212</td>
<td>Spatial Data Analysis</td>
<td>UGRD 4</td>
<td>Measurement theory, analysis of measurements, computation and adjustment of spatial data, in a computer-oriented geomatics environment. Wi. Prereq: Acceptance into Geomatics Engineering major or written permission of Department Chair. Not open to students with credit for Survey 301. All classes to be run in Region 1 computer lab.</td>
</tr>
<tr>
<td>213</td>
<td>Spatial Data Adjustment I</td>
<td>UGRD 4</td>
<td>An introduction to adjustment theory in geomatics, propagation of variances and covariances; least squares adjustment in geomatics; analysis of adjustment results; hypothesis testing. Sp. Prereq: 3 cl. 1 3-hr lab. Prereq: 410, Math 568, Stat 245. Not open to students with credit for 65 or Survey 450.</td>
</tr>
<tr>
<td>341</td>
<td>Group Studies</td>
<td>UGRD 2-5</td>
<td>Designed to give groups of students an opportunity to pursue special studies not otherwise offered. Su, Au, Wi, Sp. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.</td>
</tr>
</tbody>
</table>
214 Geodetic Science

502 Engineering Surveying UGRD 4
Surveying applications for engineering, construction, mining and transportation work. Route surveying and geometric design; topographic site surveys and mapping; earthwork computations.
Sp Qtr. 3 cl, 1 3-hr lab. Prereq: 410; or permission of instructor. Not open to students with credit for Survey 407 or 511.

521 Geodetic Measurement UGRD 4
Fundamentals of geodetic measurements; astronomical observations; geodetic control surveys; 3-D measurement systems.
Au Qtr. 3 cl, 1 3-hr lab. Prereq: 450. Not open to students with credit for Survey 509 or 511.

540 Senior Project I UGRD 1
First part of a project to be taken by students in their final year in the program, running from Autumn to Spring quarters. GeodSciE 783H (honors) may be available for students in the Honors program.

541 Senior Project II UGRD 1
Second part of a project to be taken by students in their final year in the program, running from Autumn to Spring quarters. GeodSciE 783H (honors) may be available for students in the Honors program.

542 Senior Project III UGRD 2
Third part of a project to be taken by students in their final year in the program, running from Autumn to Spring quarters. GeodSciE 783H (honors) may be available for students in the Honors program.

550 Spatial Data Adjustment II UGRD 3
Continuation of 450; phased adjustment; 3-D adjustment; adjustment applications in photogrammetry and high-precision metrology; network design and analysis; error analysis. GeodSciE 551H (honors) may be available for students in the Honors program.
Sp Qtr. 3 cl. 450. Not open to students with credit for 650 and 651.

560 History of Surveying UGRD 3
History of earth measurement and methods; historical connections with other sciences; history of land survey systems in the US; milestones in technology.
Au Qtr. 3 cl. Prereq: 410. Not open to students with credit for Survey 403.

561 Boundary Surveying UGRD 4
Land surveyor's role; analysis of evidence and procedures for boundary location; retracement principles for sequence; simultaneous and public land surveys; laws on surveying practices.
Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 560. Not open to students with credit for Survey 524.

562 Subdivision Design UGRD 3
Process of subdividing and platting land; analysis of soils, topography, terrain, earthwork, geometry and other variables for land subdivision; plat preparation; layout of development plans.
Sp Qtr. 3 cl. 561. Not open to students with credit for Survey 507.

563 Land Information Management UGRD 4
Land information as a resource in an information society, land information systems (LIS), and issues related to the implementation and development of LIS.
Au Qtr. 3 cl, 1 3-hr lab. Prereq: 410. Not open to students with credit for 626.

575 Professional Practice UGRD 2
Application of geomatics from the points of view of the practitioner and the consumer of land-related data. Professional responsibility and ethics.
Sp Qtr. 3 cl, 1 3-hr lab. Prereq: 450. Not open to students with credit for Survey 510.

597 Mapping the World UGRD 5
Scientific and technological bases of modern mapping science and its contribution to contemporary world issues.
** Au Qtr. 4 cl, 1-3-hr lab. Prereq: Sr standing. LAR course. GEC contemporary world course.

603 Remote Sensing of Environment GRAD 4
The energies of the natural and cultural environment, current remote sensing systems, and case histories of applications in measuring the environment.
Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 410 and Math 254; or written permission of instructor. Not open to students with credit for CivilEn 603. Cross-listed in Civil Engineering.

604 Terrain Analysis GRAD 4
Principles and applications of photo pattern analysis, geologic and geomorphologic patterns, terrain studies, and land use suitability and capability mapping.
Au Qtr. 3 cl, 1 3-hr lab. Prereq: CivilEn 405 or Survey 450 or equiv with written permission of instructor. Not open to students with credit for CivilEn 604. Cross-listed in Civil Engineering.

605 Fundamentals of Geographic Information GRAD 5
Systems
Basic principles of geographic and land information systems and their use in spatial analysis and information management.

606 Introduction to GPS: Theory and Applications UGRD 3
Introduction to reference systems; types of GPS observable; principles of GPS operations; GPS error analysis; field procedures; data collection, processing and GPS applications.
Sp Qtr. 2 cl. 1 3-hr lab. Prereq: 550. Not open to students with credit for 608.

623 Topics in Photogrammetry GRAD 4
Techniques, equipment for mapping and point determination; concept, methods, results of block adjustment; image based maps; computer-assisted and controlled-data processing; terrestrial and space photogrammetry.
Sp Qtr. 3 cl. Prereq: 601 and 650; or permission of instructor. Not open to students with credit for Diet 625, 726, 727, 728, or 728.

624 Advanced Topics in Photogrammetry UGRD 4
Photogrammetric aerotriangulation; analytical point positioning, applications in terrestrial photogrammetry and camera calibration; data capture for digital elevation models; orthophotography.
Wi Qtr. 3 cl. 1 3-hr lab. Prereq: 450 or 650; and 623; or permission of instructor. Not open to students with credit for Survey 515.

636 Map Projections GRAD 4
The principal map projections of the sphere; their distortions, properties, and usage.
Wi Qtr. 3 cl, 1 3-hr lab.

637 Topics in Mapping GRAD 4
A survey of cartographic fundamentals in the context of contemporary developments.
Sp Qtr. 3 cl, 1 3-hr lab. Prereq: 630 or equiv. Not open for grad credit to students with credit for Diet 632, 633, or 732.

638 Topics in Land Information Management GRAD 3
Overview of topics in geographic and land information systems (GIS/LIS); land information management (LIM).
^ Sp Qtr. 3 cl. Prereq or concur: 630 or written permission of instructor. Not open to students with credit for 626 or Survey 625.

640 Decision-Making with GIS UGRD 3
Examination of decision-making processes; examination of GIS functionality to assist decision-making processes; practical examples and case studies.
Su Qtr. 2 1-hr cl, 1 3-hr lab. Prereq: 630 or 607; or 607 in CRPlan, CivilEn, Geog, or NatRes; or permission of instructor. Not open to students with credit for 694D. Practical aspects of using GIS in a decision-making environment. Emphasis is on working in a multi-disciplinary team-based environment, using GIS as a support and analysis tool.

664 Geodetic Astronomy GRAD 4
Stellar coordinate systems; stellar positions and motions; time, star catalogues; principles of position determination.
Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 650 or equiv.

693 Individual Studies GRAD 2-9
Assigned reading laboratory or field work, under the guidance of a staff member, arranged to meet the requirements of individual students.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 60 cr hrs. This course is graded S/U.

694 Group Studies GRAD 1-9
Group Studies.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 60 cr hrs.

697 Study at a Foreign Institution UGRD 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This course is Progress (“P”) graded. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

699 Undergraduate Research in Geomatics UGRD 1-5
Engineering
Opportunity for undergraduate student to conduct research in Geomatics Engineering.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

774 Spectral Methods and Raster Geometry in Digital Mapping GRAD 4
Spectral analysis techniques and raster geometry as applied in digital photogrammetry and digital cartography; pattern recognition theories.
* Sp Qtr. 3 cl, 1 3-hr lab. Prereq: GeodSciE 642.

783H Honors Research GRAD 1-4
Supervised research and project work arranged individually for honors students.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: 450, enrollment in the honors program and permission of instructor. Not open to students with credit for 540, 541, 542, 783.01H. This course is used by Honors students instead of the 540-542 Senior Project sequence. Students must take a minimum of 4 credit hrs to count for their Honors Research Project.

803 Advanced Methods of Processing Digital Imagery in Photogrammetry GRAD 3
Utilization of advanced methods of image processing and computer vision techniques as it pertains to digital photogrammetry.
* Sp Qtr. 2 cl, 1 3-hr lab. Prereq: 829 or written permission of instructor.
831 Advanced Pattern Recognition and Interpretation Methods in Digital Mapping
Methods of pattern recognition, feature extraction, and object classification, as it pertains to digital photogrammetry and digital cartography.
* Wi Qtr. 2 cl, 1 3-hr lab. PreReq: 630.

885 Research Principles and Techniques
Research Principles and Techniques.
Su, Au, Wi, Sp Qtrs. PreReq: Permission of instructor. Repeatable to a maximum of 60 cr hrs. This course is graded S/U.

887 Seminar
Seminar.
Su, Au, Wi, Sp Qtrs. PreReq: Permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

888 Advanced Topics in GPS
Advanced GPS positioning and ambiguity resolution; GPS for low earth orbit; orbit determination; remote sensing, integration with navigation and imaging sensors (digital cameras, LIDAR).
* Sp Qtr. 2 cl, 1 3-hr lab. PreReq: 608 or 609, 777 and 650, or permission of instructor. An individual project is required. Offered odd numbered years.

894 Group Studies
Group Studies.
Su, Au, Wi, Sp Qtrs. PreReq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.

899 Interdepartmental Seminar
Topics to be announced each quarter offered.
Su, Au, Wi, Sp Qtrs. PreReq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

998 Research in Geodetic Science: Thesis
Research for thesis purposes only.
Su, Au, Wi, Sp Qtrs. PreReq: Permission of instructor. This course is graded S/U.

999 Research in Geodetic Science: Dissertation
Research for dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Geodetic Science

597 Mapping the World
Scientific and technological bases of modern mapping science and its contribution to contemporary world issues.
** 4 cl, 1-3 hr lab. PreReq: Sr standing. GECLAR course.

607 Fundamentals of Geographic Information Systems
Basic principles of geographic and land information systems and their use in spatial analysis and information management.
* 3 cl, 1-3 hr lab. PreReq: Sr standing. Not open to students with credit for Geog 685; or 607 in CAR Plan, Civil En., Geog, Geol sci, Geodiscie or ENR. Cross-listed in City and Regional Planning, Civil Engineering, Geography, Geological Sciences, and Environment and Natural Sciences.

612 Topics in Geodesy
Georeferencing the ellipsoid; geodetic coordinates computations for short and medium lengths; geodetic datums; Earth's gravity field; artificial geodetic Earth satellites; and figure of the Earth.
Au Qtr. 3 cl, 1-3 hr lab. PreReq: 601 or Survey 511 or written permission of instructor. Not open to students with credit for Survey 612 or for grad credit to students with credit for 658, 776 or 777, or Survey 612.

633 Digital Surface Models
Principles of digital surface modeling and their applications with the aid of computer-based techniques.
Sp Qtr. 3 cl, 1-3 hr lab.
* Sp Qtr. 3 cl, 1-3 hr lab. PreReq: 630 and 632, or permission of instructor; and 650; or prereq or concur Geog 683.02. Not open to students with credit for 631.

636 Map Projections
The principal map projections of the sphere; their distortions, properties, and usage.
Wi Qtr. 3 cl, 1-3 hr lab. PreReq: 450.

637 Topics in Mapping
A survey of cartographic fundamentals in the context of contemporary developments.
3 cl, 1-3 hr lab. PreReq: 630 or equiv. Not open for grad credit to students with credit for 632, 633 or 732.

638 Topics in Land Information Management
Overview of topics in geographic and land information systems (GIS/LSI) and land information management (LIM).
3 cl. PreReq or concur: 630 or written permission of instructor. Not open to students with credit for 626 or Survey 625.

650 Adjustment Computation I
Classification of errors; measures of dispersion; variance and covariance; propagation of errors; weights; observation and normal equations; algorithms; and examples; statistical tests; error ellipsoids.
Au Qtr. 4 cl, 1 3-hr lab PreReq: Math 153 or equiv.

651 Adjustment Computation II
A posteriori variances; representation of residuals; condition equations with and without parameters; stochastic or weighted constraints; datum parameters; prior information; special test statistics; algorithms and examples.
Wi Qtr. 3 cl, 1-3 hr lab PreReq: 650 or equiv.

658 Geometric Geodesy
Geodetic and astronomic coordinates, ellipsoidal geometry, geodetic datums, terrestrial and celestial reference systems, reduction of celestial coordinates, polar motion, time systems.
Wi Qtr. 4 cl, PreReq: Survey 511 or equiv.

660 Geometric Reference Systems
Geodetic and astronomic coordinates, ellipsoidal geometry, geodetic datums, terrestrial and celestial reference systems, reduction of celestial coordinates, polar motion, time systems.
Wi Qtr. 4 cl, 1-3 hr lab PreReq: 650 or equiv.

693 Individual Studies
Assigned reading laboratory or field work, under the guidance of a staff member, arranged to meet the requirements of individual students.
PreReq: Permission of instructor. Repeatable to a maximum of 60 cr hrs. This course is graded S/U.

694 Group Studies
Group Studies.
Su, Au, Wi, Sp Qtrs. PreReq: Written permission of instructor. Repeatable to a maximum of 60 cr hrs.

697 Study at a Foreign Institution
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
PreReq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

699 Undergraduate Research in Geomatics Engineering
Opportunity for undergraduate student to conduct research in Geomatics Engineering.
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

745 Inertial Navigation/Positioning Analysis
Coordinate frames; inertial measurement units–mechanizations, system error dynamics; linear estimation theory with application to initialization and calibration; system integration with GPS; geodetic applications.
* Sp Qtr. 4 cl, 1-3 hr lab. PreReq: 651, Geod Sci 609, or equiv and permission of instructor.
Course covers the operation and performance of inertial navigation systems, the theory of linear estimation, including the Kalman filter, as applied to INS and its integration with the Global Positioning System, and specific problems in geodetic science appropriate for and/or benefitting from INS implementation.

760 Advanced Geometric Geodesy
Solution of long line problems on the ellipsoid; datum transformations; determination of the size and shape of the reference ellipsoid; fundamentals of three-dimensional geodesy.
* Wi Qtr. 4 cl, 1-3 hr lab. PreReq or concur: 658, 776, and 777.

762 Advanced Adjustment Computations
Large patterned systems, Gauss-Markoff model and mixed models, techniques of collocation and its robustification; generalized matrices in geodetic science; estimable and projected parameters; error ellipsoids.
Au Qtr. 3 cl, 1-3 hr lab. PreReq: 651 or equiv.

765 Analysis and Design of Geodetic Networks
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.
Sp Qtr. 3 cl. PreReq: 651 or equiv.

776 Gravimetric Geodesy
The gravity and its potential; the disturbing potential and its representation; applications and current methods.
Sp Qtr. 4 cl, 1-3 hr lab. PreReq: 651 and 658; or equivs.

777 Satellite Geodesy
Geodetic and dynamic applications of artificial satellites in geodesy; determination of station positions and the gravity field of the Earth.
Au Qtr. 4 cl, 1-3 hr lab. PreReq: 664 and 776; or equivs.

781 Theory of Earth Rotation
Theory of Earth rotation; determination of Earth orientation parameters; precession; nutation, polar motion and time, and radio interferometry of extragalactic radio sources; and Earth tides.
* Wi Qtr. 3 cl. PreReq: 664.
216 Geodetic Sciences

783.01H Honors Research I UGRD 1
Supervised research and project work arranged individually for honors students. This course is used by Honors students instead of the 540-542 Senior Project sequence.

Preprq: 450; enrollment in Honors program. Not open to students with credit for 540, 541, 542.
This course is Progress (P) graded. This course is completed by successfully completing all three decimal subdivisions in sequence. Credit will be awarded upon completion of H783.03.

783.02H Honors Research II UGRD 1
Supervised research and project work arranged individually for honors students. This course is used by Honors students instead of the 540-542 Senior Project sequence.

Second part of Honors Research Project sequence.
Preprq: 450; enrollment in Honors program. Not open to students with credit for 540, 541, 542.
This course is Progress (P) graded. This course is completed by successfully completing all three decimal subdivisions in sequence. Credit will be awarded upon completion of H783.02.

783.03H Honors Research III UGRD 2
Supervised research and project work arranged individually for honors students. This course is used by Honors students instead of the 540-542 Senior Project sequence.

Third and final part of Honors Research Project sequence.
Preprq: 450; enrollment in Honors program. Not open to students with credit for 540, 541, 542.
This course is Progress (P) graded. This course is completed by successfully completing all three decimal subdivisions in sequence. This is the final course in the Progress graded sequence H783.01-H783.02-H783.03.

786 Managing Spatial Data Structures for Computer GRAD 4
Mapping
Introduction to spatial data structures for computer mapping; implementation of domain-specific data structures using Avenue scripting and C++.
* Wi Qtr. 3 cl, 1 1-hr lab. Prereq: 732 or written permission of instructor.

835 Advanced Cartography GRAD 4
A review and examination of current research, development, and thinking in cartography with particular attention to mapping from space platforms.
* Wi Qtr. 3 cl, 1 1-hr lab. Prereq: 732 or written permission of instructor.

837 Computational Cartography GRAD 4
Computational techniques and computational complexity of various operations of digital mapping will be examined.
Sp Qtr. 3 1-hr lec, 1 3-hr computer lab. Prereq: 786 or Cptr/Inf 680 or permission of instructor.

838 Algorithms in Map Generalization GRAD 2
Classical and recent map generalization algorithms will be presented, compared, and analyzed in class. Students will assess benefits and limitation of all algorithms presented.
* Au Qtr. 1 2-hr cl. Prereq: 732 and 786 or Cptr/Inf 680, or permission of instructor. Offered odd numbered years.

862 Adjustment Computations for Random Processes
Random Effects Model, optimal and robust prediction, weak hypothesis testing, spatial processes, covariance function, variogram, homogram, Kriging and alternating interpolators, quality measures.
Sp Qtr. 3 cl. Prereq: 650 or equiv.

871 Advanced Gravimetric Geodesy GRAD 4
Boundary-value problem; use of spherical harmonics; statistical application; appropriate representations; computations in space; combination of gravimetric and satellite data.
* Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 762 and 777, or equivs.

873 Advanced Satellite Geodesy GRAD 4
Dynamics of earth orbiting satellites; equations of motion and their solutions; advanced data acquisition methods; analysis for the gravity field and station positions.
* Sp Qtr. 3 cl, 1 3-hr lab. Prereq: 762 and 777, or equivs.

875 Spectral Methods in Gravimetric Geodesy GRAD 4
Spectral analysis theory and techniques in gravimetric geodesy. Covers Fourier, Hankel, Legendre transforms; convolutions, discrete techniques, correlation, and psd estimation, and frequency-domain lsc.
* Sp Qtr. 3 cl, 1 3-hr lab. Prereq: 871 or permission of instructor.

885 Research Principles and Techniques GRAD 2-8
Research Principles and Techniques.
Preprq: Permission of instructor. Repeatable to a maximum of 60 cr hrs. This course is graded S/U.

887 Seminar GRAD 1-5
Seminar.
Preprq: Permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

894 Group Studies GRAD 2-8
Group Studies.
Preprq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.

899 Interdepartmental Seminar GRAD 1-5
Topics to be announced each quarter offered.
Preprq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

998 Research in Geodetic Science: Thesis GRAD 1-18
Research for thesis purposes only.
Preprq: Permission of instructor. Repeatable. This course is graded S/U.

999 Research in Geodetic Science: Dissertation GRAD 1-18
Research for dissertation purposes only.
This course is graded S/U. Repeatable.

Geography

120 Earth Systems II: Atmospheric Environment UGRD 5
Introduction to the characteristics and processes of the Earth's atmosphere and their linkage with other physical systems of the planet and with human activity. 120H (honors) may be available.
2 1 1/2-hr lec, 1 1/2-hr lab. Not open to students with credit for 220 or 520, or AtmosSc 230. GEC phys sci course.

200 World Regional Geography UGRD 5
An examination of the human and physical geographic structure of all world regions; defined primarily at the continental scale. Examines regions in global context. 200H (honors) may be available.
3 11/3-hr cl. GEC soc sci human, natural, and economic resource and social diversity - international (Global) course. SS Admins Cond course.

205 Human Geography UGRD 5
Introduces key concepts in human geography: interconnections between people and places; the role of space and place in political, cultural, economic, and social interactions. GEC soc sci individuals and groups course.

210 Physical Geography and Environmental Issues UGRD 5
Introduction to physical geography from an environmental perspective, including the interaction of physical and social factors in the causes of and strategies for ameliorating environmental problems.
2 11/3-hr lec., 1 11/3-hr lab. Not open to students with credit for 120. GEC phys sci course.

220 Introduction to Physical Geography UGRD 5
The elements and processes of the natural environment, their characteristics, distribution, and implications in the human habitat. 220H (honors) may be available.
5 cl. NS Admins Cond course.

240 Economic and Social Geography UGRD 5
Geographic analysis of relationships between society and economy; focusing on such issues as globalization, production and consumption, inequality and social differences.
5 cl. GEC soc sci human, natural, and economic resources course. SS Admins Cond course.

294 Group Studies UGRD 3-5
Students are given the opportunity to pursue special studies not otherwise offered. Repeatable to a maximum of 10 cr hrs.

400 Geography of North America UGRD 5
Geographical analysis of North America; spatial patterns and processes associated with culture, politics, economy and social differences at international, national, regional and urban scales. 400H (honors) may be available.
3 1.5-hr cl. GEC soc sci diversity in the US course.

401 Geography of Ohio UGRD 3
An appraisal of geographic factors in the settlement and development of Ohio; an overview of the evolution of the Ohio economy.
3 cl. Prereq: Either 200, 220, or 240, or equiv.

410H Global Climate and Environmental Change UGRD 5
Examines both natural and social factors that force changes in our climate and environment and explores strategies for a sustainable environment in the future.
2 1.5-hr cl, 1 2-hr cl. Limited to honors or scholars students. GEC soc sci human, natural, and economic resources and phys sci course.

420 Global Climate Change: Causes and Consequences
Examines the natural and human factors that force changes in our climate and environment and explores strategies for a sustainable environment in the future. GEC phys sci course.

430 Geographical Perspectives on Environment and Society UGRD 5
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.
2 1 1/2-hr cl, 1 1 1/2-hr lab. GEC soc sci human, natural, and economic resources course.

445 Transportation Security UGRD 5
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.
2 2-hr cl.
450 The Making of the Modern World UGRD 5
The geographies of modernity and their formation: the world market, the global political diorama, and constructing difference, colonialism, the transformation of nature, Eurocentricity; post-modernism. 2 2-hr cl. Prereq.: Soph standing or above. GEC soc sci organizations and policies and social diversity - international issues (Global) course.

455 Cities and their Global Spaces UGRD 5
Globalization and urbanization; urban economies, spaces, and societies; function, form, and pattern in developed and developing world cities.

460 Space, Power and Political Geography UGRD 5
Political geographic thought; territory and territoriality; borders and scale; space, power and uneven development; states and statecraft; and the politics of nations, regions and localities. 2 2-hr cl. GEC soc sci organizations and policies course.

465 Global Politics and the Modern Geopolitical Imagination UGRD 5
Explores the neglected, rich, and contested tradition of geopolitics, defined as geographical assumptions that structure knowledge and practice of world politics; covers the 19th-21st centuries. GEC soc sci organizations and policies course.

470 Life and Death Geographies: Global Population Dynamics UGRD 5
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. 3 cl.

480 Map Reading and Interpretation UGRD 5
Introduction to map interpretation, analysis, and use; spatial data literacy; social issues and representation. 3 cl, 2 labs.

490 Biogeography: An Introduction to Life on Earth UGRD 5
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. 2 2-hr cl.

505 Geography of Latin America UGRD 5
A thematic introduction to the lands and peoples of the region, with emphasis on interconnections between biophysical systems, landscape change, and population dynamics (urbanization, migration). 3 cl. Not open to students with credit for 505.02.

510 Geography of the European Union UGRD 5
Geographic factors in the economic, social, and political progress of European integration; major problems of the area in the light of their geographic background. 3 cl.

511 Geography of Eastern Europe UGRD 5
Resources, their assessment, and development, and related problems in Eastern Europe; the geographic significance of each state to the Communist bloc and to the West. 2 2-hr cl.

512 Geography of the Former Soviet Union UGRD 5
A survey of the human geography of the area defined by the successor states to the Soviet Union with an emphasis on ongoing transformations. 2 2-hr cl.

513 South Asia: Ecology, Economy, Polity UGRD 5
Survey of the region of South Asia (India, Pakistan, Afghanistan, Bangladesh, Sri Lanka) in terms of environment, society, and politics.

520 Climatology UGRD 5
The elements and the controls of climate; types of climate and their distribution; climates and their effects on the economic and other activities of humans. 5 cl. Not open to students with credit for AtmosSc 230.

580 Elements of Cartography UGRD 5
A study of the cartographic techniques of map compilation and presentation including generalization, symbolization, reproduction, and simple computer mapping with an emphasis on thematic mapping. Au, Sp Qtr. 2 cl, 2 2-hr labs.

597.01 World Urbanization UGRD 5
An examination of geographic aspects of the urbanization process in the world’s major regions; inter-relationships between urbanization and economic development. 2 2-hr cl. Prereq.: Jr or sr standing. Not open to students with credit for 450 or 597. GEC contemporary world course.

597.02 Integrated Earth Systems: Confronting Global Change UGRD 5
Introduction to numerous global change issues through the exploration of the integrated Earth system; problem-solving strategies within an interdisciplinary team environment. 2 1.5-hr cl, 1 1.5-hr lab. Prereq.: Jr or sr standing. GEC contemporary world course.

597.03 Environmental Citizenship UGRD 5
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 English 597.03. Cross-listed in English. GEC contemporary world course.

600 Geographic Inquiry UGRD 5
History of geographic thought; covers major advances and debates in theory and method, and outlines major contributions of geographic research.

605 New Worlds of Latin America UGRD 5
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. 2 2-hr cl. Repeatable to a maximum of 10 or hrs.

607 Fundamentals of Geographic Information Systems UGRD 5
Basic principles of geographic and land information systems and their use in spatial analysis and information management. 3 cl, lab arr. Prereq.: Geog major or permission of instructor. Not open to students with credit for 685; or 607 in CRPlan, CivEn, GeodSci, GeolSci, or NatRes. Cross-listed in City and Regional Planning, Civil Engineering, Geodetic Science, Geological Sciences, and Natural Resources.

608 South Africa: Society and Space UGRD 5
South Africa’s racialized geographies, patterns of urbanization and uneven development, and the role of social struggle in their production. 2 2-hr cl.

620 Synoptic Meteorology Laboratory GRD 3
Introduction to reading and interpretation of synoptic weather maps and diagrams—data-communications systems. 2 cl, 1 lab hr. Prereq or concur: 520 or AtmosSc 230. Not open to students with credit for AtmosSc 620. Cross-listed in Atmospheric Sciences.

622.01 Microclimatology: Boundary Layer Climatology UGRD 5
Theory of exchanges of energy and mass at the Earth-atmosphere interface as it relates to micrometres with particular emphasis upon radiation and climate. 5 cl. Prereq.: 520 or AtmosSc 230 or permission of instructor, and Physics 132.

622.02 Microclimatology: Micrometeorological Measurements UGRD 5
Practical experience in the fabrication of instruments, deployment of measurement systems in the field, and recording of data related to micrometres. * 3 cl, 1 3-hr lab. Prereq.: 622.01.

623.01 Synoptic Meteorology: Synoptic Analysis and Forecasting UGRD 5
The theory and practice of weather forecasting. Theory and practice in synoptic weather analysis and forecasting. 5 cl. Prereq.: 520 or AtmosSc 230 or Physics 503, and AtmosSc 620 or Geog 620; and prereq or concur: Physics 132. Not open to students with credit for 623.

623.02 Synthetic Meteorology: Severe Storm Forecasting by Radar and Satellite UGRD 5
The theory and practice of weather forecasting. The theory and application of radar and satellite imagery in weather forecasting; emphasis on severe thunderstorms, tornadoes, and hurricanes; analysis of their evolution and structure. 2 2-hr cl. Prereq.: 623 or 623.01.

630 Environmental Conservation UGRD 5
Conservation of nature; nature-society theory; conflicts around environmental change; conservation; and contemporary conservation programs and strategies. 2 1.5-hr cl.

635 Globalization and Environment UGRD 5
Transnational dimensions of changes to the natural environment; ways that global economic activity, international institutions, and global environmentalism contribute to environmental problems and solutions. 2 2-hr cl.

640 Economics, Space and Society UGRD 5
A theoretical and substantive examination of economic geography; the interface of the economy within society, politics, and culture, and multiple expressions of capitalism. 2 2-hr cl.

642 Geography of Development UGRD 5
Political economy of development; development theory; the historical geography of capitalist development; and contemporary development practices and strategies. 3 cl.

643 Geographies of Governmentalities UGRD 5
Governance and society from a geographic perspective using Foucault’s governmental framework. 2 2-hr cl. GEC soc sci organizations and policies course.
645 Geography of Transportation UGRD 5
Relation between transportation and spatial organization; selected analytical models dealing
with traffic demand, network configuration, and allocation of transport facilities; application to
selected problems. 3 cr.

647 Locational Analysis UGRD 5
Historical review of major location theories and evaluation of application of such theories to
geographic problems. 3 cr.

650 Urban Spaces in the Global Economy UGRD 5
An examination of social, economic, cultural and political processes that produce urban space in
local, national and global terms. 3 cr.

652 Social Cities UGRD 5
Geographies of meaning and difference in cities: meanings of the built environment, situated
cultural politics, urban geographies of race, ethnicity, class, gender, sexuality and age.
2 2-hr cl.

655 Land Use Geography UGRD 5
Causes and consequences of recent regional and national land-use changes; urban
decentralization, suburbanization of jobs and people; changing relationships between economic
activity and the environment. 2 2-hr cl. Prereq: 200 or 220 or 240 or permission of instructor.

660 Urban Political Geography UGRD 5
The changing politics of space in cities: class, neighborhood, and workplace in the industrial
and the post-industrial city. 2 2-hr cl. Prereq: 460.

680 Computer Cartography and Geographical Visualization UGRD 5
Examination of theory, techniques, and applications of computer-based interactive mapping and
visualization. 2 2-hr cl. Prereq: 580 and Math 150; or equiv.

682 Individual Studies in Cartography UGRD 3-5
Individual study of cartographic subjects; map compilation, cartographic classification,
regionalization, and multi-dimensional representation, computer mapping and real-time
computer cartography. Conf and lab. Prereq: Permission of instructor. This course is graded S/U.

683 Quantitative Geographic Methods UGRD 5
An introduction to statistical data analysis in geography, fundamental methods used in
quantitative geographic research. 2 2-hr cl, 1 1.5-hr lab. Prereq: Stat 145 or 245, or equiv; or grad standing in Geog.

684 Geographic Applications in Remote Sensing UGRD 5
Introduction to the fundamental principles, methods, and geographic applications of remote
sensing. Prereq: Stat 245 or permission of instructor.

685 Intermediate Geographic Information Systems UGRD 5
Designed to provide a background in GIS-based spatial analysis approaches and develop an
understanding of the operational basis of modern GIS technology. 2 2-hr cl, 1 3-hr lab. Prereq: 607, or 607 in one of the following depts: CRPlan, CivEn, GeodSci, or NatRes; or permission of instructor.

686 GIS Applications in Social Science and Business UGRD 5
Application of GIS technology to the analysis of small area statistical data is illustrated through
laboratory exploration of social science and business research problems. 2 1.5-hr cl, 1 3-hr lab. Prereq: One course at the 300 level or above in human geography, marketing, or planning; prereq or concur: 685; or permission of instructor.

687 GIS Design and Implementation UGRD 5
Practice-oriented development, design, implementation and evaluation of spatial databases,
with an emphasis on local problems. 2 2-hr cl. Prereq: 685 or ENR 745 or permission of instructor.

688 Emerging Topics in GIS UGRD 5
Examination of major recent developments in the theories, technologies, and/or applications of
geographical information science. Prereq: 686 or 687 or permission of instructor.

689 Student Intern Program in Geography UGRD 3-10
An opportunity for work experience and on-the-job learning in geography-related employment.
Prereq: 20 hours of major program courses and permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

693 Individual Studies UGRD 1-15
Individual study of a special problem or of a particular region. Prereq: Permission of instructor. Repeatable. This course is graded S/U.

694 Group Studies UGRD 3-5
Group study of special topics in various fields of geography. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

695 Undergraduate Research and Professionalization Seminar UGRD 5
Introduction to conducting research in geography, practical experience in generating, analyzing,
and presenting geographic information; explores fieldwork methods and develops professional
skills, including proposal writing. 2 2-hr cl. Prereq: 20 or 218 hrs in Geog.

697 Study at a Foreign Institution UGRD 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that
work. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs.
This course is Progress (P) graded. Students will pay Ohio State fees and any fees in excess of
Ohio State tuition, as well as all travel and subsistence costs.

740 Advanced Locational Analysis UGRD 5
Advanced problems in location analysis, application of programming techniques and spatial
equilibrium analysis. 3 cl. Prereq: 647 or permission of instructor.

780 Analytical Cartography UGRD 5
An examination of the theory and methods of analytical cartography.
2 2-hr cl, 2-hr lab. Prereq: 680, 795 or equiv, and Math 152 or equiv; or prereq or concour: GeodSci 631.

782 Interactive Cartographic Systems UGRD 5
An examination of the theory and methods of developing, building, and implementing interactive
cartographic systems. 2 2-hr cl. Prereq: 780.

783H Honors Research UGRD 3-5
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: 4th yr standing with a grade of A in at least half of the Geog courses taken and an average of at least B in the remainder; written permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 2 hrs are required of candidates for the degree BA with distinction in Geog. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs.
This course is graded S/U.

787 Advanced Applications in Geographic Information Systems UGRD 5
Examination of selected problems relating to the application of geographic information system
technology to various topical areas; the topic varies each time course is offered, and topics may
include climatology, urban geography, and biogeography. 2 3-hr cl. Prereq: 685 and 687, or permission of instructor. Repeatable to a maximum of 15 cr hrs.

789 Survey Research Practicum GRAD 5
Hands-on applications for students interested in the planning, implementation, and analysis of a

795 Seminar in Geography UGRD 5
Introduction to research procedures, problem formulation, and application of research
methods in geography. 2 2-hr cl. Repeatable to a maximum of 20 cr hrs.

800.01 Seminar: Theory of Regional Development GRAD 3-5
The development of theory in regional development and its application to selected problems.
Repeatable to a maximum of 20 cr hrs.

800.02 Seminar: Problems in Regional Development GRAD 3-5
The development of theory in regional development and its application to selected problems.
Repeatable to a maximum of 20 cr hrs.

820.01 Seminar: Problems in Climatology GRAD 3-5
Problems in Climatology. Repeatable to a maximum of 20 cr hrs.

820.03 Seminar: Special Problems in Physical Geography GRAD 3-5
Special Problems. Repeatable to a maximum of 20 cr hrs.

821 Dynamic Climatology GRAD 5
Dynamics, thermodynamics, energy conservation, flows, conversion processes; large scale
circulation patterns with particular emphasis upon turbulence at the synoptic scale; weather
processes; regional climates.
2 2-hr cl. Prereq: 622.01 or permission of instructor.

822 Microclimatology GRAD 5
Radiation and turbulence processes, conduction; variation in wind, temperature, humidity, soil
moisture, evaporation, soil temperature; influence of vegetation and artificial structures.
2 2-hr cl. Prereq: 620 or 622.01 or permission of instructor.
823 Applied Climatology  GRAD  5
Analysis of climatic and environmental change on various time scales; human impact on climate; theory and application of long-range and climate forecasting.
2-2 hr cl. Prereq: 820.01 or permission of instructor.

840.01 Seminar in Location Analysis: Location Theory  GRAD  3-5
The development of theory in location analysis and its application to selected problems. Repeatable to a maximum of 20 cr hrs.

840.02 Seminar in Location Analysis: Problems  GRAD  3-5
The development of theory in location analysis and its application to selected problems. Repeatable to a maximum of 20 cr hrs.

840.03 Seminar in Location Analysis: Approaches and Issues in Economic Geography  GRAD  3-5
The development of theory in location analysis and its application to selected problems. Current issues and problems in economic geography.
2-2 hr cl. Repeatable to a maximum of 20 cr hrs.

845 Theory of Transportation Geography  GRAD  3-5
The development of theory in transportation geography. Not open to students with credit for 845.01. Repeatable to a maximum of 30 cr hrs.

850.01 Seminar in Urban Geography: Spatial Organization of the City  GRAD  3-5
The development of theory in urban geography and its application to selected problems. Intra-urban analysis, density and land value gradients, residential differentiation, neighborhood and community, and the urban development process.
Repeatable to a maximum of 20 cr hrs.

850.02 Seminar in Urban Geography: Urban Systems Analysis  GRAD  3-5
The development of theory in urban geography and its application to selected problems. Inter-urban analysis; theory of the evolution of urban systems, structural characteristics of sets of cities, recent processes of change, notably deconcentration.
Repeatable to a maximum of 10 cr hrs.

860.01 Seminar: Theory of Political Geography  GRAD  3-5
The development of theory in political geography and its application to selected problems. Prereq: 600 or permission of instructor. Repeatable to a maximum of 30 cr hrs.

860.02 Seminar: Problems in Political Geography  GRAD  3-5
The development of theory in political geography and its application to selected problems. Prereq: 600 or permission of instructor. Repeatable to a maximum of 30 cr hrs.

865 Issues in Critical Human Geography  GRAD  3-5
A variety of theoretical and epistemological issues in critical human geography. Specific topics vary.
Repeatable to a maximum of 20 cr hrs.

870.01 Seminar: Theory of Population and Social Geography  GRAD  3-5
The development of theory in population and social geography and its application to selected problems. Repeatable to a maximum of 30 cr hrs.

870.02 Seminar: Problems in Population and Social Geography  GRAD  3-5
The development of theory in population and social geography and its application to selected problems. Repeatable to a maximum of 30 cr hrs.

880 Seminars in Cartography  GRAD  3-5
Readings and research in cartography.
Prereq: 780 or written permission of instructor. Repeatable to a maximum of 20 cr hrs.

882 Development of Geographic Thought  GRAD  5
The evolution of concepts concerning the nature, scope, and methodology of geography; present focus and trends as reflected in current literature.
2-2 hr cl.

883.01 Quantitative Methods in Geography: Applications I  GRAD  5
Application of quantitative methods to geographic problems: spatial statistics, area sampling, maps of residuals, regionalization methods, and simulation maps.
Wi Qtr. Prereq: Course in introductory statistics and permission of instructor. Decimal subdivisions to be taken in sequence.
101.01 Elementary German I UGRD 5
Development of aural comprehension, speaking, reading, and writing skills in cultural context. 5 cl. Open to students with no prior instruction in German and to those with a maximum of one year of high school German and a placement test score of 0-12.1. 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 dept. GEC for lang course. FL Admis Cond courses. Students must register for and complete 5 or hrs during the qtr. This course is available for EM credit.

101.51 Elementary German I: Individualized Track UGRD 1-5
Development of aural comprehension, speaking, reading, and writing skills in cultural context. Students register for and complete from 1 to 5 or hrs during the qtr. Open to students with no prior instruction in German and to those with a maximum of one year of high school German and a placement test score of 0-12.1. 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 dept. GEC for lang course. FL Admis Cond courses. Students who complete 5 hrs before the end of the qtr may proceed to 102.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Repeatable to a maximum of 5 cr hrs.

102.01 Elementary German II UGRD 4
Development of aural comprehension, speaking, reading, and writing skills in cultural context. 5 cl. Prereq: 101.01 or 5 cr hrs in 101.51. Also open to students with a maximum of two years of high school German and a placement test score of 12-22.0. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. FL Admis Cond courses. This course is available for EM credit.

102.51 Elementary German II: Individualized Track UGRD 1-5
Development of aural comprehension, speaking, reading, and writing skills in cultural context. Students register for and complete from 1 to 5 or hrs during the qtr. Prereq: 101.01 or 5 hrs in 101.51, or permission of instructor. Also open to students with a maximum of two years of high school German and a placement test score from 12-22-0. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. FL Admis Cond courses. Students may register for and complete 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Repeatable to a maximum of 5 cr hrs.

102.66 Elementary German II: Intensive German for Review I UGRD 5
Development of aural comprehension, speaking, reading, and writing skills in cultural context. Review of basic structures, vocabulary, and skills needed for entry into German 103.01. Only open to students with 2 or more years of high school German and placement test score of 0-12.1. Not open to native speakers of this language through regular course enrollment or EM credit. Not open to native speakers of German through regular enrollment or EM credit. Not open to students with credit in 101.01, 101.51, 102.01, 102.51. GEC for lang course. FL Admis Cond courses.

103.01 Intermediate German I UGRD 5
Reading; oral and written practice; grammar review. Balanced use of the basic language skills: reading, aural comprehension, speaking, and writing. 5 cl. Prereq: 102.01, or 5 cr hrs in 102.51, 102.66 or equiv. Not open to native speakers of this language through regular course enrollment or EM credit. (Not all decimal subdivisions offered every qtr.) GEC for lang course. This course is available for EM credit.

103.51 Intermediate German I: Individualized Track UGRD 1-5
Reading; oral and written practice; grammar review; students may select from among the following subdivisions which emphasize specific skills and subject matter. Prereq: 102.01, or 5 or cr hrs in 102.51, 102.66, or equiv. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. Students may register for and complete up to 5 hrs of the following decimal subdivision of 103. (Not all decimal subdivisions offered every qtr.) GEC for lang course. Progress is sequential from one cr hr to the next with proficiency at the level of 80% required for advancement. Repeatable to a maximum of 5 cr hrs.

103.66 Intermediate German I: Intensive German for Review II UGRD 5
Reading; oral and written practice; grammar review; intensive review of basic structures; vocabulary and skills needed for entry into German 104.01. Open only to students with 2 or more years of high school German and placement test score of 12-22-0. Not open to students with credit for German 102.01, 102.01, 103.01, 103.51, 103.66. Not open to native speakers of German through regular enrollment or EM credit. Students who test into 103.66 during Sp Qtr may audit 102.01. GEC for lang course. This course is available for EM credit.

104.01 Intermediate German II UGRD 5
Reading; oral and written practice; vocabulary building. Balanced use of the basic language skills: reading, aural comprehension, speaking, and writing. 5 cl. Prereq: Any decimal subdivision of 103, or 112, or by placement test. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. This course is available for EM credit.

104.51 Intermediate German II: Individualized Track UGRD 1-5
Reading; oral and written practice; vocabulary building; students may select from among the following subdivisions which emphasize specific skills and subject matter. Arr. Prereq: 103.01 or 5 hrs in 103.51. Not open to native speakers of this language through regular course enrollment or EM credit. Not open to students with credit for any decimal subdivision of 104. GEC for lang courses. Students register for and complete from 1 to 5 or hrs during the qtr. Progress is sequential from 1 hr to the next with proficiency at the level of 80% required for advancement. Repeatable to a maximum of 5 cr hrs.

112.01 Intensive German I UGRD 5-15
Elementary and intermediate German for students desiring comprehensive knowledge of German in the shortest possible time; students will devote their entire time to this course. Su Qtr. Prereq: Permission of dept. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. FL Admis Cond course.

112.51 Intensive German II UGRD 1-5
Elementary and intermediate German for students desiring comprehensive knowledge of German in the shortest possible time; students will devote their entire time to this course. Su Qtr. Prereq: Permission of dept. Not open to native speakers of this language through regular course enrollment or EM credit. Not open to students with credit for 103 or equiv. Not open to native speakers of this language through regular course enrollment or EM credit. Enrollment limited to 20 students. Full-time fees required regardless of number of cr hrs. Equiv of 101, 102, and 103. Students may not register for any other course if they enroll in 112. Students with credit for 101 and 102 will enroll for 5 or hrs. Students with credit for 101 only will enroll for 10 cr hrs. Students with no credit in German will enroll for 15 cr hrs. Regardless of cr hrs enrolled a student will attend class throughout entire qtr. Withdrawal from the course means forfeiture of all hrs. No audit. GEC for lang course. FL Admis Cond course.

115 Intermediate German UGRD 10
Intensive 10-week summer course taught in Dresden, Germany, combining the skills development in 103 and 104 with the cultural experience of living abroad. Su Qtr. 5-10 cr. Prereq: 102 or 102.51. GEC for lang course.

201 Intermediate German III: Texts and Contexts from 1945 to the Present UGRD 5
Development of reading, writing, listening, speaking skills through interaction with cultural and historical materials; trends/ideas in politics, society, culture of postwar and contemporary periods. Au, Wi, Sp Qtrs. 3.1-5 hr cl. Prereq: 104 or equiv. Not open to native speakers of this language through regular course enrollment or EM credit. No audit.

202 Business German I UGRD 5
Development of business-related cultural knowledge and communication skills in German; introduction to the world of German business through audio, video, print materials; four-skills course. Su Qtr. 3.1-5 hr cl. Prereq: 201 or equiv, or permission of instructor. No audit.

230 Introduction to German Prose UGRD 5
Reading and discussion of German literary texts representing significant prose types, authors, and periods including fairy tale, fable, diary, short story, novel, essay, and novel. Prereq: 201 or equiv or permission of instructor.

231 Introduction to German Poetry UGRD 5
Reading and discussion of selected German poetry, introducing major German poets and poetic forms; these include the following: ballad, sonnet, and religious and political poetry. Prereq: 201 or equiv or permission of instructor.

232 Introduction to German Drama UGRD 5
Reading and discussion of German dramatic texts, representing influential forms, authors, and traditions: folk comedy, classical tragedy, the tragi-comedy, the radio play, and documentary theatre. Prereq: 201 or equiv or permission of instructor.

250 German Literature and Popular Culture UGRD 5
Study of popular culture forms in relation to the artistic, intellectual, historic, and literary traditions of the German-speaking world. Au, Wi, Sp Qtrs. 2-2.5 hr cl. Repeatable to a maximum of 15 or hrs. Taught in English. GEC arts and hums lit course.

261 German Classics in Translation UGRD 3
Social and intellectual forces in Germany as reflected in German literature from the Enlightenment to the middle of the 19th century; masterpieces from Goethe to Gottfried Keller. Su Qtr. Credit does not apply toward a major in German. Taught in English.

262 Modern German Literature in Translation UGRD 3
Intelectual forces and literary trends in German literature from the end of the 19th century to the present; masterpieces from Gerhart Hauptmann to Bertolt Brecht. 3 cl. Credit does not apply toward a major in German. Taught in English.

263H The Faust Theme UGRD 5
Major versions of the Faust story, their socio-cultural context, and their symbolic expression of recurring human concerns. 2.5-3 hr cl. Prereq: English 110 or 111 or equiv. Taught in English. GEC arts and hums lit and social diversity - international issues (Western) course.

275 Development of Contemporary Germany: Dresden Yesterday and Today UGRD 5
Introduction to German life and culture, past and present, including the new federal states; taught within summer study abroad program with students experiencing German culture first hand. Su Qtr. 2.5-3 hr cl. Prereq: 102 and concur 115. GEC arts and hums cultures and ideas and social diversity - international issues (Western) course.

291 Early German Literature in Cultural Context UGRD 5
Origins and highlights of German culture and life as reflected in literary and poetic works, Germanic mythology, religion, and the arts. Taught in English. Supplemented by audio-visual aids. GEC arts and hums lit and social diversity - international issues (Western) course.
292 Modern German Literature in Cultural Context UGRD 5
Two hundred years of German literature, arts, philosophy, and social thought, as they reflect cultural and social life in German-speaking countries. Taught in English. Supplemented by audio-visual aids. GEC arts and hums lit and social diversity - international issues (Western) course.

293 Individual Studies UGRD 2-5
Individual investigation of minor problems in German language and literature. Su, Au, Wi, Sp Qtrs. Prereq: Written permission of chairperson. Repeatable to a maximum of 10 or hrs. This course is graded S/U.

294 Group Studies UGRD 2-5
Investigation of minor problems in German language and literature. Au, Wi, Sp Qtrs. Prereq: Written permission of chairperson. Repeatable to a maximum of 10 or hrs.

298.01 Study Tour: Domestic UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details. Prereq: Permission of instructor. Repeatable for different titled study tours only.

298.02 Study Tour: Foreign UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details. Prereq: Permission of instructor. Repeatable for different titled study tours only.

299 Weimar and the Third Reich in German Literature and Film UGRD 5
Culture of the Weimar Republic and Nazi Germany in literature, film, the other arts; the roots of fascism and its echoes in postwar Germany. 2 2-hr cl. Taught in English. GEC arts and hums cultures and ideas and social diversity - international issues (Western) course.

301 Advanced German I: Texts and Contexts from 1848 to 1945 UGRD 5
Practice of advanced language skills and development of cultural and historical knowledge through interaction with various materials: trends/ideas in politics, society, culture. Au, Wi, Sp Qtrs. 3.15-hr cl. Prereq: 201 or equiv or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit.

302 Business German II UGRD 5
Continued development of cultural and communication skills in German; study of business trends, traditions, and structures through audio, video, print texts; four-skills course. * Sp Qtr. 3.15-hr cl. Prereq: 202 or equiv or permission of instructor.

303 The Practice of Translation UGRD 3
German-English/German-English translation; texts from diverse areas; emphasis on improvement of German grammar, syntax, idiom, and style; discussion of common translation techniques. 3 cl. Prereq: 201 or equiv or permission of instructor.

360 The German Experience in North America UGRD 5
Introduction to the literature, culture and history of German immigrants to North America—especially Ohio and the Midwest—from the 17th to the 21st century. GEC arts and hums cultures and ideas course.

367 German Literature and American Culture UGRD 5
German perspectives on and in 20th-century American culture. Influence of German thought and writings on American culture; German views of American culture. Au Qtr. 2.2-hr cl. Prereq: English 110 or 110.01 or 110.02 or 110.03. Taught in English. GEC second writing course.

399 The Holocaust in Literature and Film UGRD 5
Reading, analysis, and discussion of representative works pertaining to the Holocaust from the perspectives of the German and Ashkenazi traditions. 2 2-hr cl. Not open to students with credit for Yiddish 399. Cross-listed in Yiddish. Taught in English. GEC arts and hums lit and social diversity - international issues (Western) course.

401 Advanced German II: Texts and Contexts from 1848 UGRD 5
Continued practice of advanced language skills particularly pertaining to written texts and formal speech; broadening of cultural and historical knowledge from the Middle Ages to 1848 through interaction with various materials. Au, Wi, Sp Qtrs. 3.15-hr cl. Prereq: 301 or equiv or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit.

409 Advanced German Conversation UGRD 3
Practice in spoken German on topics of general interest and current events. * 3 cl. Prereq: 301 or equiv or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit.

420 Studies in German Literature I (750-1700) UGRD 5
Development of German literature in its historical, social, and philosophical context from earliest times to the Age of Enlightenment. 3.15-hr cl. Prereq: 201 or equiv, and one German literature course; or permission of instructor. Taught in German.
671 German Cinema to 1945  UGRD  5
Development of film from the late nineteenth century to the end of WWII; fundamental elements of film and film analysis, film as an art form, and other aspects of film.
2 3-hr cl. Prereq: Jr standing or above or permission of instructor.

672 German Cinema from 1945 to the Present  UGRD  5
Development of film in Germany from 1945 to period after reunification; fundamental elements of film and film analysis; developments in German film in light of cultural and historical frameworks.
2 3-hr cl. Prereq: Jr standing or above or permission of instructor.

693 Individual Studies  UGRD  1-15
Investigation of problems in various fields of Germanic studies.
Su, Au, Wi, Sp Qutrs. Prereq: Signature of undergraduate adviser or Graduate Studies Committee chair as applicable. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

694 Group Studies  UGRD  2-15
Investigation of minor problems in the various fields of German literature and philology.
Au, Wi, Sp Qutrs. Prereq: Permission of chairperson. Repeatable to a maximum of 10 cr hrs.

697 Study at a Foreign Institution  UGRD  1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qutrs. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This course is Progress (‘P’) graded. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

702 Introduction to the Methods and Tools of Literary Analysis  UGRD  5
Introduction to standard bibliographical aids, the MLA style for seminar and research papers, and the fundamental aspects of poetics, rhetoric, editorial principles, and stylistic analysis.
2 cl. Prereq: Grad standing or permission of instructor.

703 Introduction to Contemporary Approaches to Literature  UGRD  5
Primary current methodological and theoretical approaches to German literary study and brief consideration of their history: positivism, hermeneutics, formalism, Marxism, structuralism, post-structuralism.
2 cl. Prereq: Grad standing or permission of instructor.

705 Structure and Description of Modern Standard German  UGRD  5
Phonological, morphological, and syntactic systems of modern German; lexical changes, non-standard varieties of the language.
2 cl. Prereq: Grad standing or permission of instructor. Taught in German.

706 Forms of Contemporary German Usage  UGRD  5
Analytical and practical study of the ways in which German is written and spoken today (colloquial speech, business and scholarly German, etc.); emphasis on oral and written practice
2 cl. Prereq: Grad standing or permission of instructor or 401. Taught in German.

740 Development of German Narrative prose  UGRD  5
The novel, Novelle, short story, and other forms of German prose: historical overview, theory, and selected primary texts as illustration.
2 cl. Prereq: Grad standing or permission of instructor.

741 Development of German Drama  UGRD  5
History and theory of the drama in Germany; methods of drama analysis; interrelationship of drama, theatre, and audience; study of selected texts.
2 cl. Prereq: Grad standing or permission of instructor.

742 Development of German Poetry  UGRD  5
Elements of German poetry; close study of representative poets and poems since the Baroque.
2 cl. Prereq: Grad standing or permission of instructor.

750 Periods of German Literary History: 800-1400  UGRD  5
Study of major works chosen to present prominent themes and problems and/or important developments within the period; topic varies.
2 cl. Prereq: Grad standing or permission of instructor.

751 Periods of German Literary History: 1400-1700  UGRD  5
Study of major works chosen to present prominent themes and problems and/or important developments within the period; topic varies.
2 cl. Prereq: Grad standing or permission of instructor.

752 Periods of German Literary History: 1700-1850  UGRD  5
Study of major works chosen to present prominent themes and problems and/or important developments within the period; topic varies.
2 cl. Prereq: Grad standing or permission of instructor.

753 Periods of German Literary History: 1850- Present  UGRD  5
Study of major works chosen to present prominent themes and problems within the period; topic varies.
2 cl. Prereq: Grad standing or permission of instructor.

777 Colloquium in German Literature  UGRD  2-5
Selected topics, problems, and works in the various fields of German literature.
Arr. Prereq: Permission of chairperson. This course is graded S/U.

783H Honors Research  UGRD  1-10
Offers undergraduates with special aptitudes a greater opportunity for independent study than is possible in ordinary courses.
Au, Wi, Sp Qutrs. Prereq: 4th yr standing with a grade of A in at least half of the German courses 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. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

790 Foundations of Contemporary Critical Theory  UGRD  5
Interdisciplinary survey of the theoretical bases of the major contemporary approaches to the study of literature; readings in Marx, Freud, Derrida, Cixous, and others.
2 2-hr cl. Prereq: Jr or Sr and grad standing.

792 Interdepartmental Studies in the Humanities  GRAD  3-5
Two or more departments present colloquia on subjects of mutual interest; topics to be announced.
Su, Au, Wi, Sp Qutrs. Prereq: Grad standing or permission of instructor(s).

801 Middle High German  GRAD  5
Intensive introduction to Middle High German; comprehension and application of grammatical principles; selected texts for linguistic analysis.
2 cl.

806 History of the German Language  GRAD  5
Basic concepts of historical linguistics; the major factors of change in the history of German from Proto-Germanic to the present.
2 cl. Prereq: 801.

810 German Literary Criticism and Theory  GRAD  5
Historical overview and evaluation of critical methods; introduction to contemporary literary theories; the use-value of literary criticism.
2 cl.

840 College Teaching of German  GRAD  5
Methods and techniques for teaching German at the college level.
2 cl. Prereq: Permission of instructor. Intended for grad students in German.

850 German Proseminar  GRAD  5
Selected topics in German literature, language, and culture; seminar discussion format with oral and written reports.
Repeatable to a maximum of 20 cr hrs.

890 Interdepartmental Studies in Critical Theory  GRAD  5
Interdisciplinary study of a movement (phenomenology, deconstruction, etc.) or problem (intentionality, evaluation, etc.) in literary theory.
2 2-hr or 4 cl. Prereq: Background in critical theory recommended. Repeatable to a maximum of 10 cr hrs. Cross-listed in Comparative Studies, English, French, Spanish, and WGSSt.

893 Individual Studies  GRAD  2-5
Investigation of specific issues in German literature, culture, linguistics, and philosophy.
Su, Au, Wi, Sp Qutrs. Prereq: Permission of chair of Graduate Studies Committee. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

899 Interdepartmental Seminar  GRAD  3-5
Two or more departments present seminars on subjects of mutual interest; topics to be announced.
Prereq: Permission of instructor(s). Repeatable to a maximum of 15 cr hrs.

903 Graduate Student Teaching Apprenticeship  GRAD  5
Opportunity for advanced graduate students to plan and teach in conjunction with faculty member a course at 200 or higher level.
Au, Wi, Sp Qutrs. Prereq: A minimum of one year experience as GTA. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

960 Seminar in Modern German Literature:  GRAD  5
Topics vary in focus and methodology; emphasis may range from individual authors, works, or themes to theoretical or interdisciplinary issues; major research papers.
1 3-hr cl. Repeatable to a maximum of 45 cr hrs.

970 Seminar in Older German Literature to 1700  GRAD  5
Topics vary in focus and methodology; emphasis may range from individual authors, works, or themes to theoretical or interdisciplinary issues.
3 cl. Repeatable to a maximum of 45 cr hrs.

980 Seminar in Germanic Philology  GRAD  5
Topics from historical and comparative studies of older Germanic dialects; structure of New High German and contemporary German.
3 cl. Repeatable to a maximum of 45 cr hrs.

993 Individual Studies  GRAD  1-5
With the approval of the Graduate Studies Committee chair, doctoral students preparing for the candidacy exam may register for independent study.
Su, Au, Wi, Sp Qutrs. Prereq: Signature of Graduate Studies Committee chair. Repeatable to a maximum of 5 cr hrs. This course is graded S/U.

998 Research in German: Thesis  GRAD  1-18
Research for master's thesis.
Su, Au, Wi, Sp Qutrs. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.
Graduate School

501 Graduate Study and Academic Careers UGRD 1-5
Exploration of graduate study and academic careers.
Su Qtr. 1 hr d. Open only to SROP students. This course is graded S/U.

594 Group Studies UGRD 1-5
Group Studies. Su Qtr. Arr. Repeatable to a maximum of 15 or hrs. This course is graded S/U.

701 Preparing Future Faculty GRAD 1-3
Mentorship and professional development activities in conjunction with partner institutions.
Su, Su Term 1, Su Term 2, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 3 or hrs. Students must successfully complete application process and be admitted. Mentor matches are contingent upon availability. Students will make 2-4 visits to partner institution to meet with assigned mentor. In addition, are required to participate in on-campus workshops and meetings. This course is graded S/U.

889 Graduate Research or Field Study GRAD 0
For graduate students pursuing off-campus field experiences, study or research. Full-time enrollment equivalent.
Prereq: Permission of instructor. This course is graded S/U.

999 Research: Interdisciplinary GRAD 1-18
Interdisciplinary doctoral dissertation research approved by the Graduate School for one-of-a-kind programs. This course is graded S/U. Repeatable.

Greek

101 Elementary Ancient Greek I UGRD 5
Introduction to the language of the ancient Greek authors and the New Testament.
Au Qtr. 5 cl. Not open to students with 3 or more years of study in this language in high school, except by permission of dept. This course is available for EM credit. GEC for lang course. FL Admis Cond course.

102 Elementary Ancient Greek II UGRD 5
Elementary Ancient Greek II.
Wi Qtr. 5 cl. Prereq: 101. This course is available for EM credit. GEC for lang course. FL Admis Cond course.

103 Intermediate Ancient Greek I UGRD 5
Intermediate Ancient Greek I.
Sp Qtr. 5 cl. Prereq: 102. This course is available for EM credit. GEC for lang course.

104 Intermediate Ancient Greek II UGRD 5
Intermediate Ancient Greek II.
5 cl. Prereq: 103 or permission of instructor. This course is available for EM credit. GEC for lang course.

210 The Greek New Testament UGRD 5
* Wi Qtr. 5 cl. Prereq: Greek 104 or permission of instructor.

221 Attic Prose UGRD 5
Readings in Plato, Lysias, Xenophon, for example.
Au Qtr. 5 cl. Prereq: Greek 104.

222 Euripides UGRD 5
One tragedy will be read.
Wi Qtr. Prereq: Greek 104 or permission of instructor.

223 Homer UGRD 5
Selections from the Iliad or Odyssey.
* Sp Qtr. Prereq: Greek 104 or permission of instructor.

224 The Greek Historians UGRD 5
Readings from Herodotus, Thucydides or Xenophon.
Sp Qtr. Prereq: Greek 104 or permission of instructor.

225 Sophocles UGRD 5
Readings from the tragedies of Sophocles.
* 5 cl. Prereq: Greek 104 or permission of instructor.

293 Individual Studies UGRD 1-6
Intermediate readings in Greek literature.
Su, Au, Wi, Sp Qtrs. Prereq: 104 or equiv or written permission of dept. Repeatable to a maximum of 15 or hrs. This course is graded S/U.

604 Greek Historians UGRD 5
Comparative readings from Greek historical writers such as Herodotus, Thucydides, Xenophon, and Plutarch.
2 2-hr cl. Prereq: 2 courses at 200 level. with permission of instructor. Repeatable to a maximum of 10 or hrs.

605 Greek Tragedy UGRD 5
Readings in the tragedies of Aeschylus, Sophocles, and Euripides.
2 2-hr cl. Prereq: 2 courses at 200 level with permission of instructor. Repeatable to a maximum of 10 or hrs.

607 Greek Epic UGRD 5
Readings from Greek epic, including works of Homer, Hesiod, or Apollonius.
* 2 2-hr cl. Prereq: 2 courses at 200 level. with permission of instructor. Repeatable to a maximum of 10 or hrs.

608 Attic Oratory UGRD 5
Comparative readings in Attic orators, including Lysias, Demosthenes, and Aeschines.
2 2-hr cl. Prereq: 2 courses at 200 level. Not open to students with credit for 608.01, with permission of instructor. Repeatable to a maximum of 10 or hrs.

609 Readings in Plato UGRD 5
Readings in Plato.
5 cl. Prereq: 2 courses at 200 level.

610 Greek Comedy UGRD 5
Comparative readings in Greek comic authors, including Aristophanes and Menander.
2 2-hr cl. Prereq: 2 courses at 200 level. with permission of instructor. Repeatable to a maximum of 10 or hrs.

611 Greek Hymn, Lyric, and Elegy UGRD 5
Readings in Greek hymns and lyrics, including texts by Hesiod, Sappho, and Pindar.
2 2-hr cl. Prereq: 2 courses at 200 level. with permission of instructor. Repeatable to a maximum of 10 or hrs.

612 Attic Prose Composition UGRD 5
Review of elementary syntax leading to composition of sentences and short connected passages; concurrent readings from Lysias or Xenophon.
* 3 cl, 2 hr arr. Prereq: At least 1 course at 600 level.

660 Special Topics in Greek Literature UGRD 5
Extensive reading from masterpieces of Greek literature; topic varies.
Wi Qtr. 2 2-hr cl. Prereq: Two courses at the 200 level. Repeatable to a maximum of 20 or hrs.

693 Individual Studies UGRD 1-6
Passages for reading and topics for investigation will be selected to meet the needs of individual students.
Su, Au, Wi, Sp Qtrs. Prereq: 2 courses at 600 level, or permission of instructor. Repeatable to a maximum of 15 or hrs. This course is graded S/U.

694 Group Studies UGRD 1-6
Group Studies.
Au, Sp Qtrs. Prereq: 4 courses more advanced than 104, or permission of chairperson. Repeatable to a maximum of 15 or hrs.

697 Study at a Foreign Institution UGRD 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 or hrs. This course is Progress (P) graded. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

701 Survey of Greek Literature: Epic/Archaic Eras UGRD 5
A survey of authors representative of the earliest period of Greek literature, with discussion of historical background and methods of criticism.
* Au Qtr. 2 2-hr cl. Prereq: Two 200-level Greek courses and permission of instructor; or grad standing. Not open to students with credit for 601.

702 Survey of Greek Literature: Classical Age UGRD 5
A survey of authors representative of the Classical period of Greek literature, with discussion of historical background and methods of criticism.
* Wi Qtr. 2 2-hr cl. Prereq: Two 200-level Greek courses and permission of instructor; or grad standing. Not open to students with credit for 602.

703 Survey of Greek Literature: Hellenistic Era UGRD 5
A survey of authors representative of the Hellenistic period of Greek literature, with discussion of historical background and methods of criticism.
* Sp Qtr. 2 2-hr cl. Prereq: Two 200-level Greek courses and permission of instructor; or grad standing. Not open to students with credit for 603.

783H Honors Research UGRD 3-5
A program of study arranged for each student with individual conferences, reports, and an honors thesis.
Su, Wi, Sp Qtrs. Arr. Prereq: 4th yr standing with a grade of A in at least half of the Greek courses taken and with an average of B in the remainder; written permission of instructor under whose supervision the work is to be completed and the ASC Honors Committee; at least 2 qtrs are required of candidates for the degree BA with distinction in Greek. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 or hrs. This course is graded S/U.

802 Advanced Greek Prose Composition GRAD 5
Weekly exercises in continuous prose composition with concurrent readings from Greek prose authors.
* Wi Qtr. 2 cl. Prereq: 612 or permission of instructor.
### Greek

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>813</td>
<td>Studies in the Greek Orators</td>
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<tr>
<td>818</td>
<td>Studies in the Greek Historians</td>
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<tr>
<td>836</td>
<td>Studies in Hellenistic Literature</td>
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<tr>
<td>840</td>
<td>Studies in Greek Drama</td>
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<td>844</td>
<td>Studies in the Greek Philosophers</td>
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<td>845</td>
<td>Studies in Greek Epic</td>
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<tr>
<td>880</td>
<td>Topics in Greek Antiquity</td>
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<tr>
<td>893</td>
<td>Individual Studies</td>
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<td>894</td>
<td>Group Studies</td>
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<td>995</td>
<td>Seminar</td>
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<td>996</td>
<td>Research</td>
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### Hausa

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<tr>
<td>101</td>
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<tr>
<td>102</td>
<td>Elementary Hausa II</td>
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<td>103</td>
<td>Intermediate Hausa I</td>
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<td>104</td>
<td>Intermediate Hausa II</td>
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### Health Information Management And Systems

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<th>Course Code</th>
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<tr>
<td>210</td>
<td>Careers in Health Information and Informatics</td>
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### Other Courses

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<tr>
<td>500</td>
<td>Medical Terminology</td>
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<tr>
<td>520</td>
<td>Clinical Documentation, Storage, and Retrieval Systems</td>
<td>5</td>
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<tr>
<td>525</td>
<td>Organizational Analysis of Health Care Facilities</td>
<td>3</td>
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<tr>
<td>533</td>
<td>Clinical Coding Systems</td>
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<td>536</td>
<td>Ambulatory Clinical Coding Systems</td>
<td>3</td>
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<tr>
<td>537</td>
<td>Clinical Data Management</td>
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<td>540</td>
<td>Health Care Statistics and Data Analysis</td>
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<tr>
<td>544</td>
<td>Legal Principles for Health Managers</td>
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<td>549</td>
<td>Legal Concepts in Health Care and Information Services</td>
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<td>550</td>
<td>Healthcare Reimbursement Systems</td>
<td>3</td>
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<tr>
<td>559</td>
<td>Clinical Technical Affiliation</td>
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<tr>
<td>560</td>
<td>Principles of organizational design and behavior with emphasis on managing health information services</td>
<td>3</td>
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<tr>
<td>561</td>
<td>Quality Management in Health Care</td>
<td>4</td>
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<tr>
<td>564</td>
<td>Management of Health Information Services</td>
<td>3</td>
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<td>565</td>
<td>Management Control Systems for Health Information Services</td>
<td>3</td>
</tr>
<tr>
<td>566</td>
<td>Microcomputer Applications in the Health Sciences</td>
<td>3</td>
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### Notes

- **535**: Not open to native speakers of this language through regular course enrollment or EM credit. E535 may be available for honors embedded experience.
- **536**: Not open to students with credit for 544.
- **544**: E535 may be available for honors embedded experience.
650 Health Care Information Systems UGRD 3
Survey of patient, administrative and financial information systems in health care, and the technologies and management practices to support them.
Sp Qtr. 2-3 hr. cr. Cross-listed in Allied Medicine. E650 may be available for honors embedded experience.

654 Health Information Systems I: Planning and Analysis UGRD 3
Focus on structured systems analysis techniques including database design for health information systems.
Au Qtr. 3 cr. Prereq: 648, AllMed 650, or written permission of instructor. E654 may be available for honors embedded experience.

655 Health Information Systems II: Design and Implementation UGRD 3
Continuation of HIMS 654, focus is on design and implementation of a prototype health information systems application.
Wi Qtr. 1-3 hr. cr. Prereq: 654 or written permission of instructor. E655 may be available for honors embedded experience.

660 Healthcare Financial Management UGRD 3
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.
Wi Qtr. 1-2 hr. cr. 1-2 hr. lab. Prereq: Enrollment in HIMS. AMP or grad standing in AMP or permission of instructor. Cross-listed in AMP.

667 Documentation and Information Services in Non-Acute Care UGRD 3
Study of documentation and information services requirements in community, long term care, mental health, ambulatory care, and other non-acute care settings.
Wi Qtr. 2-1 cr. 1-6 cr. Prereq: S20 or written permission of instructor.

689 Clinical Management Affiliation UGRD 1-10
Application of managerial techniques in the organization and administration of health information services.
Su, Au, Wi, Sp Qtrs. 32-40 hrs clinical study wks. Prereq: 589. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

693 Individual Studies UGRD 1-5
Problems in health information management not covered in regular course offerings.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

695 Seminar in Health Information Management and Systems UGRD 1-4
Selected topics in health information management and systems.
Su, Au, Wi, Sp Qtrs. 1-4 cr. Prereq: Enrollment in HIMS or grad standing. Repeatable to a maximum of 12 or hrs.

700 Human Factors in Healthcare GRAD 3
Introduction to human factors theories and concepts used in developing interventions to improve patient safety, reduce medical errors and implement electronic healthcare information systems.
Prereq: Graduate standing in AMP or permission of instructor.

Hebrew

101 Elementary Hebrew I UGRD 5
Conversation, reading, writing, vocabulary building, phonetics, and grammar.
Au, Wi, Sp Qtrs. 5 cr. Not open 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. This course is available for EM credit. GEC for lang course. FL Admis Cond course.

102 Elementary Hebrew II UGRD 5
Reading of modified passages from modern Hebrew literature supplemented with additional study of grammar.
Au, Wi, Sp Qtrs. 5 cr. Prereq: 101. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course. FL Admis Cond course.

103 Intermediate Hebrew I UGRD 5
Reading of passages from various periods of Hebrew literature; review of salient points of elementary grammar and introduction to elements of classical Hebrew.
Au, Wi, Sp Qtrs. 5 cr. Prereq: 102. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course.

104 Intermediate Hebrew II UGRD 5
Reading of modern Hebrew short stories, poems, and essays; special emphasis on oral practice and Hebrew idioms.
Au, Wi, Sp Qtrs. 5 cr. Prereq: 103. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course.

205 Modern Hebrew Grammar, Conversation, and Composition UGRD 5
Development of communication skills in Modern Hebrew; special emphasis on using new grammatical skills in advanced forms of composition and conversation.
Prereq: 104 or permission of instructor. Not open to native speakers through regular course enrollment or EM credit.

216 The Medieval Jewish Experience UGRD 5
A survey of ten centuries of medieval Jewish culture from the rise of Islam to the death of Shabbetai Zvi, the false Messiah (1676). Not open to students with credit for Medieval 216. Cross-listed in Medieval and Renaissance Studies. GEC arts and humanities and ideas and social diversity - international issues (Global) course.

241 Culture of Contemporary Israel UGRD 5
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. 241H (honors) may be available. GEC arts and humanities and ideas and social diversity - international issues (Global) course.

245 Israeli Film & Society UGRD 5
An examination of the aesthetic and thematic dimensions of Israeli films and their impact on Israeli society.
Sp Qtr. Prereq: English 110. GEC arts and humanities and VPA course.

246 Biblical and Post-Biblical Hebrew Literature in Translation UGRD 5
Reading and analysis of selected chapters from the Hebrew scriptures and post-biblical Hebrew writings representative of major historical, cultural, and literary trends. 246H (honors) may be available. Prereq: 110 or 111 or equiv. Not open to students with credit for 273. GEC arts and humanities and ideas and social diversity - international issues (Global) course.

270 Biblical and Post-Biblical Hebrew Literature in Translation UGRD 5
Introduction to human factors theories and concepts used in developing interventions to improve patient safety, reduce medical errors and implement electronic healthcare information systems.

271 Medieval Hebrew Literature in Translation UGRD 3
Post-biblical and medieval Hebrew literature from the Near East, North Africa, and Europe.
"^" Prereq: English 110 or 111 or equiv. Not open to students with credit for 272.

272 Modern Hebrew Literature in Translation UGRD 5
Modern Hebrew literature; works of major writers from the middle of the 18th century to the present; emphasis on European literary influences. 272H (honors) may be available. Prereq: 110 or equiv. Not open to students with credit for 271. GEC arts and humanities and ideas and social diversity - international issues (Global) course.

273 Prophecy in the Bible and Post-Biblical Literature UGRD 5
The dynamics of Israelite prophecy and apocalyptic in the context of ancient Near Eastern culture.
GEC arts and humanities and ideas and social diversity - international issues (Global) course.

274 Women in Biblical and Post-Biblical Literature UGRD 5
An examination of the social, legal, and religious position of women as they appear in the Hebrew scriptures and Rabbinic writings.
Prereq: English 110 or 111 or equiv. Not open to students with credit for 274. Taught in English. GEC arts and humanities and ideas and social diversity - international issues (Global) course.

276 The Jewish Mystical Tradition UGRD 5
The history of Jewish mysticism from antiquity to the present, with emphasis on its implications for the comparative study of religious experience. 276H (honors) may be available. Prereq: English 110, 110.01, 110.01, 110.03 or equiv. Not open to students with credit for RelStds or CompStds 376. Cross-listed in Comparative Studies. GEC arts and humanities and ideas and social diversity - international issues (Global) course.

277 Biblical and Post-Biblical Wisdom Literature UGRD 5
An examination of the various ideas, themes, attitudes, implications, and genres of biblical and post-biblical wisdom literature.
Prereq: English 110 or 111 or equiv. GEC arts and humanities and ideas and social diversity - international issues (Global) course.

279 The World of the Rabbis UGRD 5
Examination of the origins, literature, and religious values of the movement of intellectuals who remade the culture of Judaism in the 2nd through 6th centuries.
Prereq: English 110 or equiv. GEC arts and humanities and ideas course.
226 Hebrew

401 Review of Grammar and Composition UGRD 5

402 Intermediate Hebrew Conversation and Composition UGRD 5
Vocabulary building, practice in speaking Hebrew, conversation and composition dealing with social and everyday aspects of Israeli life. Prereq: 104 or permission of instructor.

421 Modern Hebrew Short Story UGRD 5
Reading and discussion of masterpieces of modern Hebrew short stories in the 19th and 20th centuries. Prereq: 104 or permission of instructor.

422 Modern Hebrew Poetry UGRD 5
Reading and discussion of masterpieces of modern Hebrew poetry in the 19th and 20th centuries. Prereq: 104 or permission of instructor.

601 Biblical Hebrew Grammar UGRD 5
Introduction to the phonology, morphology, and syntax of the Biblical Hebrew idiom. Prereq: 104 or permission of instructor.

611 History of the Hebrew Language UGRD 5
Genealogical and typological relations within the Semitic family, a survey of Biblical, Mishnaic, and modern Hebrew. Prereq: 104 or permission of instructor. GEC third writing course.

620 Introduction to Hebrew Literary and Cultural Texts UGRD 5
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. Prereq: 205 or permission of instructor.

621 The Bible as Literature: Selected Readings UGRD 5
Critical study of basic issues in the language and analysis of biblical texts. Prereq: 421 or 422. Repeatable to a maximum of 20 or hrs.

623 Readings in Rabbincic Literature UGRD 5
Study of selected texts and issues in Rabbincic literature, and discussions of the methods by which they are studied. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

671 The Problem of Evil in Biblical and Post-Biblical Literature UGRD 5
Study of the vexing problem of evil; the seeming contradiction between tradition and experience; extensive readings and discussions of appropriate biblical and post-biblical materials. Prereq: 273 or 274 or equiv or permission of instructor. Given in English, but grad students and undergrad Hebrew majors will read the texts in the original Hebrew.

676 Studies in Biblical Law UGRD 5
Examination of the various biblical corpora of laws within the context of a great body of legal collections which extended throughout the ancient Near East. Prereq: 370, grad standing, or permission of instructor. Taught in English.

693 Individual Studies UGRD 1-5
Individual Studies. Su, Au, Wi, Sp Qtr. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

694 Group Studies UGRD 1-15
Group Studies. Au, Wi, Sp Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

697 Study at a Foreign Institution UGRD 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Su, Au, Wi, Sp Qtr. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This course is Progress (P) graded. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

721 Studies in Hebrew Poetry UGRD 5
Advanced study of specific poetic periods, figures, and/or topics involving extensive readings and discussions of appropriate primary and secondary materials. Prereq: 10 hrs of Hebrew at the 400 level and above, or equiv. Repeatable to a maximum of 15 cr hrs.

722 Studies in Hebrew Prose UGRD 5
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. Su, Au, Wi, Sp Qtr. Prereq: 10 hrs of Hebrew at the 400 level and above, or equiv. Repeatable to a maximum of 15 cr hrs.

738H Honors Research UGRD 3-5
Offers students with special aptitudes a greater opportunity to do independent study than is possible in the ordinary course; work in conference, library, or phonetics laboratory. Prereq: English 100.02 or 100.03. This course is available for EM credit. GEC social diversity - international issues (Western) and historical survey course. SS Admis Cond course.

801 Teaching Hebrew at the College Level GRAD 5
Methods and techniques for teaching Hebrew at the college level. Prereq: 2 wk intensive workshop followed by 1.2-hr wkl cl. Prereq: Teaching assoc in NELC or permission of instructor. For students enrolled in this course, the minimum number of hrs required for graduation is increased by 5 cr hrs.

811 Seminar in Hebrew Studies GRAD 5
Intensive investigation of a selected topic or problem in Hebrew linguistics, philology, literature, or literary culture. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

998 Research in Hebrew GRAD 1-25
Research for thesis purposes only. Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

Hindi

101 Elementary Hindi I UGRD 5
Study of Hindi language, with appropriate cultural background; development of listening, reading, speaking, and writing skills. Prereq: 10 hrs of Hindi at the 400 level and above, or equiv. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

102 Elementary Hindi II UGRD 5
Continued study of Hindi language, with appropriate cultural background; development of listening, reading, speaking, and writing skills. Prereq: 101 or permission of instructor. Prereq: Permission of instructor. Not open to students with credit for NELC 294A (Au 02; Au 03; Au 04). GEC for lang course.

103 Elementary Hindi III UGRD 5
Continued study of Hindi language, with appropriate cultural background; development of listening, reading, speaking, and writing skills. Prereq: 102 or permission of instructor. Not open to students with credit for NELC 294A (Sp 03; Sp 04; Sp 05). GEC for lang course.

104 Intermediate Hindi I UGRD 5
Continued study on Hindi language, with appropriate cultural background; development of listening, reading, speaking, and writing skills. Prereq: 103 or permission of instructor. Not open to students with credit for NELC 294A (Au 03). GEC for lang course.

201 Intermediate Hindi II UGRD 5
Continued study of Hindi, with appropriate cultural background; further development of listening reading, speaking and writing skills. Prereq: 104 or permission of instructor. Prereq: Permission of instructor. Not open to students with credit for Hindi 294, WI10.

294A (Au 02; Au 03; Au 04). GEC for lang course.

294 Group Studies UGRD 5
Course topics may vary on subjects not otherwise covered by Hindi courses. Au, Wi, Sp Qtr. Prereq: Permission of instructor or department. Repeatable to a maximum of 10 cr hrs.

111 Western Civilization: Antiquity to the Seventeenth Century UGRD 5
Ancient civilizations (Near East, Greece, Rome); barbarian invasions; medieval civilizations (Byzantium, Islam, Europe); Renaissance and Reformation. 111H (honors) may be available. Prereq or concur: English 110 or 111. Not open to students with credit for 100.01. This course is available for EM credit. GEC social diversity - international issues (Western) and historical survey course. SS Admis Cond course.

112 Western Civilization: Seventeenth Century through Modern Times UGRD 5
Political, scientific, and industrial revolutions; nationalism; the two world wars; decline of empires; the cold war. 112H (honors) may be available. Prereq or concur: English 110.xx. Not open to students with credit for 100.02 or 100.03. This course is available for EM credit. GEC social diversity - international issues (Western) and historical survey course. SS Admis Cond course.

121 African Civilizations to 1870 UGRD 5
Exploration of the political, social, and economic history of precolonial African civilizations, using a variety of interdisciplinary approaches and materials. Prereq: English 110 or 111 or equiv. Not open to students with credit for AFAM/AF 121. Cross-listed in African-American and African Studies. GEC social diversity - international issues (Global) and historical survey course.
122 African Civilizations, 1870 to the Present UGRD 5
Exploration of the political, social, and economic history of the colonial and independent African countries, using a variety of interdisciplinary approaches and materials. Prereq or concour: English 110. Not open to students with credit for AfrAmASt 122. Cross-listed in African-American and African Studies. GEC social diversity - international issues (Global) and historical survey course.

141 History of East Asia in the Pre-modern Era UGRD 5
Introduction to the societies and cultures of pre-modern China, Korea, and Japan; the countries that make up the geographical and cultural unit of East Asia. Prereq or concour: English 110. Not open to students with credit for 131. GEC social diversity - international issues (Global) and historical survey course.

142 History of East Asia in the Modern Era UGRD 5
Introduction to the transformation of societies and cultures of modern China, Korea, and Japan from the 17th century to the present. Prereq or concour: English 110. Not open to students with credit for 132. GEC historical survey and international issues - global course.

151 American Civilization to 1877 UGRD 5
The political, constitutional, social, and economic development of the United States from the colonial period through the era of Reconstruction. Prereq or concour: English 110 or 111. Not open to students with credit for 150.01. This course is available for EM credit. GEC historical survey course. SS Admis Cond course.

152 American Civilization since 1877 UGRD 5
The political, constitutional, social, and economic development of the United States from the era of Reconstruction to the present. Prereq or concour: English 110 or 111. Not open to students with credit for 150.02. This course is available for EM credit. GEC historical survey course. SS Admis Cond course.

152H American Civilization since 1877 UGRD 5
The political, constitutional, social, and economic development of the United States from the era of Reconstruction to the present. Prereq or concour: English 110 or 111. Not open to students with credit for 150.02. This course is available for EM credit. GEC historical survey course. SS Admis Cond course.

171 Latin American Civilizations to 1825 UGRD 5
Latin American political, social, economic, and cultural history from Pre-Columbian times to independence (1825) focusing on imperialism, religion, minorities, war, and rebellion. 171H (honors) may be available. Prereq or concour: English 110 or 111. Not open to students with credit for 150.03 or 161. GEC social diversity - international issues (Global) and historical survey course.

172 Latin American Civilizations since 1825 UGRD 5
Latin American political, social, economic, and cultural history from independence (1825) to the present focusing on neo-colonialism, instability, underdevelopment, militarism, and minorities. 172H (honors) may be available. Prereq or concour: English 110 or 111. Not open to students with credit for 150.03 or 161. GEC social diversity - international issues (Global) and historical survey course.

172H Latin American Civilizations since 1825 UGRD 5
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 concour: English 110 or 111 and honors program or by permission of department or instructor. Not open to students with credit for 150.03 or 161 or 240. GEC historical survey course.

181 World History to 1500 UGRD 5
History of the human community to 1500, primary emphasis on history of civilizations, and secondary emphasis on patterns of regional and hemispheric integration. Prereq: English 110 or 110.01 or 110.02 or 110.03 or 111 or permission of instructor. Not open to students with credit for 200.01. GEC social diversity - international issues (Global) and historical survey course. E181 may be available for honors embedded experience at the regional campuses.

182 World History, 1500 to Present UGRD 5
History of the human community from 1500 to the present, primary emphasis on processes of global integration, and secondary emphasis on comparitive civilization. Prereq or concour: English 110 or 111. Not open to students with credit for 200.02. GEC social diversity - international issues (Global) and historical survey course.

301 Introduction to Ancient Mediterranean Civilizations UGRD 5
Comparative historical analysis of ancient Mediterranean civilizations; emphasis on Greek and Roman societies, urbanism, elites, literature, arts, from the Bronze Age to Fall of Rome. Prereq: English 110 or 111 or concouring English 110 or 111. Not open to students with credit for 110.01 or 201. SS Admis Cond course.

301H Introduction to Ancient Mediterranean Civilizations UGRD 5
Comparative historical analysis of ancient Mediterranean civilizations; emphasis on Greek and Roman societies, urbanism, elites, literature, arts, from the Bronze Age to Fall of Rome. Prereq: English 110.xx pre- or co-requisite; Honors standing. Not open to students with credit for 110.01, 201, or 301.

306 Classical Archaeology UGRD 5
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: English 110 or 111 or concouring English 110 or 111. Not open to students with credit for 240. Classics 240, or HistArt 240. Cross-listed as Classics 240 and HistArt 240. GEC arts and hums cultures and ideas and social diversity - international issues (Western) course.

307 World War II UGRD 5
Survey of the causes, conduct and consequences of the Second World War. Prereq: English 110 or 111 or concouring English 110 or 111. Not open to students with credit for 281. SS Admis Cond course.

308 The Vietnam War UGRD 5
An examination of the causes, conduct, and effects of the revolutionary war in Vietnam from 1945 to 1975. Prereq: English 110 or 111 or concouring English 110 or 111. Not open to students with credit for 282.

309 The Sixties UGRD 5
Studies tumultuous period involving U.S. economic and social change, liberal and conservative politics, Civil rights, social movements, counter-culture, and Vietnam in historical and world contexts. Prereq: English 110 or 111 or concouring English 110 or 111.

310 History of Ohio UGRD 5
A general survey of state history-social, economic, religious, and political-from the Indian period to the present time. Not open to students with credit for 683.

311 World War I, 1914-1918 UGRD 5
Exploration of the causes, conduct, and consequences of the First World War in a global context. Prereq: English 110 or 111. GEC historical survey course.

312 Introduction to Modern Europe UGRD 5
Examination of selected major themes in European history from the French Revolution to the present. Prereq: English 110 or 111 or concouring English 110 or 111. GEC social diversity in the US and historical survey course.

322 Natives and Newcomers: Immigration and Migration in American History UGRD 5
General survey of U.S. immigration and migration history from pre-colonial times to the present. Topics include cultural contact, economic relations, citizenship, politics, family and sexuality. Prereq: English 110.xx. GEC social diversity in the US and historical survey course.

322H Natives and Newcomers: U.S. Immigration and Migration UGRD 5
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: English 110. Not open to students with credit for WGSS 322H. Cross-listed in WGSSt. GEC social diversity in the US and historical survey course.

323.01 History of African-Americans in the Age of Slavery UGRD 5
Origins of modern slavery; its development in the US: the evolution of African-American life and culture from 1619 to the end of the Civil War. Not open to students with credit for 223 or 260, or AfrAmASt 223 or 323.01. Cross-listed in African-American and African Studies.

323.02 History of African-Americans from Emancipation to the Present UGRD 5
The rise of debt peonage among blacks; the formation of the northern ghetto; the Civil Rights Movement and beyond. Not open to students with credit for 224 or 260, or AfrAmASt 224, 238, or 323.02. Cross-listed in African-American and African Studies.

324 Introduction to U.S. Latina/Latino History UGRD 5
General survey of Latina/o history in the U.S. Topics include conquest and colonization, immigration, labor activism, education, politics, popular culture and social movements. Prereq: English 110.01 or 110.02 or 110.03. GEC historical survey and soc diversity in the US course.

325 Introduction to Women's History: The American Experience UGRD 5
American women from pre-European-settlement to the present; experiences of Native American, African American, Mexican American, Puerto Rican, Asian American, Jewish, Appalachian, working-class, and lesbian women. Prereq: English 110 or 111 or concouring English 110 or 111. Not open to students with credit for 237. SS Admis Cond course. GEC social diversity in the US course.

325H Introduction to Women's History: The American Experience UGRD 5
American women from pre-European-settlement to the present; experiences of Native American, African American, Mexican American, Puerto Rican, Asian American, Jewish, Appalachian, working-class, and lesbian women. Prereq: English 110 or 111 or concouring English 110 or 111; honors program or permission of department or instructor. Not open to students with credit for 237. SS Admis Cond course. GEC social diversity in the US course.
228 History

326 History of Modern Sexualities UGRD 5
Introduction to the major issues associated with the ways different cultures have identified, regulated, and thought about sexuality from the eighteenth century to the present.
Prereq: English 110 or 111 or concurring English 110 or 111.

330.01 Introduction to Jewish Civilization: Ancient and Medieval Jewish Civilization UGRD 5
Jews and Judaism from remote antiquity to the 15th century A.D.
Not open to students with credit for 251. SS Admis Cond course.
Prereq: English 110 or 111 or concurring English 110 or 111. GEC arts and hums cultures and ideas and social diversity - international issues (Global) course.

330.02 Introduction to Jewish Civilization: Modern Jewish Civilization UGRD 5
Jews and Judaism from the 15th century to the present.
Prereq: English 110 or 111 or concurring English 110 or 111. Not open to students with credit for 252. SS Admis Cond course.

331 The Holocaust UGRD 5
The historical background of the Holocaust; dimensions of destruction; world response; post war trials; moral and philosophical issues.
Prereq: English 110 or 111 or concurring English 110 or 111. No credit for 254. SS Admis Cond course.

332 Jews in American Film UGRD 5
A study of how modern Jews appear in film compared with historical reality.
Prereq: English 110 or 111 or concurring English 110 or 111.

333 History of Antisemitism: From the Enlightenment to the Present Day UGRD 5
Examines the role of antisemitism in history. Considers the comparative historical contexts that shaped intolerance and exclusionary violence towards Jews and minorities.
2 2-hr cl. Prereq: English 110 or 111 or concurring English 110 or 111.

334 History of Zionism and Modern Israel UGRD 5
The history of the Zionist movement and social, religious, cultural, and political developments in the Israeli state.

336 Introduction to Russian Civilization UGRD 5
A survey of Russian civilization from earliest times to 1917: geography, peoples, culture, social, political, and religious institutions, and the impact of Westernization.
Prereq: English 110 or 111 or concurring English 110 or 111. Not open to students with credit for 220. SS Admis Cond course.

340 Islam, Politics, and Society in History UGRD 5
Elaboration of prophetic message of Islam into governing principles of Islamic polity and society; evolution of these principles over the centuries.
Prereq: English 110 or 111 or concurring English 110 or 111. Not open to students with credit for 256. SS Admis Cond course.

341 The Silk Road: Commerce and Culture in Eurasia 200 BCE-1498 CE UGRD 5
A study of the commercial and cultural relations among Chinese, Indian, Iranian, and Roman/ Islamic civilizations.
Prereq or concord: English 110.xx.

342 Foundations of Chinese Civilization UGRD 5
A history of early China, this course surveys Confucian, Daoist, and Buddhist teachings and the foundational institutions of Imperial China through the Tang (618-907).
Prereq: English 110 or 111 or concurring English 110 or 111.

343 Islamic Central Asia UGRD 5
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: English 110 or 111 or concurring English 110 or 111.

346 Introduction to Asian American History UGRD 5
A survey of the Asian American experience in the United States, from the mid-19th century to the present.
Prereq: English 110 or 111 or concurring English 110 or 111. GEC arts and hums cultures and ideas and social diversity in the US course.

350 History of Modern Africa UGRD 5
General survey of political, economic, and social developments in colonial and post-independence Africa.
Prereq: English 110 or 111 or concurring English 110 or 111. Not open to students with credit for AAMAS 350. Cross-listed in African-American and African Studies.

355 History of Afghanistan UGRD 5
This course will introduce students to Afghan society, its historical foundations, and the challenges that confront it.
Prereq: English 110.

360 Scientific Revolutions in Their Social Context UGRD 5
Models of scientific innovation and study of selected examples of the great scientific revolutions: Copernican, Chemical, Darwinian, Quantum, Genetic, and others.
Prereq: English 110 or 111 or concurring English 110 or 111. Not open to students with credit for 233. SS Admis Cond course.

362 History of Technology UGRD 5
Provides an introduction to the history of technology, by examining critical technological developments which have shaped the modern world, from railways to biotechnology.
Wi Qtr, 2-2 hr cl. Prereq: English 110 or 111 or concurring English 110 or 111.

366.01 Global Environmental History UGRD 5
Global overview of the ecological circumstances of the human condition in past time, stressing the relations among climate change, earth systems, technology, demography, and human cultural-economic revolutions.
Prereq: English 110 or 111 or concurring English 110 or 111. Not open to students with credit for 336 or 366. GEC arts and hums cultures and ideas and social diversity - international issues (Global) course.

366.02 American Environmental History UGRD 5
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: English 110 or 111 or concurring English 110 or 111. Not open to students with credit for 367.

368.01 Introduction to Native American History UGRD 5
An examination of selected events and issues in Native American history.
Prereq: English 110 or 111 or concurring English 110 or 111. Not open to students with credit for 368.

368.02 Native American Peoples of the Andes UGRD 5
Introductory survey of the history of the Native American peoples of the Andes from the Pre Columbian period to the present.
2 2-hr cl. Prereq: English 110 or 111 or concurring English 110 or 111.

375 History of American Criminal Justice UGRD 5
History of crime, criminal law, law enforcement agencies, prisons, and juvenile courts.
Prereq: English 110 or 111 or concurring English 110 or 111. Not open to students with credit for 286. SS Admis Cond course.

380 The History of War UGRD 5
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: English 110 or 111 or concurring English 110 or 111.

381 Wars of Empire UGRD 5
This course examines the means, methods, challenges and results of military encounters between modern imperial powers and indigenous forces they met on the battlefield.
2 2-hr cl. Prereq: English 110 or 111 or concurring English 110 or 111.

387 History of American Capitalism UGRD 5
Study of the evolution of "American capitalism" from pre-capitalist economies of the medieval period to the end of the 20th century.
Prereq: English 110 or 111 or concurring English 110 or 111. Not open to students with credit for 394. GEC historical survey course.

394 Group Studies UGRD 1-5
Groups of students are given an opportunity to pursue special studies not otherwise offered.
Su, Au, Wi, Sp QtrS. Repeatable to a maximum of 15 cr hrs.

398 Introduction to Historical Thought UGRD 5
Investigation of the methods historians use to understand the past.
Su, Au, Wi, Sp Qtrs. 2-2 hr cl. Prereq: English 110 or 111 or concurring English 110 or 111. Not open to students with credit for 302. Some classes will visit the Ohio Historical Society. A minimum grade of C in 398 is required for admission to the history major.

399H Introduction to Historical Thought UGRD 5
Investigation of the methods historians use to understand the past.
Su, Au, Wi, Sp Qtrs. 2-2 hr cl. Prereq: English 110 or 111 or concurring English 110 or 111; honors program or permission of department or instructor. Not open to students with credit for 302. Some classes will visit the Ohio Historical Society. A minimum grade of C in 398 is required for admission to the history major.

399H Introduction to Historical Research UGRD 5
Research strategies and techniques; topics will vary.
Prereq: 302 or 398 or permission of instructor.

489 Historical Internship UGRD 5
Internships will provide students with the opportunity to work on historical projects under the supervision of a practicing professional and a professor.

500 The Ancient Near East UGRD 5
The ancient history of Mesopotamia, Egypt, Anatolia, Persia, Israel, and the Levant to the establishment of the Persian Empire; readings from sources in translation.
Prereq: 5 hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 600.

501.01 Greek History: History of Archaic Greece UGRD 5
History of Greece from the early Stone Age communities to the end of the Greek-Persian conflicts, 479 B.C.; readings in the sources in translation.
Prereq: 5 or hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 601.01.
501.02 Greek History: History of Classical Greece UGRD 5
History of classical Greece from the foundation of the Delian Confederacy to the death of Alexander III; reading in the sources in translation.
Pre-req: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 601.02.

501.03 Greek History: History of the Eastern Mediterranean during the Bronze Age UGRD 5
Studies in the civilizations of Minoan Crete and Helladic/Mycenaean Greece in relationship with the Trojans, Hittites, Philistines, Cypriotes, Syrians, and Egyptians.
Pre-req: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 601.03.

502 Hellenistic Near East UGRD 5
The cultural history of the Achaemenid and Hellenistic kingdoms from c. 600 to 31 B.C., with emphasis upon Greek and Persian interaction in the Near East.
Pre-req: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 602.

503.01 Roman History: Roman Republic UGRD 5
A history of Rome from the founding to the fall of the Roman Republic; readings in ancient sources in translation.
Pre-req: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 603.01.

503.02 Roman History: Early Roman Empire, 31 B.C.-A.D. 180 UGRD 5
The Roman Empire at its height; internal politics, imperial administration, and religion; readings from sources in translation.
Pre-req: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 603.02.

503.03 Roman History: Later Roman Empire, A.D. 180-476 UGRD 5
Decline and fall of the Empire in the West; military, social, economic problems; religious conflicts; emergence of Germanic kingdoms; readings from sources in translation.
Pre-req: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 603.03.

504.01 The Ancient Mediterranean World: War in the Ancient Mediterranean World UGRD 5
An advanced survey of military history from the late Bronze Age to the fall of the Roman Empire in the West.
Pre-req: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 604.01.

504.02 The Ancient Mediterranean World: The Ancient Mediterranean City UGRD 5
Cities in the ancient Near East, Greece, and Rome, with an emphasis on their physical form and historical importance.
Pre-req: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 604.02.

505.01 Byzantine History: Early Byzantine Empire UGRD 5
History of Byzantium, A.D. 330-843, with emphasis on internal political and religious developments and the relationship between Byzantium and its neighbors.
Pre-req: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 607.01.

505.02 Byzantine History: Later Byzantine Empire UGRD 5
History of Byzantium, A.D. 843-1453, with emphasis on internal developments, the Crusades, the Fall of the City, and the legacy of Byzantium.
Pre-req: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 607.02.

506 History of Early Christianity UGRD 5
Christian origins and expansion to 600 A.D.; conflict with Roman Empire; internal dissent; basic institutions; Christian intellectuals; the imperial established church; monasticism; papacy; the barbarians and Christianity.
Pre-req: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 570.

507 History of Medieval Christianity UGRD 5
The late ancient and early medieval church; the papacy and the Carolingians; the Cluniac reform; the new monasticism; heresy; the problems of late medieval Christianity.
Pre-req: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 571.

508.01 Medieval Europe I: 300-1100 UGRD 5
Europe 300-1100; Roman decline, Christianization of Europe, barbarian invasions; Carolingian renaissance; early feudalism and manorialism; investiture contest; crusades; economic and intellectual revival.
Pre-req: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 626.04.

508.02 Medieval Europe II: 1100-1450 UGRD 5
Europe 1100-1500; the 12th-century Renaissance; classical feudalism; rise of Christendom; the great economic revival; universities and scholasticism; religious dissent; and 14th-century crises.
Pre-req: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 510 or 606.05.

508.03 Medieval England UGRD 5
England from the Roman conquest to 1485; Anglo-Saxon society and institutions; the Norman conquest; law and Parliament; social, intellectual, and economic growth of the English people.
Pre-req: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 630.

509.01 Italian Renaissance: 1400s, Communal Age to Quattrocento UGRD 5
The literary, artistic, and intellectual achievements primarily of Renaissance Italy against the background of economic, political, and social developments in Western Europe. Beginnings and flourishing of the Italian Renaissance, from the era of independent communes to the quattrocento.
Pre-req: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 609.

509.02 Italian Renaissance: High Renaissance and Beyond UGRD 5
The literary, artistic, and intellectual achievements primarily of Renaissance Italy against the background of economic, political, and social developments in Western Europe. Climax of the Italian Renaissance in the era of Michelangelo and Machiavelli, and its eventual decline during the sixteenth century.
Pre-req: 10 cr hrs of history.

511 The Reformation UGRD 5
The rise and growth of Protestantism and the Catholic Reformation of the 16th century against the background of economic, political, and social developments in Western Europe.
Pre-req: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 610.

512.01 European History: Early Modern Europe, 1600-1775 UGRD 5
A study of the rise of the absolute state, the changing diplomatic alignments, and the Enlightenment.
Pre-req: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 612.

512.02 European History: French Revolution and Napoleon UGRD 5
The background of the Revolution; the social bases and political schisms of the first three Revolutionary governments, 1789-1795; the program and role of Napoleon.
Pre-req: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 613.

512.03 European History: Europe, 1815-1900 UGRD 5
Nationalism, the democratic movement, economic growth, imperialism, and cultural advance from the Congress of Vienna to World War I.
Pre-req: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 614.

512.04 European History: Europe 1900-1950 UGRD 5
The important events and issues in European history from 1900-1950.
Pre-req: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 615.

512.05 European History: Europe since 1950 UGRD 5
Europe since the disaster of the Second World War; recovery, decolonization, integration, creation of a new society, and search for identity.
Pre-req: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 634.

513.01 European Intellectual and Cultural History: The Age of Modernity in the 19th Century UGRD 5
Intellectual and cultural history in Europe in the 19th century with emphasis on historic events which marked the formation of historical consciousness in the 19th century.
Pre-req: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 622.01, or CompStd 513.01 or 622.01.

513.02 European Intellectual and Cultural History: The Age of Modernity in the 20th Century UGRD 5
Intellectual and cultural history in Europe in the 20th century with emphasis on historic events which marked the formation of historical consciousness in the 20th century.
Pre-req: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 622.02, or CompStd 513.02 or 622.02.

514.01 English History: Tudor and Stuart Britain, 1500-1700 UGRD 5
The religious, political, economic, imperial, and intellectual development of the English people from 1465 to 1714, with special attention to the constitutional struggles of the 17th century.
Pre-req: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 631.
230 History

514.02 English History: Britain in the 18th and 19th Centuries UGRD 5
An introduction to the political, economic and social history of Britain and the British empire from the eighteenth to early twentieth centuries.
Prereq: English 110 or 111 and junior or senior standing or Honors and Scholars or permission of instructor. Not open to students with credit for 632.

514.03 English History: England in the 20th Century UGRD 5
A study of Britain since 1900 with special emphasis on the rise of the Labour party and the development of the social welfare state.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 633.

515.01 French History: France, 1815-1914 UGRD 5
France's transformation from a rural, traditional society to a modern, industrial society, and the relation of this transformation to 19th-century political and intellectual movements.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 615.

515.02 French History: France in the 20th Century UGRD 5
The impact on France of two world wars, the depression and decolonization, with emphasis on the breakdown of the political system and the emergence of a new society from the wreckage of the old.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 616.

516 Modern Italy, 1848-Present UGRD 5
Introduction to the history of Italy from the Risorgimento to the present.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor.

517 Modern Greece UGRD 5
Greece from 1453 to the present; Turkish rule, War of Independence, emergence of the modern state, focus on political, social, and cultural developments.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 529.

518.01 German History: Germany in the 19th Century UGRD 5
Political, social, economic, and cultural developments from the Prussian reform movement to World War I, with emphasis on German unification and the origins of the war.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 618.01.

518.02 German History: Germany in the 20th Century UGRD 5
World War I; the Weimar period; Hitler and the Third Reich; and the two Germanies after 1945.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 618.02.

519.01 East Central Europe: Eastern Europe in the Nineteenth Century UGRD 5
A survey of the rise of nationalism and the emergence of nation-states in Eastern Europe from the early nineteenth century through World War One.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 626.01.

519.02 East Central Europe: East Central Europe since 1919 UGRD 5
Advanced survey of East European history from World War I to the post-communist era.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 626.03.

519.03 East Central Europe: Balkans from the Ottoman Conquest until World War I UGRD 5
An historical survey of southeastern European history from the Battle of Kosovo; the assassination of Archduke Franz-Ferdinand; political, social, economic, and cultural development; emphasis on Balkan peoples.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 626.02.

520.01 Science and Society: Early Modern Europe UGRD 5
Prereq: English 110.01 or 110.02 or 110.03 and rank 3 or permission of instructor.

520.02 Science and Society: Modern Europe UGRD 5
A survey of the history of science and its place and relationship to European society. Europe from the 18th and 20th centuries.
Prereq: English 110.01 or 110.02 or 110.03 and rank 3 or permission of instructor.

523 Women in the Western World: Ancient Civilization to the Industrial Revolution UGRD 5
Women and the economic, social, and political factors responsible for their status in society.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor.

524 Women in the Western World: The Industrial Revolution to the Present UGRD 5
A continuation of 523.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor.

525 Topics in Women's History UGRD 5
In-depth analysis of selected topics in American, European, and Third World women's history; topic varies by quarter. Repeatable to a maximum of 15 cr hrs.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor.

526 Historical Perspectives on Sexuality: Same Sex Sexuality in the Western World UGRD 5
History of same-sex love and sexuality from ancient times to the present.
Not open to students with credit for 620.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor.

527 History of the Family UGRD 5
Evolution of the family, primarily in Europe and the United States, with attention to minorities and cross-cultural comparisons.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 677.

528 Love in the Modern Western World UGRD 5
A survey of love in the literature, art, and philosophy of the Western World concentrating on the years since 1800.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor.

530.01 Jewish History: History of Ancient Israel UGRD 5
The rise of the Jewish nation and religion in the Ancient Near East; settlement in Canaan; the Israelite and Judean monarchies until their conquest by Assyria and Babylon.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 605.06.

530.02 Jewish History: Second Commonwealth UGRD 5
The restoration of Jewish statehood following the first Babylonian Exile and the history of Palestinian Jewry and of the Jewish Diaspora down to the 2nd Century A.D.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 605.01.

530.03 Jewish History: Jews in the Western World in Modern Times UGRD 5
Changing patterns of Jewish life since the Jews’ struggle for Emancipation; migration movements and the shift of Jewish centers in Europe and the New World.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 605.04.

530.04 Jewish History: The American Jewish Experience UGRD 5
The history of America's Jewish population and American Jewry's interaction with the world in which they lived.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor.

531.01 Topics in Jewish History: Messianahs and Messianism in Jewish History UGRD 5
The history of Jewish messianic idea and of Jewish messianic leadership from ancient to modern times.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 605.10.

531.02 Topics in Jewish History: Jews in the World of the Renaissance UGRD 5
An investigation of Jewish life and thought in the Christian and Muslim worlds during the Renaissance.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor.

531.03 Topics in Jewish History: Jewish Society at the Dawn of the Modern Age, 1600-1750 UGRD 5
An investigation of Jewish life and thought in the Christian and Muslim worlds during the early Modern era.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor.

532 History of Spain, 1469-Present UGRD 5
Unification of the thrones; the rise and fall of empire; rivalry with Portugal; Napoleon the Civil War; Franco and the Post-Franco Era.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 650.

533.01 Latin American History: Colonial Latin American History UGRD 5
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: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 651.01.

533.02 Latin American History: South America since Independence UGRD 5
Nation-building in the South American republics during the 19th and 20th centuries with special emphasis on Argentina and Brazil.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 651.02.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Notes</th>
</tr>
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<tbody>
<tr>
<td>533.06</td>
<td>Latin American History: Women in Latin America</td>
<td>5</td>
<td>UGRD</td>
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<td>The history of women in Latin America from the Conquest to the present.</td>
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<td>Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor.</td>
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<tr>
<td>534.01</td>
<td>History of Latin American Regions: Central America and the Caribbean since Independence</td>
<td>5</td>
<td>UGRD</td>
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<td>Political, economic, and cultural history of West Indies (Cuba, Haiti, Dominican Republic, etc.) and Central America (Panama, Guatemala, Nicaragua, etc.) and relations with United States. Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 533.03 or 651.03.</td>
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<tr>
<td>534.02</td>
<td>History of Latin American Countries and Regions: Brazil</td>
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<td>History of Brazil during colonial and independence periods with major emphasis on the 19th and 20th centuries. Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 533.04 or 651.06.</td>
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<tr>
<td>534.03</td>
<td>History of Latin American Countries and Regions: Mexico</td>
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<td>UGRD</td>
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<td>History of Mexico during precolonial, colonial, and independence periods with emphasis on the 19th and 20th centuries. Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 533.05 or 651.07.</td>
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<tr>
<td>534.04</td>
<td>History of Latin American Countries and Regions: Argentina</td>
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<td>UGRD</td>
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<td>Introduction of the history and problems of contemporary Argentina. Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor.</td>
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<td>534.08</td>
<td>History of Latin American Countries and Regions: The Jewish Experience in Latin America</td>
<td>5</td>
<td>UGRD</td>
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<td>Introduction to issues in the history of Jews in Latin America, including the role of the region as a refuge from source of anti-Semitism. Prereq: English 110.01, 110.02, 110.03, 110.04, 111 and Jr or Sr standing or honors or scholars or permission of instructor.</td>
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<td>536</td>
<td>History of Russia to 1725</td>
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<td>A survey from the origins of the Russian state to the end of the reign of Peter the Great. Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 535.</td>
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<td>537.01</td>
<td>History of Russia: Imperial Russia, 1725-1914</td>
<td>5</td>
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<td>A survey from the end of the reign of Peter the Great to the outbreak of World War I. Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 636.</td>
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<td>538</td>
<td>History of the Soviet Union</td>
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<td>Beginning with the background and events of the revolution of 1917, analysis of developments in Russian history from World War I to the present. Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 637.</td>
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<td>539</td>
<td>Siberia in World History</td>
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<td>UGRD</td>
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<td>Introduction to the history, geography, culture, ethic diversity, inter-communal relations, economy and strategic importance of Siberia in Eurasia's past and present. Prereq: English 110.01 or 110.02 or 110.03 or 111 and Jr or Sr standing or honors or scholars or permission of instructor.</td>
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<tr>
<td>540.01</td>
<td>Core Regions of Islamic Worlds: Islamic Society, 610-1258</td>
<td>5</td>
<td>UGRD</td>
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<td>Origins and early development of selected fundamental Islamic institutions in their historical and cultural context. Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 641.</td>
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<tr>
<td>540.02</td>
<td>Core Regions of Islamic Worlds: History of Iran</td>
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<td>UGRD</td>
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<td>A history of Iran in the Islamic period, focusing on nomadic-urban interaction and Iranian culture 2-2 1/2 cr. Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor.</td>
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<tr>
<td>540.03</td>
<td>Core Regions of Islamic Worlds: Ottoman Empire, 1300-1800</td>
<td>5</td>
<td>UGRD</td>
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<td>The Ottoman Empire from frontier warrior band to world power to &quot;Sick Man of Europe&quot;; factors in upsurge and decline; cultural interaction with the West. Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Prior course work on Middle Eastern history or Islamic culture is strongly recommended. Not open to students with credit for 642.</td>
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<tr>
<td>540.04</td>
<td>Core Regions of Islamic Worlds: Middle East in the 19th Century</td>
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<td>UGRD</td>
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<td>Modernization of the Middle East, from the early autocratic modernizers to the 19th century; economic, social, political, and intellectual transformations; modern Middle East in world perspective. Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Prior course work on Middle Eastern history or Islamic culture is strongly recommended. Not open to students with credit for 644.</td>
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<tr>
<td>540.05</td>
<td>Core Regions of Islamic Worlds: Middle East in the 20th Century</td>
<td>5</td>
<td>UGRD</td>
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<td>Modernization of the Middle East in the 20th century. Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Prior course work on Middle Eastern history or Islamic culture is strongly recommended. Not open to students with credit for 644.</td>
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<tr>
<td>541.01</td>
<td>Wider Islamic World: Islamic Spain and North Africa</td>
<td>5</td>
<td>UGRD</td>
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<td>Major problems in history and culture of Islamic Spain (712-1492) and North Africa (641-present), including Egypt; special emphasis on nomadism and revivialism. Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 640.</td>
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<td>541.02</td>
<td>Wider Islamic World: History of Islam in Africa</td>
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<td>UGRD</td>
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<td>Examination of the history and spread of Islam in Africa and its impact on African social, economic, and political institutions. Prereq: 121 or 122, or AAmASt 121 or 122; or grad standing. Not open to students with credit for 643 or AAmASt 643 or 541. Cross-listed with AAmASt 541.</td>
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<td>542.01</td>
<td>Intellectual and Social Movements in the Muslim World</td>
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<td>Examination of significant Muslim intellectual and social movements from the advent of Islam until the present. Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Background courses in Middle Eastern history, culture, or politics are recommended but not required. Not open to students with credit for 654.</td>
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<td>543.01</td>
<td>History of India: Ancient India</td>
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<td>UGRD</td>
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<td>A history of India from 2500 B.C.E. to the Muslim invasion of the 10th and 11th centuries C.E. Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor.</td>
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<td>543.02</td>
<td>History of India: Islamic Spain</td>
<td>5</td>
<td>UGRD</td>
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<td>The Sultanate and Mughal Empires (1000-1707 A.D.): emphasis on imperial institutions and the interaction of Hindu and Muslim societies. Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 645.02.</td>
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<td>543.03</td>
<td>History of India: Colonial India</td>
<td>5</td>
<td>UGRD</td>
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<td>A history of South Asia during the colonial period, from the arrival of Vasco da Gama in 1498 until independence and partition in 1947. Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 645.04.</td>
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<tr>
<td>543.04</td>
<td>History of India: Contemporary India and South Asia</td>
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<td>UGRD</td>
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<td>The political, social, economic, and cultural history of contemporary India and the South Asian subcontinent, focusing on India, Pakistan, and Bangladesh. 2-2 1/2 cr. Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor.</td>
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<td>544</td>
<td>The Mongol World Empire: Central Eurasia, 1000-1500</td>
<td>5</td>
<td>UGRD</td>
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<td>An introduction to the social, cultural, and political history of medieval Central Eurasia, focusing on the interaction between nomadic and sedentary populations. Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. GEC historical survey course.</td>
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<tr>
<td>545.01</td>
<td>Chinese History: The Chinese Empire, Tenth- Fourteenth Centuries</td>
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<td>UGRD</td>
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<td>A survey of the first segment of the later Chinese imperial period, the Song (960-1279) and Yuan (1279-1368) dynasties. Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor.</td>
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<tr>
<td>545.02</td>
<td>Chinese History: China in the Early Modern Era: The Ming and Qing Dynasties</td>
<td>5</td>
<td>UGRD</td>
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<td>The major topics in Ming and Qing history. Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor.</td>
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<td>545.03</td>
<td>Chinese History: Modern China, 1800-1949</td>
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<td>UGRD</td>
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<td>History of modern China with emphasis on cultural contact between China and the West. Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 547.03 or 646.</td>
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<td>545.04</td>
<td>Chinese History: History of Contemporary China, 1949-Present</td>
<td>5</td>
<td>UGRD</td>
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<td>A general but analytic introduction to the social, political, and intellectual history of contemporary China, 1949-present. Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 344.</td>
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<td>546</td>
<td>Topics in Chinese History</td>
<td>5</td>
<td>UGRD</td>
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<td>Selected thematic topics in Chinese history. Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 691. Repeatable to a maximum of 10 hr.</td>
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</table>
History

548.01 History of Japan: History of Japan before 1800  UGRD 5
History of Japan to 19th century: emphasis on religion, politics, economic development, social structure and culture.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 647.

548.02 History of Japan: Modern Japan  UGRD 5
Political, social, and intellectual history of Japan from the beginning of the Meiji Period (1868) to the present.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 648.

551 Africa before Colonial Rule  UGRD 5
Examination of pre-colonial political, economic, and social systems, including material culture and agriculture.
Prereq: 122 or AfAmASt 122 or grad standing or permission of instructor. Not open to students with credit for 674, or AfAmASt 611 or 674.

552 History of South Africa  UGRD 5
An examination of the political and social developments in South Africa from the nineteenth century to the present.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 675, or AfAmASt 537 or 675 or 575. Cross-listed with AfAmASt 575.

555.01 Topics in African-American History I  UGRD 5
Selected topics in African-American history from the origins of African-American culture and slavery to emancipation.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Repeatable to a maximum of 10 cr hrs. Cross-listed in African-American and African Studies.

555.02 Topics in African-American History II  UGRD 5
Selected topics in African-American history from emancipation through segregation, and the Civil Rights Movement to the present.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Repeatable to a maximum of 10 cr hrs. Cross-listed in African-American and African Studies.

556 Colonial North America to 1763  UGRD 5
The history of colonial and native societies in North America from first contacts to the eve of the imperial crisis.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 656.

557.01 Early U.S. History: American Revolution and New Nation, 1763-1800  UGRD 5
Analysis of social, economic, cultural, and political changes in 18th century America.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 658.

557.02 Early U.S. History: Jeffersonian and Jacksonian Democracy, 1800-1845  UGRD 5
A continuation of 557.01 but may be taken separately; primary emphasis on social and political history of postrevolutionary America.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 656.

557.03 Early U.S. History: Civil War and Reconstruction The causes, character, and consequences of America's sectional war and the post-war settlement.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 662.

559 History of Slavery in North America from Colonial Times to 1860  UGRD 5
The social system of the Old South; the various aspects of secession and the impact of war.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 661.

560 Westward Movement in American History  UGRD 5
The westward spread of settlement and the influence of the westward movement on American development.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 660.

561 History of American Science  UGRD 5
Social and intellectual factors from colonial beginnings to professionalization; Darwinism; American preeminence; the modern scientific crisis.
Prereq: Jr standing. Not open to students with credit for 660.

562 History of American Medicine  UGRD 5
Disease, public health, and the profession and practice of medicine in America from colonial times to the present.
5 cr. Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 684.

564 Gilded Age to Progressive Era, 1877-1920  UGRD 5
Intensive study of the U.S. from 1877 to 1920; subjects include industrialization, Populism, Progressivism, immigration, urbanization, and foreign policy through World War I.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 563.

565 From the New Era to the New Frontier, 1921-1963  UGRD 5
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor.

566 The Contemporary United States since 1963  UGRD 5
Political, economic, social and cultural change since 1963; emphasis on political polarization, post-industrial economy, civil rights movement, feminism, environmentalism, Vietnam War, detente and globalization.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor.

568.01 Native American History from European Contact to Removal, 1560-1820  UGRD 5
Major issues and events in Native American history from before the European invasion and colonization through the early 1820s.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor.

568.02 Native American History from Removal to Present  UGRD 5
Major issues and events in American Indian history from the 1820s to the twenty-first century.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor.

569 American Labor History  UGRD 5
Evolution of working-class life, culture, politics, and trade unionism in America from the late 18th century to the present.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 689.01.

570.01 The United States Constitution and American Society to 1877  UGRD 5
The history of the interaction between American principles of government, equality, liberty, and American society through the Civil War era.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor.

570.02 The United States Constitution and American Society since 1877  UGRD 5
The history of the interaction between American principles of government, equality, liberty, and American society from 1877 to the present.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor.

577.01 Chicano History, From the Spanish Colonial Period to 1900  UGRD 5
Chicano experience from the late 16th century to 1900, with a special emphasis on race, class, and gender relations.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor.

577.02 Chicano History, From 1900 to the Present Era  UGRD 5
Chicano experience from 1900 to the present era, with a special emphasis on race, class, and gender relations.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor.

578 American Religious History  UGRD 5
Survey of religious history of the United States from colonial times to the present.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor.

579.01 American Cultural and Intellectual History, 1789-1900  UGRD 5
Major currents in American thought of the 19th century.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor.

579.02 American Cultural and Intellectual History in the 20th Century  UGRD 5
Major currents in American thought and culture, 1900-present.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 296.

580.01 History of European Warfare from the Renaissance to 1870  UGRD 5
An analysis of military affairs and of their interaction with political and diplomatic history.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 625.01.

580.02 History of European Warfare from 1870 through World War II  UGRD 5
A continuation of 580.01; an analysis of the military and diplomatic events which shaped the world in the 20th century.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 625.02.

581.01 European International History: 19th Century  UGRD 5
History of the international relations and diplomacy of Europe from the Congress of Vienna to the First World War.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 623.01.
581.02 European International History: 20th Century UGRD 5
History of the international relations and diplomacy of Europe from the First World War to the present.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 623.02.

582.01 American Military Policy, 1607-1914 UGRD 5
American military policy from the colonial period through World War I and America's emergence as a world power; emphasis on war-waging and military institutions.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 668.01.

582.02 American Military Policy, 1914-1995 UGRD 5
Emphasis on collective security, nuclear strategy, and the reciprocal impact of society and military institutions.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 668.02.

583.01 U.S. Diplomacy from Independence to 1920 UGRD 5
Domestic and international setting of U.S. diplomacy from the Revolutionary War to 1920.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 670.01.

583.02 U.S. Diplomacy, 1920-Present UGRD 5
Domestic and international setting of U.S. diplomacy from 1920 to the present.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 670.02 or 670.03.

584 Modern Intelligience History UGRD 5
This course examines the role of diplomatic and military intelligence in the making of policy in modern history.

585 History of Literacy UGRD 5
This course seeks to understand the history of literacy by examining literacy's contributions to making the modern world, and social changes' impacts on literacy.
Prereq: 10-hour historical survey sequence. Not open to students with credit for English 585.02 or CompStd 585.02. Cross-listed with English 585.02 and CompStd 585.02.

587.01 History of Capitalism in Global and Comparative UGRD 5
Perspective
An historical comparison of the development of modern forms of business and business management in Great Britain, the United States, and Japan.
Aw, Wi, Sp Qtrs. Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 568.

587.02 Science, Technology, and Business in Japan UGRD 5
An examination of the historical development of business from the early 17th century to the present with attention to the interconnections between business, technology, and science.
Prereq: 5 cr hrs of History and Jr or Sr standing, or permission of instructor. Not open to students with credit for 649.

589 Marginal Groups in the Non-Western World UGRD 5
Comparison of the experiences of several marginal and minority groups in the major non-western civilizations from roughly the 16th-20th centuries.

593 Individual Studies UGRD 1-5
Individual study in some field of historical development; designed to allow the student to work on a problem of particular interest.
Su, Aw, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

594 Group Studies UGRD 1-5
The investigation of particular problems in various fields of history.
Su, Aw, Wi, Sp Qtrs. Repeatable to a maximum of 30 cr hrs.

596 Introduction to Quantitative Methods in History UGRD 5
Prepares students to use quantitative methods in historical research and to take intermediate courses in statistics and data analysis.
Not open to students with credit for 681 or 765.01.

597 Critical Issues of the 20th-Century World UGRD 5
Contemporary global problems in historical perspectives; war and threat of war; intercontinental racial, ideological, and economic conflicts; the search for a new world order.
Prereq: Jr or Sr standing. Not open to students with credit for 400. GEC contemporary world course.

598 Senior Seminar UGRD 5
The nature of historical judgment and interpretation; the roles of evidence, approach, and presuppositions.
Prereq: Sr history majors or written permission of instructor. Not open to students with credit for 598.01 or 598.02. GEC third writing course.

598H Senior Seminar UGRD 5
Designed to give undergraduate majors experience in the analysis of historical problems through a reading and research program.
Prereq: Sr status in history and enrolled in honors program or permission of department or instructor. Not open to students with credit for 598.02H. GEC third writing course.

692 Workshop UGRD 1-8
Workshop.
Arr. Repeatable.

697 Study at a Foreign Institution UGRD 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This course is Progress (P) graded. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

698.01 Study Tour: Domestic UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different title study tours only.

698.02 Study Tour: Foreign UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different title study tours only.

699 Undergraduate Research in History UGRD 1-15
Undergraduate research in history.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

700 Studies in World History GRAD 5
Analysis of seminal works and concepts in the development of global-scaled integrative approaches to world history.
Prereq: Course work at the 600 level or above in history of more than one civilization and permission of instructor. Repeatable to a maximum of 15 cr hrs.

706.01 Studies in Medieval History: Advanced Readings in Medieval History GRAD 5
Advanced reading course in sources and monographs on the principal issues and problems in medieval history, with a stress on bibliography.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 20 cr hrs.

706.02 Studies in Medieval History: Late Medieval GRAD 3
Paleography and Diplomatics
Cursive hands in literature and diplomas, 1200-1500; the development of chanceries; notaries, secretariats, and the science of diplomas; exercises with facsimiles, slates and microfilm.
Prereq: Permission of instructor.

708 Studies in Ancient History GRAD 5
An intensive study of selected problems and sources in ancient history (Near Eastern, Greek and/or Roman); readings in the primary and secondary materials.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 20 cr hrs.

709 Methodology in Ancient History GRAD 5
Introduction to the methodologies and bibliographies fundamental to graduate study of ancient Greek and Roman history through written papers and oral class reports.
Minimum of 2 hrs weekly in class; other time in library research. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

710 Studies in Renaissance or Reformation History GRAD 5
Principal issues in the history of the Renaissance or the Reformation.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

712 Studies in Early Modern European History GRAD 5
Selected topics in western European history of the 17th and 18th centuries.
Prereq: 612 or permission of instructor. Open only to grad students and by permission to sr majors in history. Repeatable to a maximum of 15 cr hrs.

713 Colloquium in Early Modern Studies GRAD 5
Readings seminar in topics in early modern (1350-1800) studies; history, literature, arts, and music.
1 2-hr cl. Prereq: Grad standing in history, or permission of instructor. Repeatable to a maximum of 15 cr hrs. Required for grad students in early modern European history.

714 Studies in French History since 1815 GRAD 5
An intensive study, through reading and discussion of standard works and recent scholarship, of the chief interpretative problems of modern French history.
Prereq: Grad standing or permission to srs majoring in history. Repeatable to a maximum of 10 cr hrs.

723 Studies in European International History GRAD 5
Readings in and discussion of the history of European international relations from the late 19th century.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 20 cr hrs.

724.01 China and the Early Modern World GRAD 5
China's pivotal role in the evolution of the early modern world system and European colonialism
1 3-hr seminar. Prereq: Graduate standing. Repeatable to a maximum of 10 cr hrs.

724.02 Imperialism, Anti-Imperialism, and War in Modern East Asia GRAD 5
East Asian ecumenic as reflecting world trends defined by Western colonizing nations.
1 3-hr seminar. Prereq: Graduate standing. Repeatable to a maximum of 10 cr hrs.
234 History

726 Studies in Jewish History  GRAD 5
An intensive study of selected issues in Jewish history; emphasis on problems posed by available source material and by current research in the area.
Prereq: Grad standing or permission to srs majoring in history. Repeatable to a maximum of 15 cr hrs.

727 Studies in Islamic History  GRAD 5
Selected topics in Islamic history and historiography.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 25 cr hrs.

730 Studies in 19th and 20th Century European History  GRAD 5
Thought and Culture
Selected topics in Western European history of the 19th and 20th centuries.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

731 Studies in European History, 1914 to Present  GRAD 5
Political, social, and economic developments; World Wars I and II; Communism, Nazism; present-day Europe; emphasis on methods of historical research and documentary analysis. Open only to grad students and by permission to srs majoring in history. Repeatable to a maximum of 10 cr hrs.

732 Studies in German History  GRAD 5
Exploration of selected topics of 19th and 20th century German history; emphasis on methods of historical research and documentary analysis.
Prereq: 618 or equiv. Open only to grad students and by permission to srs majoring in history.

738 Studies in British History  GRAD 5
Selected problems in British history since 1485; emphasis on different schools and interpretations, on methods of research, and an analysis of documents.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

739 Comparative Constitutional Politics  GRAD 5
Compares constitutions and constitutionalism across cultures and through different disciplines with special attention to how people make claims to secure their rights and interests.
Prereq: Grad standing or permission of instructor. Not open to students with credit for CompStd 739. Cross-listed in Comparative Studies.

740 Studies in Russian and Soviet History  GRAD 5
An intensive study of problems in selected periods of Russian history. Open only to grad students and by permission to srs majoring in history. Repeatable to a maximum of 15 cr hrs.

741 Studies in Eastern European History  GRAD 5
Selected topics in modern Eastern European political, social, cultural, and intellectual history and historiography; theoretical and comparative emphasis.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

742 African Historiography and Methodology  GRAD 5
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 15 cr hrs.

743 Studies in African History  GRAD 5
The study of the historical literature of Africa and various aspects of African history; topics vary. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

744 African Women: History and Socioeconomic Change  GRAD 5
Focuses on African women's experiences: legal and socioeconomic status, religious and political roles, the impact of colonial and post-colonial developments, feminism and representation issues. 1-3 hr cl. Not open to students with credit for WGSSt 623. Cross-listed with WGSSt 623.

751 Studies in Latin American History  GRAD 5
An intensive study of problems in selected periods of Latin American history.
Prereq: Grad standing or permission of instructor for srs majoring in history or a cognate Latin American field. Repeatable to a maximum of 10 cr hrs.

752 Readings in African-American History  GRAD 5
Readings in the evolution of black culture, economics and family life, race relations, and the emergence of class stratification within the black community.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs. including or hrs in AFAmASt 752. Cross-listed in African-American and African Studies.

753 Studies in the History of Religion  GRAD 5
An intensive readings course in some aspect of the history of religion; specific topic to be announced.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

755.01 African Americans in Early America  GRAD 5
Intensive reading and discussion seminar explores African American life and culture during the colonial, revolutionary, and early national eras.
Prereq: Grad standing. Repeatable to a maximum of 10 cr hrs. Cross-listed in AFAmASt.

755.02 African Americans during the Nineteenth Century  GRAD 5
A study of the social, political, and economic history of black Americans during the 19th century.
Prereq: Grad standing. Repeatable to a maximum of 10 cr hrs. Cross-listed in AFAmASt.

755.03 African Americans during the Twentieth Century  GRAD 5
This reading intensive seminar explores African American life and culture during the twentieth century.
Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs. Cross-listed in AFAmASt.

755.04 African American Historiography  GRAD 5
This course is designed to acquaint students with the origins and evolution of African American history from the late-eighteenth century up to the present.
Prereq: Grad standing. Repeatable to a maximum of 10 cr hrs. Cross-listed in AFAmASt.

758.01 Comparative History of the African Diaspora: Enslavement and Emancipation  GRAD 5
First of a two-part course on the history and evolution of the African Diaspora worldwide, from ancient times to the present. 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 or permission of instructor. Not open to students with credit for AFAmASt 758.01. Cross-listed in African-American and African Studies.

758.02 Post-Emancipation, Colonial and Post-Colonial Realities  GRAD 5
Second of a two-part course on the 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, from the period of the emancipation to the beginning of the 21st century.
Prereq: Grad standing and 758.01 or History 758.01; or permission of instructor. Not open to students with credit for AFAmASt 758.02. Cross-listed in African-American and African Studies.

759 Atlantic World History  GRAD 5
Examination of Atlantic World history in the early modern era, including imperialism and colonialism, the intercontinental exchange of people, ideas, and goods, and cultural development.
Prereq: Grad standing.

761 Studies in Mid-19th Century American History  GRAD 5
An intensive study of selected topics with emphasis on historiography and bibliography.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

762 Studies in the History of Technology  GRAD 5
Introduction to the study of the history of technology, providing insights into the ways in which technology has been implicated in other historical processes.
Prereq: Grad standing or permission of instructor. Not open to students with credit for CompStd 567. Open only to grad students and by permission to srs majoring in history.

764 An Introduction to Public History  GRAD 5
To give students some exposure to the wide variety of intellectual activities that fall under public history.
Prereq: Grad standing.

765 Studies in Environmental History  GRAD 5
Analysis of a range of studies in environmental history; chronological and geographical focus will be shaped by students' interests.
Prereq: Grad standing or permission of instructor to students with credit for 567.

767 Studies in Military History  GRAD 5
Selected topics and periods in military history; emphasis on recent scholarship.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

768 Studies in Military Thought and Strategy  GRAD 5
Analysis and comparison of the most influential writers on the theory and practice of warfare including Thucydides, Machiaveli, Clausewitz, Mahan, Fuller, and Liddell Hart.
Prereq: 668 or equiv, and grad standing; or permission of instructor.

770 Studies in the History of American Foreign Policy  GRAD 5
Studies in the main problems of American foreign policy with primary emphasis on basic literatures and selected primary materials.
Prereq: 570 and grad standing; or permission of instructor. Repeatable to a maximum of 15 cr hrs.

771 Themes in Recent United States History  GRAD 5
Readings colloquium in selected themes in the history of the United States since 1877.
Prereq: Grad standing. Repeatable to a maximum of 20 cr hrs.

772 Studies in Recent United States History  GRAD 5
Readings in selected topics in American history since 1898.
Prereq: Undergrads by permission of instructor. Repeatable to a maximum of 20 cr hrs.

773 Studies in Business History  GRAD 5
Readings in the growth of capitalism, the rise of the modern corporation, government-business relations, business and society, and comparative business history.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

774 History of American Law and Society  GRAD 5
The history of American law and legal institutions, and their relationship to society, from colonial times to the present.
Wi Qtr. Prereq: Not open to students with credit for 585 or 687. Cross-listed in Law 796.17.
775 History of Literacy     GRAD  5  
From the invention of alphabets to the electronic age: literacy's relationships with social, cultural, political, and economic changes; impacts and significance for individuals and collectives.
Prereq: 2 hr-cl.  Credit will be awarded upon completion of 775. Repeatable to a maximum of 10 cr hrs. Cross-listed with English 884.

780 Topics in the History of Sexuality     GRAD  5  
Designed to give graduate students an interdisciplinary, international background to sexuality history.
Prereq: Grad standing.

781 Studies in Women's History     GRAD  5  
An intensive reading course designed to prepare graduate students in women's history in a comparative framework.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 20 cr hrs. including cr hrs earned in CompStd 781. Cross-listed in Comparative Studies.

783H Honors Research     UGRD  3-5  
Informal conferences to allow full scope to the initiative of the student; a special topic is assigned and results are tested by papers and special examinations.
Prereq: 4th yr standing and 40 cr hrs in history courses with a grade of A in at least half of the history courses 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. At least 2 qtrs are required of candidates for the degree BA with distinction in history. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. This course is graded SU.

784 Readings in American Constitutional and Legal History     GRAD  5  
An intensive investigation of standard works as well as influential and seminal articles in American constitutional and legal history.
Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

785.01 Readings in American Colonial History and the American Revolution     GRAD  5  
Readings in the basic historical literature of colonial and revolutionary America through 1783.
Prereq: Grad standing or permission of instructor.

785.02 Readings in the History of the Early Republic     GRAD  5  
Readings in the basic historical literature of the early Republic, the Jacksonian era, and the market revolution from 1776 to 1850.
Prereq: Grad standing or permission of instructor.

785.03 Readings in the History of the United States in the Civil War Era     GRAD  5  
Readings in the basic historical literature of the United States during the era of the Civil War and Reconstruction, from 1845 to 1877.
Prereq: Grad standing or permission of instructor.

786 Colloquium in the Philosophy of History, Historiography, and the Historian's Skills I     GRAD  5  
Colloquium on the principles of historical thought, historiography, and methods of historical research.
Prereq: Grad standing in history or permission of instructor. Required of MA and PhD candidates in history.

787 Colloquium in the Philosophy of History, Historiography, and the Historian's Skills II     GRAD  5  
Continuation of 786 with emphasis on research methods.
Prereq: 786 or permission of instructor. Required at the discretion of the adviser.

788 Studies in American Urban History     GRAD  5  
A detailed examination of several themes in the growth of urban America.
Prereq: 688 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

789 Topics in American History to 1877     GRAD  5  
Readings in selected topics in American history to 1877.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

790 Graduate Colloquium on Historical Writing     GRAD  5  
Designed to develop skills in historical writing.
Prereq: Grad standing or permission of instructor.

791 Topics in History     GRAD  1-5  
The investigation of particular problems in various fields of history through individual studies.
Su, Au, Wi, Sp Qtr. Arr. Prereq: Grad standing. Repeatable to a maximum of 20 cr hrs.

792 Interdepartmental Studies in the Humanities     GRAD  3-5  
Two or more departments present colloquia on subjects of mutual interest; topics to be announced.
Prereq: Grad standing or permission of instructor(s). Repeatable to a maximum of 15 cr hrs.

795.01 Professional Development: Introduction to Teaching College History     GRAD  5  
Basic ideas and techniques for effective teaching of college history; emphasis on classroom application.
Prereq: Grad standing in history. Required for history grad associates. Not open to students with credit for 795. This course is graded SU.

795.02 Professional Development: Pre-Professional Colloquium for Historians     GRAD  5  
This professional development colloquium is designed to help graduate students locate funding sources for their study, research, conferences and other professional activities.
Prereq: Grad standing. This SU elective can be taken in lieu of History 999 credit only. It does not replace other 700-level requirements for the MA or PhD degree. This course is graded SU.

796 Studies in Japanese History     GRAD  5  
An intensive study, through reading and discussion, of major issues and recent scholarship in Japanese history.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 20 cr hrs.

797 Introduction to Graduate-level East Asian Studies     GRAD  5  
We explore the origin, 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 EALL 797 or HistArt 797. Cross-listed in East Asian Languages and Literatures and History of Art.

798 Studies in Chinese History     GRAD  5  
Research topic to be announced.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 20 cr hrs.

800.01 Seminar in Renaissance or Reformation History     GRAD  5  
Research topic to be announced.
This course is Progress (P) graded. Credit will be awarded upon completion of 800.02. Repeatable to a maximum of 20 cr hrs.

800.02 Seminar in Renaissance or Reformation History II     GRAD  5  
Research topic to be announced. Continuation of 800.01.
This course is Progress (P) graded. Repeatable to a maximum of 20 cr hrs.

801.01 Seminar in German History I     GRAD  5  
Research topic to be announced.
This course is Progress (P) graded. Credit will be awarded upon completion of 801.02. Repeatable to a maximum of 10 cr hrs.

801.02 Seminar in German History II     GRAD  5  
Research topic to be announced.
This course is Progress (P) graded. Repeatable to a maximum of 10 cr hrs.

802.01 Seminar in Russian and East European History I     GRAD  5  
Research topics to be announced.
This course is Progress (P) graded. Repeatable to a maximum of 10 cr hrs.

802.02 Seminar in Russian and East European History II     GRAD  5  
Research topics to be announced. Continuation of 802.01.
This course is Progress (P) graded. Repeatable to a maximum of 10 cr hrs.

803.01 Seminar in British History I     GRAD  5  
Research topic to be announced.
This course is Progress (P) graded. Credit will be awarded upon completion of 803.02. Repeatable to a maximum of 10 cr hrs.

803.02 Seminar in British History II     GRAD  5  
Research topic to be announced. Continuation of 803.01.
This course is Progress (P) graded. Repeatable to a maximum of 10 cr hrs.

804.01 Seminar in East Central European History I     GRAD  5  
Research topic to be announced.
This course is Progress (P) graded. Credit will be awarded upon completion of 804.02. Repeatable to a maximum of 10 cr hrs.

804.02 Seminar in East Central European History II     GRAD  5  
Research topic to be announced. Continuation of 804.01.
This course is Progress (P) graded. Repeatable to a maximum of 10 cr hrs.

805.01 Seminar in French History I     GRAD  5  
Research topic to be announced.
This course is Progress (P) graded. Credit will be awarded upon completion of 805.02. Repeatable to a maximum of 10 cr hrs.

805.02 Seminar in French History II     GRAD  5  
Research topic to be announced. Continuation of 805.01.
This course is Progress (P) graded. Repeatable to a maximum of 10 cr hrs.

807.01 Seminar in Medieval History I     GRAD  5  
Research topic to be announced.
This course is Progress (P) graded. Credit will be awarded upon completion of 807.02. Repeatable to a maximum of 10 cr hrs.

807.02 Seminar in Medieval History II     GRAD  5  
Research topic to be announced. Continuation of 807.01.
This course is Progress (P) graded. Repeatable to a maximum of 10 cr hrs.
808.01 Seminar in Ancient History I  GRAD 5  
Topic to be announced.  
Prereq: Permission of instructor. This course is Progress (P) graded. Credit will be awarded upon completion of 808.02. Repeatable to a maximum of 30 cr hrs.

808.02 Seminar in Ancient History II  GRAD 5  
Topic to be announced. Continuation of 808.01.  
Prereq: Permission of instructor. This course is Progress (P) graded. Repeatable to a maximum of 30 cr hrs.

810.01 Seminar in World History I  GRAD 5  
Research topics to be announced.  
Prereq: 700 or permission of instructor. This course is Progress (P) graded. Credit will be awarded upon completion of 810.02. Repeatable to a maximum of 10 cr hrs.

810.02 Seminar in World History II  GRAD 5  
Research topics to be announced. Continuation of 810.01.  
Prereq: 700 or permission of instructor. This course is Progress (P) graded. Repeatable to a maximum of 10 cr hrs.

811.01 Seminar in Atlantic World History I  GRAD 5  
A two-quarter seminar in Atlantic World History designed to sharpen research, writing, and analytical skills towards the production of a publishable paper.  
Prereq: Grad standing. Repeatable to a maximum of 10 cr hrs.

811.02 Seminar in Atlantic World History II  GRAD 5  
A two-quarter seminar in Atlantic World History designed to sharpen research, writing, and analytical skills towards the production of a publishable paper.  
Prereq: Grad standing. Repeatable to a maximum of 10 cr hrs.

823.01 Seminar in European International History I  GRAD 5  
Seminar in European International History I.  
This course is Progress (P) graded. Credit will be awarded upon completion of 823.02. Repeatable to a maximum of 10 cr hrs.

823.02 Seminar in European International History II  GRAD 5  
Continuation of 823.01.  
This course is Progress (P) graded. Repeatable to a maximum of 10 cr hrs.

824.01 Seminar in Modern European History III  GRAD 5  
Seminar in modern European history that develops and applies skills for research papers, masters theses, and dissertations.  
Prereq: Grad standing. This course is Progress (P) graded. Credit will be awarded upon completion of 824.02. Repeatable to a maximum of 40 cr hrs.

824.02 Seminar in Modern European History II  GRAD 5  
Seminar in modern European history that develops and applies skills for research papers, masters theses, and dissertations.  
Continuation of 824.01.  
Prereq: Grad standing. This course is Progress (P) graded. Repeatable to a maximum of 40 cr hrs.

827.01 Seminar in the History of the Islamic World I  GRAD 5  
Research topic to be announced.  
This course is Progress (P) graded. Credit will be awarded upon completion of 827.02. Repeatable to a maximum of 10 cr hrs.

827.02 Seminar in the History of the Islamic World II  GRAD 5  
Research topic to be announced. Continuation of 827.01.  
This course is Progress (P) graded. Repeatable to a maximum of 10 cr hrs.

845.01 Seminar in East Asian History I  GRAD 5  
Research topic to be announced.  
Prereq: Permission of instructor. This course is Progress (P) graded. Credit will be awarded upon completion of 845.02. Repeatable to a maximum of 10 cr hrs.

845.02 Seminar in East Asian History II  GRAD 5  
Research topic to be announced. Continuation of 845.01.  
This course is Progress (P) graded. Repeatable to a maximum of 10 cr hrs.

850 Seminar in History  GRAD 1-5  
Research topic to be announced.  
Prereq: Written permission of grad chairperson. Repeatable to a maximum of 15 cr hrs.

851.01 Seminar in Latin American History I  GRAD 5  
Research topic to be announced.  
Prereq: Permission of instructor. This course is Progress (P) graded. Credit will be awarded upon completion of 851.02. Repeatable to a maximum of 10 cr hrs.

851.02 Seminar in Latin American History II  GRAD 5  
Research topic to be announced. Continuation of 851.01.  
Prereq: Permission of instructor. This course is Progress (P) graded. Repeatable to a maximum of 10 cr hrs.

862.01 Seminar in Jewish History I  GRAD 5  
Research topic to be announced.  
This course is Progress (P) graded. Credit will be awarded upon completion of 862.02. Repeatable to a maximum of 10 cr hrs.

862.02 Seminar in Jewish History II  GRAD 5  
Research topic to be announced.  
This course is Progress (P) graded. Repeatable to a maximum of 10 cr hrs.

867.01 Seminar in Early American History I  GRAD 5  
Research topic to be announced.  
This course is Progress (P) graded. Credit will be awarded upon completion of 867.02. Repeatable to a maximum of 10 cr hrs.

867.02 Seminar in Early American History II  GRAD 5  
Research topic to be announced. Continuation of 867.01.  
This course is Progress (P) graded. Repeatable to a maximum of 10 cr hrs.

868.01 Seminar in 19th Century American History I  GRAD 5  
Research topic to be announced.  
This course is Progress (P) graded. Credit will be awarded upon completion of 868.02. Repeatable to a maximum of 10 cr hrs.

868.02 Seminar in 19th Century American History II  GRAD 5  
Research topic to be announced. Continuation of 868.01.  
This course is Progress (P) graded. Repeatable to a maximum of 10 cr hrs.

869.01 Seminar in 20th Century American History I  GRAD 5  
Research topic to be announced.  
This course is Progress (P) graded. Credit will be awarded upon completion of 869.02. Repeatable to a maximum of 10 cr hrs.

869.02 Seminar in 20th Century American History II  GRAD 5  
Research topic to be announced. Continuation of 869.01.  
This course is Progress (P) graded. Repeatable to a maximum of 10 cr hrs.

870.01 Seminar in Selected Topics in American History I  GRAD 5  
Topics will include business, institutional, and public policy, constitutional, cultural, African-American, women, and labor history.  
This course is Progress (P) graded. Credit will be awarded upon completion of 870.02. Repeatable to a maximum of 10 cr hrs.

870.02 Seminar in Selected Topics in American History II  GRAD 5  
Research topic to be announced. Continuation of 870.01.  
This course is Progress (P) graded. Repeatable to a maximum of 10 cr hrs.

871.01 Seminar in American Diplomatic History I  GRAD 5  
Seminar in American Diplomatic History I.  
Prereq: Permission of instructor. This course is Progress (P) graded. Credit will be awarded upon completion of 871.02. Repeatable to a maximum of 10 cr hrs.

871.02 Seminar in American Diplomatic History II  GRAD 5  
Continuation of 871.01.  
Prereq: Permission of instructor. This course is Progress (P) graded. Repeatable to a maximum of 10 cr hrs.

873.01 Seminar in United States Military History I  GRAD 5  
First of a two-quarter seminar designed to provide experience in the research and writing of a scholarly paper based on primary source material in African-American history.  
1 3-hr cl.  
Prereq: Grad standing or permission of instructor. This course is Progress (P) graded. Credit will be awarded upon completion of 873.02. Repeatable to a maximum of 10 cr hrs.

873.02 Seminar in United States Military History II  GRAD 5  
Research topic to be announced. Continuation of 873.01.  
This course is Progress (P) graded. Repeatable to a maximum of 10 cr hrs.

875.01 Seminar in African-American History I  GRAD 5  
Second of a two-quarter seminar designed to provide experience in the research and writing of a scholarly paper based on primary source material in African-American history.  
1 3-hr cl.  
Prereq: Grad standing or permission of instructor. This course is Progress (P) graded. Credit will be awarded upon completion of 875.02. Repeatable to a maximum of 10 cr hrs.

875.02 Seminar in African-American History II  GRAD 5  
Research topic to be announced. Continuation of 875.01.  
This course is Progress (P) graded. Repeatable to a maximum of 10 cr hrs.

881.01 Seminar in Women's History I  GRAD 5  
Research topic to be announced.  
Prereq: Permission of instructor. This course is Progress (P) graded. Credit will be awarded upon completion of 881.02. Repeatable to a maximum of 10 cr hrs.

881.02 Seminar in Women's History II  GRAD 5  
Research topic to be announced. Continuation of 881.01.  
Prereq: Permission of instructor. This course is Progress (P) graded. Repeatable to a maximum of 10 cr hrs.

890.01 Topical Research Seminar I  GRAD 5  
Research topic to be announced. First of a two-quarter seminar on topical themes.  
Prereq: PhD standing or permission of instructor. This course is Progress (P) graded. Credit will be awarded upon completion of 890.02. Repeatable to a maximum of 10 cr hrs.

890.02 Topical Research Seminar II  GRAD 5  
Research topic to be announced. Continuation of 890.01.  
Prereq: PhD standing or permission of instructor. This course is Progress (P) graded. Repeatable to a maximum of 10 cr hrs.
History of Art

201 History of Western Art I: The Ancient and Medieval Periods UGRD 5
Examination of the history of Western art from the third millennium BC to the fifteenth century AD. Not open to students with credit for 210. GEC arts and hums VPA and social diversity - international issues (Western) and historical survey course.

202 History of Western Art II: Europe and the United States, Renaissance to Modern UGRD 5
Examination of the history of art in Europe and the United States, from about 1500 to the present. Not open to students with credit for 212. GEC arts and hums VPA and social diversity - international issues (Western) and historical survey course.

202H History of Western Art II: Europe and the United States, Renaissance to Modern UGRD 5
Examination of the history of art in Europe and the United States, from about 1500 to the present. Not open to students with credit for 212. GEC arts and hums VPA and social diversity - international issues (Western) and historical survey course.

213 Asian Art UGRD 5
Art of Asian cultures from ancient through contemporary times. Not open to students with credit for 210. GEC arts and hums VPA and social diversity - international issues (Global) course.

216 Introduction to African Art and Archaeology UGRD 5
The art and archaeology of Africa with emphasis on the historic cultures of the Rock Art (8,000 B.C.), Egypt (3000 B.C.), Nok (900 B.C.), Igbo-Ukwu (805 A.D.), Ife (1000 A.D.), and Benin (1400-1000 A.D.). 5 cl. GEC arts and hums VPA and social diversity - international issues (Global) course. VPA Admis Cond course.

260 Introduction to World Cinema UGRD 5
Chronological survey of the most influential and recognized film artists and film movements of the world. Not open to students with credit for 210. GEC arts and hums VPA and social diversity - international issues (Global) course.

294 Group Studies UGRD 2-5
The investigation of particular problems in various fields of the history of art. Not open to students with credit for 250, Arch 201, or any course from Arch 600-602 sequence, or more than one course from HistArt 201-202 or from HistArt 210-212 sequences. GEC arts and hums VPA and social diversity - international issues (Westem) course.

301 Christian Art UGRD 5
An introduction to the wide range of forms and functions of Christian images and spaces from their origin until 1700. Not open to students with credit for 250, Arch 201, or any course from Arch 600-602 sequence, or more than one course from HistArt 201-202 or from HistArt 210-212 sequences. GEC arts and hums VPA and social diversity - international issues (Westem) course.

305 Art and Civilization in the Near East UGRD 5
An examination of the development of the visual arts and architecture of the Near East from the Neolithic Revolution to the Islamic period. Not open to students with credit for 240. GEC arts and hums VPA and social diversity - international issues (Global) course.
History of Art

512H Abstract Art UGRD 5
A study of the underlying principles of abstraction in modern European art.
5 cl. Prereq: 201 or 202, and enrollment in an honors program; or permission of instructor.

514H Art as Historical Document: Evaluating the Evidence in Early Modern Europe UGRD 5
An investigation of the functions of art and its role as evidence in historical interpretations of early modern Europe.
Prereq: Enrollment in honors program or permission of instructor.

519 Great Masters of the 17th and 18th Centuries UGRD 5
A study concentrating on the individual careers of Caravaggio, Bernini, Rubens, Rembrandt, Velazquez, Poussin, Watteau, Tiepolo, and David. 519H (honors) may be available.
2 2-hr cl. Prereq: 2nd yr standing. Not open to HistArt majors or to students with credit for 631, 632, or 634. GEC arts and hums VPA and social diversity - international issues (Western) course.

520 19th- and 20th-Century European Art UGRD 5
European art from about 1800 to the present, with emphasis on the outstanding masters of painting and sculpture.
5 cl. Prereq: 2nd yr standing. GEC arts and hums VPA and social diversity - international issues (Western) course.

521 Egyptian Art and Archaeology UGRD 5
A specialized study of the architecture, sculpture, painting, and minor arts of ancient Egypt.
5 cl. Prereq: 201 or equiv with permission of instructor. Not open to students with credit for 621.

522 Art and Archaeology of Ancient Greece UGRD 5
Survey of art and architecture of Ancient Greece from the early Bronze Age (c.3000 B.C.) through the Hellenistic period (31 B.C.).
5 cl. Not open to students with credit for 622.

523 Art and Archaeology of Ancient Rome UGRD 5
Survey of the art and architecture of the Roman Empire, including their Hellenistic origins.
5 cl. Not open to students with credit for 623.

524 Early Christian and Byzantine Art UGRD 5
Art and architecture of the early Christian and Byzantine world from the 3rd through the 15th centuries with special emphasis on the Mediterranean region.
5 cl. Prereq: 201 or permission of instructor. Not open to students with credit for 624.

525 Medieval Art UGRD 5
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.
5 cl. Prereq: 2nd yr standing. Not open to students with credit for 603, 625, or 651. GEC arts and hums VPA and social diversity - international issues (Western) course.

527 Northern Renaissance Art UGRD 5
Art of Northern Europe from the late 14th to the mid 16th century, with emphasis on the major masters.
5 cl. Prereq: 201 or 202 or permission of instructor. Not open to students with credit for 627.

529 Early Renaissance Art in Italy UGRD 5
An introduction to the art and architecture of 15th century Italy.
2 2-hr cl. Prereq: 201 or equiv with permission of instructor. Not open to students with credit for 629.

530 American Art UGRD 5
A study of architecture, painting, and sculpture in America.
2 2-hr cl. Prereq: 201, English 110 or 110.01 and 2nd yr standing. Not open to students with credit for 330. GEC arts and hums VPA course.

531 High Renaissance and Mannerist Art in Italy UGRD 5
An introduction to the art and architecture of 16th century Italy.
2 2-hr cl. Prereq: 202 or permission of instructor. Not open to students with credit for 630.01 or 630.02.

532 Baroque Art in Italy and Spain UGRD 5
17th century Italian and Spanish art and architecture; focuses on major artists and various functions of art and architecture.
2 2-hr cl. Prereq: 201 or 202 or permission of instructor. Not open to students with credit for 631.

533 Northern Baroque Art UGRD 5
17th Century Dutch and Belgium art; focuses on major artists and various functions of art (propagating religious beliefs, shaping values, defining identities, etc.).
Prereq: 201 or 202 or permission of instructor.

534 18th Century European Art UGRD 5
5 cl. Prereq: 202 or permission of instructor. Not open to students with credit for 634.

535 Nineteenth-Century European Art UGRD 5
A survey of the major developments in European art from the French Revolution until the end of the nineteenth century.
Prereq: 202 or permission of instructor.

540 Twentieth-Century European Art UGRD 5
Historical/conceptual survey of European art of the twentieth century.
Prereq: 202, 340 or permission of instructor.

541 Contemporary Art since 1945 UGRD 5
Visual arts of Europe and the United States from 1945 to the present.
Prereq: 202 or permission of instructor. Not open to students with credit for 640.

545 Russian Art UGRD 5
A millennium of art and architecture, from the period of Kyiv-Rus through the dissolution of the Soviet Union.
5 cl. Prereq: Not open to students with credit for 644 or 645.

546 Classic Film Theories UGRD 5
Study of historically important theories of film art.
5 cl. Prereq: 2nd yr standing. Not open to students with credit for 646.

550 Art of Paris UGRD 5
Study of the painting, sculpture, buildings, and public and private spaces created in and for the people and the city of Paris.
5 cl. Prereq: 2nd yr standing.

558 19th-Century European Architecture UGRD 5
An investigation of architecture from the late 19th century to the end of the 19th century, focusing on issues of Modernism.
5 cl. Prereq: 202 or permission of instructor. Not open to students with credit for 607.

559 Twentieth-Century Architecture UGRD 5
A historical and conceptual survey of architecture from the late 19th century to the beginning of the 21st.
Prereq: 202 or permission of instructor.

561 Art and Architecture of the Ancient Near East UGRD 5
A specialized study of the art and archaeology of the ancient Near East focusing on the cultures of the Mesopotamian valley and surrounding areas.
Prereq: 201 or permission of instructor. Not open to students with credit for 661.

570 An Introduction to Buddhist Art and Iconography UGRD 5
Examines how Buddhist art conveys the ideal of human perfection as the ultimate attainment of Buddhist practice.
GEC arts and hums cultures and ideas course.

576 The Arts of China UGRD 5
An overview of the visual arts of China and their cultural context from prehistoric times to the modern era.
5 cl. Prereq: Soph standing or permission of instructor. GEC arts and hums VPA and social diversity - international issues (Global) course.

582 Arts of Japan UGRD 5
Major trends in the visual arts of Japan, from prehistory through the 19th century.
Su, Su, Su, Su, Su, Su Qtr. 2 2-hr cl. Prereq: 2nd yr standing or permission of instructor. GEC arts and hums VPA and social diversity - international issues (Global) course.

590 Introduction to Contemporary Art Historical Theory UGRD 5
Exploration of new/theoretical paradigms in art history.
5 cl.

601 Architecture of the Ancient Orient UGRD 5
Survey of architecture of southwest Asia and the Nile Valley from the fourth millennium B.C. to the fourth century B.C.
5 cl. Prereq: 201 or permission of instructor. Not open to students with credit for 621 or 661.

602 Ancient Greek and Roman Architecture UGRD 5
Survey of architecture and architectural decoration in the ancient Greek and Roman worlds (ca. 1000 B.C.-A.D. 350).
5 cl. Prereq: 201 or 10 or hrs of ancient history or classics, or permission of instructor. Not open to students with credit for Arch 600.

604 Renaissance Architecture UGRD 5
Survey of 15th- and 16th-century architecture in western Europe.
5 cl. Prereq: 201 or 202 or permission of instructor.

605 Baroque Architecture UGRD 5
Survey of late 17th-, 18th-, and early 18th-century architecture in western Europe.
5 cl. Prereq: 202 or permission of instructor.

606 American Architecture UGRD 5
Survey of American architecture from the pre-colonial era to the present day.
5 cl. Prereq: 202 or permission of instructor.

610 African Art and Archaeology I UGRD 5
A study of the art and culture of west Africa with emphasis on stylistic, historic, and archaeological implications.
5 cl. Prereq: 216 or permission of instructor.

611 African Art and Archaeology II UGRD 5
The study of the art and culture of central and southern Africa with emphasis on stylistic, historic, and archaeological implications.
5 cl. Prereq: 216 or permission of instructor.
614 Comparative Study of African and European Art UGRD 5
A critical study of the relationships between African and European art involving theory and practice.
5 cl. Prereq; Permission of instructor or jr standing.

615 Contemporary Art of West Africa UGRD 5
Painting and sculpture of Senegal, Sierra Leone, Liberia, Ivory Coast, Ghana, Dahomey, Nigeria, etc., focusing on history, style, and culture.
5 cl. Prereq; 216 or 505 or 610 or 614 or permission of instructor.

616 Contemporary Art of Central Africa UGRD 5
Painting and sculpture of Cameroon, Gabon, Republic of Congo, Democratic Republic of the Congo, Zambia, Sudan, Uganda, etc., focusing on history, style, and culture.
5 cl. Prereq; 216 or 505 or 610 or 614 or permission of instructor.

617 Contemporary Art of East and Southern Africa UGRD 5
Painting and sculpture of Ethiopia, Kenya, Tanzania, Mozambique, Zambia, Zimbabwe, Malawi, South Africa, etc., focusing on history of style and culture.
5 cl. Prereq; 216 or 505 or 611 or 614 or permission of instructor.

618 Contemporary Art of North Africa UGRD 5
20th-century painting, sculpture, and tapestries of Morocco, Algeria, Libya, United Arab Republic, Mauritania, Mali, Niger, and Chad, focusing on history, style, and culture.
5 cl. Prereq; 216 or 505 or 610 or 614 or permission of instructor.

619 Ancient Greek Sculpture UGRD 5
A study of sculpture in the ancient Greek world during the Archaic and Classical periods (ca. 700-323 B.C.).
Prereq; 201 or S2R or equivalent preparation in Classical Studies.

620 Ancient Roman Sculpture UGRD 5
A study of sculpture in the ancient Roman world from earliest times to the era of Constantine (c. 600 B.C.-A.D. 315).
Prereq; 201 or S2R or equivalent preparation in Classical Studies.

625 Romanesque and Gothic Art UGRD 5
The art of Western Europe from the Carolingian period to the 14th century.
5 cl. Prereq; 201 or permission of instructor.

628 Gothic towards Renaissance: The Fourteenth Century UGRD 5
Art of the Late Middle Ages in Western Europe in its social context, with new developments and major artists (Giotto, Duccio, Pucelle, Slater, Parler) emphasized.
5 cl. Prereq; 201 or permission of instructor.

632 Dutch Art of the Golden Age UGRD 5
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.
5 cl. Prereq; 202 or S33 or permission of instructor. Not open to students with credit for S33 prior to Au Qtr 1998.

635 Neo-Classicism 1760-1815 UGRD 5
An examination of antiquarian and progressive impulses that spurred the classical revival of the late 18th and early 19th centuries in architecture, painting and sculpture.
2 2-hr cl. Prereq; 212 or permission of instructor. Not open to students with credit for 635.01.

636.01 20th-Century European Art, 1896-1914 UGRD 5
Maltese, Picasso, Art Nouveau, and the Style Moderne: a survey of the foundations of modern art (Expressionism, Cubism, Futurism, and Non-representational).
Prereq; 202 or permission of instructor. Not open to students with credit for 636.

636.02 20th-Century European Art, 1914-1945 UGRD 5
European art between the World Wars: Post-Cubism, Dada and Surrealism, Bauhaus and Constructivism, and Abstraction.
Prereq; 202 or permission of instructor. Not open to students with credit for 636.

637 American Painting and Sculpture to 1900 UGRD 5
History of painting and sculpture in America from colonial times to the end of the 19th century.
5 cl. Prereq; 202 or permission of instructor; and English 110 or 111 or equiv.

638 20th-Century American Art UGRD 5
American painting and sculpture in the 20th century.
5 cl. Prereq; 202 or permission of instructor, and English 110 or 111 or equiv.

640 Video Art UGRD 5
This course will introduce students to video as an artistic medium by studying its contentious past, multiple forms, and the trajectories of this expanding field.
Su, Au, W, Sp Qtr. Prereq; 202, 340 or permission of instructor

641 Postmodernism UGRD 5
Exploration of the central issues in the claim to the emergence of a distinctly "postmodern" art in the last part of the 20th century.
2 2-hr cl. Prereq; 540 or 541 or permission of instructor.

645.01 Nineteenth-Century Russian Art UGRD 5
A study of the romantic, realist, and symbolist aesthetics of Russian 19th century painting and sculpture. Not open to students with credit for 645.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>671</td>
<td>Art of India I</td>
<td>5</td>
<td>Art and architecture of India from prehistoric times through the Gupta period, ca. 500 C.E. stressing relationship to religious and cultural developments. 5 cl.</td>
</tr>
<tr>
<td>672</td>
<td>Art of India II</td>
<td>5</td>
<td>Art and architecture of India from the Gupta period, ca. 500 C.E. to the Muslim period stressing relationship to religious and cultural developments. 5 cl.</td>
</tr>
<tr>
<td>673</td>
<td>Art of Central Asia</td>
<td>5</td>
<td>An analysis of the cross currents of style and iconography that constitute the pre-Muslim art of Central Asia. 5 cl.</td>
</tr>
<tr>
<td>674</td>
<td>Art of Nepal and Tibet</td>
<td>5</td>
<td>A study and analysis of the major aspects of style, iconography, and historical sequence as found in the arts of Nepal and Tibet. 5 cl.</td>
</tr>
<tr>
<td>675</td>
<td>Art of India III</td>
<td>5</td>
<td>Art and architecture of India in the Islamic, colonial, and contemporary periods.</td>
</tr>
<tr>
<td>676</td>
<td>Hindu Iconography</td>
<td>5</td>
<td>A survey of Hindu iconography emphasizing the development and meaning of specific deities. 5 cl.</td>
</tr>
<tr>
<td>677.01</td>
<td>Chinese: Pre-Buddhist</td>
<td>5</td>
<td>Examination of archaeological finds in China, ca. 4000 B.C. to the beginning of the 10th century A.D.; with emphasis on recent discoveries. Prereq: English 110 or 111 or equiv.</td>
</tr>
<tr>
<td>677.02</td>
<td>Chinese: Buddhist</td>
<td>5</td>
<td>Examination of the Buddhist arts of China; with emphasis on religious expression and content. Prereq: English 110 or 111 or equiv.</td>
</tr>
<tr>
<td>678.01</td>
<td>Chinese Painting to 1368</td>
<td>5</td>
<td>A survey of Chinese painting from the Han period through the Yuan dynasty, with emphasis on style, subject matter, and cultural context. Prereq: 213 or permission of instructor.</td>
</tr>
<tr>
<td>679</td>
<td>Modern and Contemporary Chinese Art</td>
<td>5</td>
<td>Modern Chinese art (mid-19th century to today) with emphasis on artists, artworks, and their social, artistic, institutional, and theoretical contexts. Prereq: 213, 576 or permission of instructor.</td>
</tr>
<tr>
<td>681</td>
<td>Japanese Art: Proto-Historic and Buddhist</td>
<td>5</td>
<td>Selected topics in the history of Japanese arts of the Proto-Historic period and the Buddhist religion. Prereq: English 110 or 111 or equiv.</td>
</tr>
<tr>
<td>682</td>
<td>Japanese Art: Painting and Prints</td>
<td>5</td>
<td>Selected topics in the history of Japanese pictorial art and related subjects. Prereq: English 110 or 111 or equiv.</td>
</tr>
<tr>
<td>690.01</td>
<td>Topics: Western Art</td>
<td>5</td>
<td>Topics to be announced. Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>690.02</td>
<td>Topics: Asian and Non-Western Art</td>
<td>5</td>
<td>Topics to be announced. Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>693</td>
<td>Individual Studies</td>
<td>2-5</td>
<td>Advanced study for students in specialized programs. Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>694</td>
<td>Group Studies</td>
<td>1-5</td>
<td>Group studies for students in specialized programs. Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>697</td>
<td>Study at a Foreign Institution</td>
<td>1-15</td>
<td>An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This course is Progress &quot;P&quot; graded. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.</td>
</tr>
<tr>
<td>698.01</td>
<td>Study Tour: Domestic</td>
<td>1-15</td>
<td>Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details. Prereq: Permission of instructor. Repeatable for different titled study tours only.</td>
</tr>
<tr>
<td>698.02</td>
<td>Study Tour: Foreign</td>
<td>1-15</td>
<td>Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details. Prereq: Permission of instructor. Repeatable for different titled study tours only.</td>
</tr>
<tr>
<td>699</td>
<td>Undergraduate Scholarship: Research and Creative Activity in History of Art</td>
<td>1-15</td>
<td>Undergraduate research or creative activities in varying topics. 699H (honors) may be available. Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>704</td>
<td>Studies in African Art and Archaeology</td>
<td>3-5</td>
<td>Studies in African art emphasizing problem identification, concept organization, library research and individual criticism. 3-5 cl. Prereq: 610 or 611 or permission of instructor. Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>705</td>
<td>Studies in Contemporary African Art</td>
<td>3-5</td>
<td>Introduction to research in 20th-century African art. Art ct. Prereq: 505 or 615 or 616 or 617 or 618 or permission of instructor. Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>710</td>
<td>Studies in Art Theory and Criticism</td>
<td>3-5</td>
<td>Investigations of theories of art and their applications. Prereq: 600. Not open to students with credit for 639. Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>715</td>
<td>Historical and Conceptual Bases of Art History</td>
<td>5</td>
<td>Investigation of intellectual and historical foundations of modern art history. 5-hr cl. Prereq: 20 cr hrs in hist art.</td>
</tr>
<tr>
<td>717</td>
<td>Studies in Medieval Art</td>
<td>3-5</td>
<td>Selected problems in architecture, painting, sculpture, and the minor arts from the Early Christian through the Byzantine and Gothic periods. Prereq: 524 or 625 or permission of instructor. Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>718</td>
<td>Studies in Italian Renaissance Art</td>
<td>3-5</td>
<td>Selected problems in painting, sculpture, and architecture of Italy in the 14th, 15th, and 16th centuries. 3-5 cl. Prereq: 315, 529, 531, or permission of instructor. Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>720</td>
<td>Studies in Near Eastern Art and Archaeology</td>
<td>3-5</td>
<td>Selected problems in the art and archaeology of the Near East. Prereq: 521 or 561 or 663, or equiv with permission of instructor. Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>721</td>
<td>Studies in Ancient Greek and Roman Art</td>
<td>3-5</td>
<td>Selected problems in the art of Ancient Greece and Rome, 11th century B.C. to 4th century A.D. 3-5 cl. Prereq: 619 or 620 or permission of instructor. Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>724</td>
<td>Studies in Northern Baroque Art</td>
<td>3-5</td>
<td>Selected problems in the painting, sculpture, and architecture of Belgium, the Netherlands, Germany, and France in the 17th and 18th centuries. 3-5 cl. Prereq: 632. Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>725</td>
<td>Studies in Italian Baroque Art</td>
<td>3-5</td>
<td>Selected problems in the painting, sculpture, and architecture of the 17th century. 3-5 cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>726</td>
<td>Studies in Spanish Art</td>
<td>3-5</td>
<td>Selected studies in the architecture, sculpture, painting, and minor arts of Spain. 3-5 cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>734</td>
<td>Studies in 18th Century European Art</td>
<td>5</td>
<td>Selected problems in the painting, sculpture, architecture, graphic, and decorative arts of the 18th century in Europe. 1-4 hr cl or 2-2 hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>736</td>
<td>Studies in the History and Theory of Architecture</td>
<td>5</td>
<td>Selected problems in the History and Theory of Architecture. 1-4 hr cl or 2-2 hr cl. Prereq: 559 or 558 or Arch 600-603 or Arch 501-803 or permission of instructor. Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>737</td>
<td>Studies in Modern Art</td>
<td>3-5</td>
<td>Selected problems in the art of the United States or modern Europe. 3-5 cl. Prereq: 600 level course in modern art, or permission of instructor. Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>745</td>
<td>Studies in Russian Art</td>
<td>3-5</td>
<td>Selected problems in the painting, sculpture, and architecture of Russia. Prereq: 645 or permission of instructor. Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>747</td>
<td>Studies in Late Gothic and Northern Renaissance Art</td>
<td>3-5</td>
<td>Selected problems in painting, sculpture, and the minor arts from the Low Countries, Germany, and France from the 14th through the 18th centuries. 3-5 cl. Prereq: 527 or permission of instructor. Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>750</td>
<td>Selected Topics in Cinema Studies</td>
<td>5</td>
<td>Intensive studies of specific movements, artists, periods and theories of cinema. 2-2 hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>770</td>
<td>Studies in Buddhist Art</td>
<td>3-5</td>
<td>Introduction to research in Buddhist art and iconography. 3-5 cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.</td>
</tr>
</tbody>
</table>
771 Studies in the Art of India UGRD 3-5
Research problems in the art of India. Repeatable to a maximum of 35 cr hrs.

774 Studies in Inner Asian Art UGRD 3-5
Introduction to research in Inner Asian history of art. Prereq: 673 or 674 or 677 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

776 Studies in Chinese Art UGRD 3-5
Introduction to research in Chinese art historical problems. Prereq: 677 or 678 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

780 Studies in Japanese Art UGRD 3-5
Introduction to research in Japanese art historical problems. Prereq: 681 or 682 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

783H Honors Research UGRD 3-5
A program of study arranged for each student, with individual conferences, reports, and honors thesis.

Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the hist art courses taken and with an average of 8 in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs. At least 2 qtrs are required of candidates for the degree BA with distinction in hist art. Failure to receive a mark of S in this course is a disqualification for special honors. This course is graded S/U.

793 Individual Studies UGRD 2-5
Advanced study for students in specialized programs. Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

797 Introduction to Graduate-level East Asian Studies GRAD 5
We explore the origin, development and current state of East Asian Area Studies in the U.S., including its relationship to the state and other intellectual disciplines.

Au, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the hist art courses taken and with an average of 8 in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs. At least 2 qtrs are required of candidates for the degree BA with distinction in hist art. Failure to receive a mark of S in this course is a disqualification for special honors. This course is graded S/U.

800 Wexner Center Seminar GRAD 1-5
Graduate seminar offered in conjunction with Wexner Center exhibitions, performance series, media series, or symposia; may be taught by visiting artists, performers, or critics.

Au, Wi, Sp Qtrs. Prereq: Two 600-level courses in contemporary African art or permission of instructor. Repeatable to a maximum of 15 cr hrs.

815 Practicum for Graduate Teaching Associates in the History of Art GRAD 2
A teacher-training and professional development workshop for new Graduate Teaching Associates in art history. Au, Wi Qtrs. 2 hr or 5, times a quarter. Open only to students with a GTA appointment in the department of history of art. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

816 Museum Problems GRAD 3-5
An introduction to professional work in museums. Repeatable to a maximum of 15 cr hrs.

822 Problems in Ancient Art GRAD 3-5
Advanced study and specialized research on major topical problems in ancient art.

Au, Wi Qtrs. 2 hr or 5, times a quarter. Open only to students with a GTA appointment in the department of history of art. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

824 Problems in Northern Baroque Art GRAD 3-5
Advanced study and specialized research on major topical problems in Northern Baroque Art. 3-5 cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

832 Problems in American Art GRAD 2-5
Problems in American Art.

Au, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

837 Problems in Modern European Art GRAD 5
Specialized topics in European art of the modern era.

Au, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

845 Seminar in Russian, Soviet, and East European Art GRAD 5
Advanced research on specialized topics on the art of the region.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in hist art. Repeatable to a maximum of 20 cr hrs.

890 Topics in Art History GRAD 3-5
A graduate-level equivalent of a course being offered at the 500-level.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in hist art. Repeatable to a maximum of 20 cr hrs.

893 Individual Studies GRAD 1-5
Doctoral students may register for individual study in areas not normally covered by courses.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

894 Group Studies GRAD 1-5
Group studies for students in specialized programs.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

917 Seminar in Medieval Art GRAD 2-5
Seminar in Medieval Art.

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

920 Seminar in Italian Renaissance Art GRAD 2-5
Seminar in Italian Renaissance Art.

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

930 Seminar in Modern Art GRAD 2-5
Seminar in Modern Art.

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

970 Seminar in Buddhist Art GRAD 3-5
Advanced research in Buddhist iconographic problems.

Au, Wi, Sp Qtrs. Prereq: Two of the following: 670, 671, 673, 677, 681, and 770; or permission of instructor. Repeatable to a maximum of 15 cr hrs.

971 Seminar in the Art of India GRAD 2-5
Research problems in the art of India. Repeatable to a maximum of 35 cr hrs.

976 Seminar in Chinese Art GRAD 3-5
Advanced studies in the history of Chinese art.

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

980 Seminar in Japanese Art GRAD 3-5
Advanced studies in the history of Japanese art.

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

999 Research in History of Art GRAD 1-18
Research for thesis and dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

Hons, University

296H University Honors Proseminar UGRD 3-5
Designed to foster an understanding of concepts, issues, and problems which transcend the boundaries of a single discipline; topic varies.

^ Au, Wi, Sp Qtrs. Prereq: Fresh or soph standing in an honors program and/or permission of instructor. Repeatable to a maximum of 15 cr hrs.

596H University Honors Seminar UGRD 2-5
Designed to foster appreciation, understanding and/or problem-solving skills related to concepts, issues, or problems that transcend the boundaries of a single discipline; topic varies.

^ Su, Au, Wi, Sp Qtrs. Prereq: Jr or sr standing in an honors program. Repeatable with permission of University Honors director.

Horticulture and Crop Science

150 Introduction to Horticulture UGRD 4
Guide to the applied practices associated with using and raising horticultural plants.

Wi Qtr. 3 cl, 1 2-hr lab. Not open to majors in landscape horticulture. Distance Education course - computer.

200 The Science of Growing Plants UGRD 5
Study of environmental, genetic, and cultural factors which influence the cultivation of plants for food, fiber, ornamental and landscape uses.

Au, Wi, Sp Qtrs. 5 cl. Prereq: Biology 101 or 113 or 115 or PCB 101 or Chem 101 or 121 or 201H. This course is available for EM credit. NS Admins Cond course. BER/LAR course. GEC bio sc course. Woofer offering taught winter quarter.

204 Design of Gardens and Small Properties I UGRD 5
Design of small-scale residential projects; master planning, use of plants and architectural materials, graphics.

Au Qtr. 3 cl, 3 lab hrs. Not open to students with credit for LArch 204. Cross-listed in Landscape Architecture. VPA Admins Cond course.

213 Sustainable Vegetable Production: Planning, Growing and Marketing UGRD 3
Introduction to small-scale farm planning and management through consideration of plant growth/production, farm design/management/operations, and produce marketing; relies heavily on learning from experience.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 450 or permission of instructor. Not open to students enrolled in 613.

234 Landscape Plants: Lecture UGRD 3
Overview of plants used in gardens and landscapes.

Wi, Sp Qtrs. 3 cl. Not open to students with credit for HCS 435, 436. Not open to students with credit for 234.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>234.02</td>
<td>Landscape Plants: Lab</td>
<td>UGRD  2</td>
<td>Overview of plants used in gardens and landscapes.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sp Qtr. 2 2-hr labs. Prereq: 234.01 or concurrent. Not open to students with credit for HCS 435, 436. Not open to students with credit for 244.</td>
</tr>
<tr>
<td>250</td>
<td>Introduction to Professional Golf Management</td>
<td>UGRD  2</td>
<td>Acquaints students with the OSU Professional Golf Management Program. Topics include program overview, components, requirements and facilities/resources available to students. Au Qtr. 1 1-hr cl, 1 2-hr discussion.</td>
</tr>
<tr>
<td>260</td>
<td>Data Analysis and Interpretation for Decision Making</td>
<td>UGRD  5</td>
<td>Basic concepts of probability and statistics applied to the interpretation of quantitative data. Au, Wi, Qtr. 4 cl, 1 2-hr rec/lab. Prereq: Math 130 or 148. Not open to students with credit for AM 270, A 271 or AEE 200.</td>
</tr>
<tr>
<td>300</td>
<td>General Plant Biology</td>
<td>UGRD  5</td>
<td>Plant structure and function; growth and development; diversity, reproduction, and evolution of lower and flowering plants; people, the biosphere, and plant diversity. Au, Wi, Qtr. 4 cl, 2 2-hr labs. Prereq: Biology 101 or 113 or 115H or PCMB 101 or PlantBio 101. Not open to students with credit for PlantBio 300 or PCMB 300. Honors embedded available. Cross-listed in Plant Biology. BER/LAR course. GEC data analysis course.</td>
</tr>
<tr>
<td>300E</td>
<td>General Plant Biology</td>
<td>UGRD  5</td>
<td>Plant structure and function; growth and development; diversity, reproduction, and evolution of lower and flowering plants; people, the biosphere, and plant diversity. Au, Wi, Qtr. Prereq: Biology 101 or 113 or 115H or PCMB 101 or PlantBio 101. Not open to students with credit for PlantBio 300 or PCMB 300.</td>
</tr>
<tr>
<td>305</td>
<td>Organic Gardening</td>
<td>UGRD  2</td>
<td>An overview and assessment of organic gardening practices for sustenance and recreation. Su, Au, Wi, Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.</td>
</tr>
<tr>
<td>310</td>
<td>Crop Responses to the Environment</td>
<td>UGRD  5</td>
<td>The physiological basis of crop responses to abiotic and biotic environmental factors. Wi Qtr. 4 cl, 1 2-hr lab. Prereq: 300 or PlantBio 300.</td>
</tr>
<tr>
<td>315</td>
<td>Plant Diversity in Managed Ecosystems</td>
<td>UGRD  5</td>
<td>Origin, diversification, and biogeography of plants inhabiting managed ecosystems. Sp Qtr. Prereq: 300 or PlantBio 300.</td>
</tr>
<tr>
<td>320</td>
<td>Plant Propagation: Manipulation of Plant Reproduction</td>
<td>UGRD  4</td>
<td>Techniques, equipment, and facilities involved in sexual and asexual multiplication of plants. Au Qtr. 3 cl, 1 2-hr lab. Prereq: 200 or 300.</td>
</tr>
<tr>
<td>321</td>
<td>Bedding Plant Production Techniques</td>
<td>UGRD  3</td>
<td>Study and application of commercial techniques for producing bedding plants. Sp Qtr.</td>
</tr>
<tr>
<td>325</td>
<td>Crop Genetic Resources</td>
<td>UGRD  4</td>
<td>Past, present, and future issues in germplasm conservation, ownership, and use for major food and ornamental crops. Includes practical uses of genetics in crop improvement. Sp Qtr. 2 2-hr cl. Prereq: 200 or 300.</td>
</tr>
<tr>
<td>350.01</td>
<td>Professional Development: PGA/PGM Rules and Club Design</td>
<td>UGRD  1</td>
<td>A series of seven courses which encompass learning objectives and work experience-related materials included in the PGA of America’s Golf PGM Program. Content associated with the PGA of America’s level 1 Checkpoint including rules of golf and golf club design and repair. Wi Qtr. 1 1-hr cl, 1 2-hr discussion. Prereq: Students in good standing in the PGM major. Subdivisions are not repeatable.</td>
</tr>
<tr>
<td>350.02</td>
<td>Professional Development: PGA/PGM Tournament Operations and Fleet Management</td>
<td>UGRD  1</td>
<td>A series of seven courses which encompass learning objectives and work experience-related materials included in the PGA of America’s Golf PGM Program. Content associated with the PGA of America’s level 1 Checkpoint including tournament operations and car fleet management. Sp Qtr. 1 1-hr cl, 1 2-hr discussion. Prereq: 350.01 and good standing in the PGM major. Subdivisions are not repeatable.</td>
</tr>
<tr>
<td>350.03</td>
<td>Professional Development: PGA/PGM Introduction to Teaching Golf</td>
<td>UGRD  1</td>
<td>A series of seven courses which encompass learning objectives and work experience-related materials included in the PGA of America’s Golf PGM Program. Content associated with the PGA of America’s level 1 Checkpoint including introduction to teaching golf. Wi Qtr. 1 1-hr cl, 1 2-hr discussion. Prereq: 350.02 and good standing in the PGM major. Subdivisions are not repeatable.</td>
</tr>
<tr>
<td>350.04</td>
<td>Professional Development: PGA/PGM Business Planning and Customer Relations</td>
<td>UGRD  1</td>
<td>A series of seven courses which encompass learning objectives and work experience-related materials included in the PGA of America’s Golf PGM Program. Content associated with the PGA of America’s level 2 Checkpoint including business planning and operations and customer relations. Au Qtr. 1 1-hr cl, 1 2-hr discussion. Prereq: 350.03; only students in good standing in the OSU Professional Golf Management program and who have passed all PGA of America Checkpoint 1 requirements may enroll. Subdivisions are not repeatable.</td>
</tr>
<tr>
<td>350.05</td>
<td>Professional Development: PGA/PGM Club Fitting and Swing Analysis</td>
<td>UGRD  1</td>
<td>A series of seven courses which encompass learning objectives and work experience-related materials included in the PGA of America’s Golf PGM Program. Content associated with the PGA of America’s level 3 Checkpoint including swing concepts and teaching. Au Qtr. 1 1-hr cl, 1 2-hr discussion. Prereq: 350.05; only students in good standing in the OSU Professional Golf Management program and who have passed all PGA of America Checkpoint 2 requirements may enroll. Subdivisions are not repeatable.</td>
</tr>
<tr>
<td>350.06</td>
<td>Professional Development: PGA/PGM Teaching Swing Concepts</td>
<td>UGRD  1</td>
<td>A series of seven courses which encompass learning objectives and work experience-related materials included in the PGA of America’s Golf PGM Program. Content associated with the PGA of America’s level 3 Checkpoint including swing concepts and teaching. Au Qtr. 1 1-hr cl, 1 2-hr discussion. Prereq: 350.05; only students in good standing in the OSU Professional Golf Management program and who have passed all PGA of America Checkpoint 2 requirements may enroll. Subdivisions are not repeatable.</td>
</tr>
<tr>
<td>350.07</td>
<td>Professional Development: PGA/PGM Supervision, Marketing and Inventory Control</td>
<td>UGRD  1</td>
<td>A series of seven courses which encompass learning objectives and work experience-related materials included in the PGA of America’s Golf PGM Program. Content associated with the PGA of America’s level 3 Checkpoint including supervising and delegating, merchandising and inventory control. Sp Qtr. 1 1-hr cl, 1 2-hr discussion. Prereq: 350.06; only students in good standing in the OSU Professional Golf Management program and who have passed all PGA of America Checkpoint 2 requirements may enroll. Subdivisions are not repeatable.</td>
</tr>
<tr>
<td>370</td>
<td>Sports Turf Management</td>
<td>UGRD  3</td>
<td>Issues pertaining to sports facility management, field surface playing quality, field renovation and management practices. Sp Qtr. 2 2-hr cl, 1 2-hr lab.</td>
</tr>
<tr>
<td>380</td>
<td>The Latino Workforce in Land Based Industries</td>
<td>UGRD  3</td>
<td>Overview of issues faced by immigrant workers in Land Based Industries (involving plants/animals) and cultural, historical and legal context affecting work relations with American supervisors. Au Qtr. Students who take this course will become familiar with various aspects of the immigrant and migrant workforce and also gather resources that they can use when the needs arise. They will learn some basic legal aspects of interacting with Latino workers, including important information regarding the organization of a temporary Latino workforce.</td>
</tr>
<tr>
<td>401.01</td>
<td>Industries and Organizations: The Floriculture Industry</td>
<td>UGRD  1</td>
<td>Field visits to industries and organizations where theory associated with Horticulture and Crop Science is practiced. Prereq: Permission of instructor. This course is graded S/U. Repeatable to a maximum of 3 cr hrs.</td>
</tr>
<tr>
<td>401.02</td>
<td>Industries and Organizations: Environmental Horticulture Organizations in Ohio</td>
<td>UGRD  1</td>
<td>Field visits to industries and organizations where theory associated with Horticulture and Crop Science is practiced. Prereq: Permission of instructor. This course is graded S/U. Repeatable to a maximum of 3 cr hrs.</td>
</tr>
<tr>
<td>404</td>
<td>Applied Landscape Horticulture Computer Graphics and Estimating</td>
<td>UGRD  5</td>
<td>Introduction to Computer Assisted Design (CAD), drafting, estimating for landscape horticulture/garden design students. Provides hands-on exposure to methods used in project concept and installation communication. Wi Qtr. Prereq: 204.</td>
</tr>
</tbody>
</table>
411 Grain Crops UGRD 3
Study of grain crops; classification, distribution, variety selection and improvement, cultural practices, harvesting, and utilization.
Wi Qtr. 3 cl. Prereq: 200 or 300.

412 Forage Crops UGRD 3
Growth characteristics, adaptation and utilization of different species for hay, pasture, silage, and land conservation.
Sp Qtr. 3 cl. Prereq: 200 or 300.

414 Crop Science Laboratory UGRD 2
Experimental approach to forage and grain crop growth and development with emphasis on the relationship of crop characteristics to management, quality, and utilization.
Sp Qtr. 1-3 hr lab, 1 day field trip. Prereq: 411 or 412.

420 Seed Science UGRD 4
A study of the physiological processes of seed formation, dormancy, and germination; the production and marketing of seed in commerce.
Wi Qtr. 3 cl, 1-2 hr lab. Prereq: 200 or 300.

422 Principles of Weed Science UGRD 4
A study of weeds, their identification, reproduction, and methods of control; emphasis on various aspects of chemical control measures.
Au, Sp Qtrs. 2 cl, 1-2 hr lab. Prereq: 200 or 300.

430 Indoor Gardening UGRD 4
The identification, maintenance, and use of plants for indoor decoration in the home, office, public buildings, and related locations.
Wi Qtr. 3 cl, 1-2 hr lab. Prereq: Biology 101 or 113 or 115H or PCMB 101 or PlntBio 101.

431 Herbaceous Ornamental Plants for Spring and Early Summer UGRD 3
Identification, culture and use of herbaceous ornamental plants for spring and summer.
Sp Qtr. 1.5 hr d, 1-3 hr lab. Prereq: 200 or 300 and 234.

432 Herbaceous Ornamental Plants for Summer and Fall UGRD 3
Identification, culture and use of herbaceous ornamental plants for mid- to late-season interest.
Au Qtr. 1.5 hr d, 1-3 hr lab. Prereq: 200 or 300.

435 Deciduous Shade Trees and Narrowleaf Evergreens UGRD 6
Study of deciduous shade trees and narrow leaf evergreens including their identification, growth habits, ornamental features, environmental adaptation, utilization, and management in the landscape.
Au Qtr. 2-2 hr d, 2-2 hr labs. Prereq: 200 or 300 and 234.

436 Deciduous Flowering Trees and Shrubs, Vines, and Broadleaf Evergreens UGRD 6
Study of deciduous flowering trees, flowering shrubs, vines, and broadleaf evergreens including their identification, growth habits, ornamental features, environmental adaptation, utilization, and management in the landscape.
Sp Qtr. 4 cl, 2-2 hr labs. Prereq: 200 or 300 and 234.

438 Theme and Specialty Gardens UGRD 2
Study of the principles and techniques of theme and specialty gardening.
Wi Qtr. 1-3 cl.

439 Design of Theme and Specialty Gardens UGRD 3
Theories introduced in HCS 438 are applied through research and creation of thematic buildable designs for specific sites. Students produce and present client quality designs.
Wi Qtr. Prereq: 204 and 438.

450 Principles of Vegetable Crop Production UGRD 4
The production and utilization of vegetable crops with emphasis on environmental factors which influence growing and handling of these crops.
* Sp Qtr. 3 d, 1-2 hr lab. Prereq: 200. Offered Odd years.

460 Crop Physiology and Production UGRD 5
Contemporary fruit crop production principles/practices and their physiological bases as affected by environmental and economic factors.
** Au Qtr. 2-2 hr cl, 1-2 hr lab. Prereq: 200 or 310 or permission of instructor. Offered every even years.

470 Principles of Turfgrass Selection and Management UGRD 4
Adaptation, identification, uses, growth characteristics, growth responses, and fundamental principles essential to the production of quality turf.
Au, Sp Qtrs. 2 cl, 1-2 hr cl. Prereq: 200 or 300.

488 Professional Development in Horticulture and Crop Science UGRD 1
Participation in structured co-curricular program leading to professional development (e.g. Weed, Turf, ALCA competition teams, etc.).
Su, Au, Wi, Sp Qtrs. Arr. Prereq: 2.00 CPHR and permission of instructor. Repeatable to a maximum of 3 cr hrs. This course is graded SU.

489 Internship Experience UGRD 1-5
Ten or more weeks of supervised practical experience in an approved enterprise. Seminar required.
Su, Au, Wi, Sp Qtrs. Prereq: 2 cl. Repeatable to a maximum of 10 or hrs. Class time TBA quarterly. Each student must present a 25 min seminar.

494 Group Studies UGRD 1-5
Special group studies in the areas of crop science, landscape horticulture, and turf science.
Au, Su, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 or hrs.

501 Landscape Plant Selection UGRD 5
Identifying the ‘right plant for the right place’ to develop ecologically appropriate landscapes.
Sp Qtr. 2 cl, 2-4 hr lab. Prereq: 234 or 431 or 435 or 436; 204 or Larch 204.

502 Management of Constructed Landscapes UGRD 5
Technical (weeds, pests) and business issues (labor, estimation, equipment) typical of landscape maintenance in Ohio, with emphasis on field experience.
Au Qtr. 2 cl, 1-4 hr lab. Prereq: Permission of instructor.

521 Greenhouse Crop Production UGRD 5
Principles and practices for the production of greenhouse crops.
Wi Qtr. 2-2 hr cl, 1-2 hr lab. Prereq: 200 and 300 or PlntBio 300. Not open to students with credit for 522.

533 Management of Commercial Nursery Operations UGRD 5
Detailed consideration of factors involving commercial nursery site selection, production, harvesting, and marketing of woody ornamentals and related products.
Wi Qtr. 4 cl, 3-3 hr lab. Prereq: 320.

560 Computers in Horticulture Management UGRD 4
Develops an understanding of the applications of computer software to the areas of production planning, control, and electronic marketing for horticultural enterprises.
Wi Qtr. 2-2 hr cl, 1-1 hr lab.

570 Turfgrass Management and Science UGRD 4
A study of cultural practices and environmental factors affecting the maintenance of quality turf.
Wi Qtr. 2 cl, 1-2 hr cl. Prereq: 470.

593 Individual Studies UGRD 1-5
Special studies in the areas of crop science, landscape horticulture, and turf science.
Au, Wi, Sp Qtrs. Prereq. 2.50 CPHR and written permission of instructor. Repeatable to a maximum of 5 or hrs. This course is graded S/U.

597 Issues in Biotechnology UGRD 5
Issues pertaining to the means and methods, products, prospects, safety, regulation, ethics, and societal effects of biotechnology.
Sp Qtr. 5 cl. Prereq: Biology 101 or 113, or PlntBio or PCMB 101 or equiv. and jr or sr standing.

598 Turfgrass Science Seminar UGRD 1
Academic and industry experts present information and lead discussion on current issues facing the turfgrass industry.
Sp Qtr. 1 cl. Prereq. Jr or sr standing in turf science, crop science, landscape horticulture, or permission of instructor. Repeatable to a maximum of 2 or hrs.

600 Issues in Horticulture and Crop Science UGRD 5
Examination of topical issues in HCS to prepare students for transition from university to workplace.
Au, Wi, Sp Qtrs. 2-2 hr lecture, 1 hr recitation. Prereq: Sr rank in any HCS major, HCS 200, 2nd writing course, HCS 489. Not open to students with credit for 601.

602 Field Crop Ecology UGRD 3
A study of the agroecosystem; the ecology of managed agricultural systems; the interrelationships of climates, soils, and organisms in crop production.
Sp Qtr. 3 cl. Prereq: 10 or hrs of crops courses and 5 or hrs of soils courses at the 300 level or higher.

604.01 Whole Plant Research Methods UGRD 4
Introduction to scientific skills and modern research methods for the study of plants at the whole plant level.
Au Qtr. Prereq. 300 or PlntBio 300 or PCMB 300 or 436 or Biology 114 or 436 or grad standing or permission of instructor. Not open to students with credit for these courses in PCMB or PlntBio or PlntPth. Cross-listed in Plant Biology and Plant Pathology.

604.02 Cell and Tissue Level Research Methods UGRD 4
Introduction to scientific skills and modern research methods for the study of plants at the cell and tissue level.
Wi Qtr. Prereq. 300 or PlntBio 300 or PCMB 300 or 436 or Biology 114 or 436 or grad standing or permission of instructor. Not open to students with credit for these courses in PlntBio or PlntPth. Cross-listed in Plant Biology and Plant Pathology.

604.03 Molecular Level Research Methods UGRD 4
Introduction to scientific skills and modern research methods for the study of plants at the molecular level.
Sp Qtr. Prereq. 300 or PlntBio 300 or PCMB 300 or 436 or Biology 114 or 436 or grad standing or permission of instructor. Not open to students with credit for these courses in PCMB or PlntBio or PlntPth. Cross-listed in Plant Biology and Plant Pathology.
244 Horticulture and Crop Science

605 Advanced Vegetable Crops Production and Physiology
A physiological study of the principal vegetable crops used for processing and fresh market; cultural practices are also considered.
** Wi Qtr. 3 1.5-hr cl. Prereq: Permission of instructor. Offered even years.

610 Weed Control in Horticultural Crops
A study of environmental and cultural factors which influence weed development in horticultural crops and a review of the principles of chemical and mechanical weed control.
Sp Qtr. 3 cl, 1 2-hr lab. Prereq: 300 or PCMB 300 or PlantBio 300.

612 Principles of Grassland Management
Plant-animal requirements and correlations in the maintenance, management, and utilization of meadows, pastures, and ranges.
Au Qtr. 5 cl and 1 field trip per qtr.

613 Sustainable Vegetable Production: Planning, Growing and Marketing
Introduction to small-scale farm planning and management through consideration of plant growth/production, farm design/management/operations, and produce marketing; relies heavily on learning from experience.
Prereq: 450 or permission of instructor. Not open to students enrolled in 213.

621 Crop Physiology
A study of basic physiological processes in plants and how they impact crop production and productivity.
Au Qtr. 5 cl. Prereq: 300 or PlantBio 300 or PCMB 300 or grad standing.

625 Crop Breeding
Principles of genetics and methods of plant breeding applied to the improvement of crops and the ultimate development of superior varieties.
Au Qtr. 3 cl, 1 2-hr lab. Prereq: 200 or 300.

630 International Seed Production
The study of seed production principles (from flowering/fruit set through seed quality assessment and seedling establishment) from a physiological and ecological perspective.
** Sp Qtr. 2 1.5-hr cl. Prereq: 420 or permission of instructor.

636 Mineral Nutrition of Plants
Process of uptake, transport, and metabolism of mineral nutrients, with emphasis on nitrogen, and on process at the tissue and cellular level.
** Sp Qtr. 2 1-hr cl. Prereq: PlantBio 630 or HCS 621 or equiv. Offered odd years.

665 Environmental Microbiology
The role of microorganisms and underlying biological principles in elemental cycles and degradation of natural and man-made compounds.
** Au Qtr. 3 cl. Prereq: Chem 251 and Microbiol 509 or 520. Not open to students with credit for Microbiol 665. Cross-listed in microbiology.

670 Golf Courses and Their Environments
Principles and practices of golf course design for sustainability.
Wi Qtr. 1 2-hr cl, 1 2-hr lab. Prereq: 270 or permission of instructor.

683H Honors Project
Conducting and reporting the honors project.
Su, Au, Wi, Sp Qtrs. Prereq: Agr 590,01H, enrollment in honors program, and permission of honors supervisor. Repeatable to a maximum of 10 cr hrs as 683H or in combination with 293, 593, 593H, 599H, 693, or 693H. This course is graded S/U.

693 Individual Studies
Special problems in crop science, landscape horticulture or turf science, not included in regular courses and involving library, laboratory, or field studies.
Su, Au, Wi, Sp Qtrs. Prereq: 2.50 CPHR and written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

694 Group Studies
Special group studies in the areas of crop science, landscape horticulture, and turf science.
Su, Au, Wi, Sp Qtrs. Prereq: 5 or grad standing. Repeatable to a maximum of 15 cr hrs.

697.01 Study at a Foreign Institution: The Constructed Landscape I: British and American Contrasts
An opportunity for students to study at a foreign institute and receive Ohio State credit for that work. Preparation for study of constructed landscapes in their geographic and social contexts at Myrescough College England.
Su Qtr. 4 2-hr cl, 2 2-hr labs. Prereq: Written permission of program coordinator. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as, travel and subsistence costs.

697.02 Study at a Foreign Institution: The Constructed Landscape II: Evolution of English Landscapes
An opportunity for students to study at a foreign institute and receive Ohio State credit for that work. Study of the factors that have shaped landscape horticulture in Britain.
Sp Qtr. Prereq: Written permission of program coordinator. Prereq: 438, 593 (2 cr). Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as, travel and subsistence costs.

697.03 Study at a Foreign Inst: Constructed Landscape III: Landscape Industry and Operations in Britain
An opportunity for students to study at a foreign institute and receive Ohio State credit for that work. Study of the structure and operations of landscape industries in Britain.
Su Qtr. Prereq: Written permission of program coordinator. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as, travel and subsistence costs.

697.04 Study at a Foreign Institution: Agriculture and Agro-Écossystems in Chile
An opportunity for students to study at a foreign institute and receive Ohio State credit for that work. 9-day study-abroad to introduce students to Chile and the many facets of the agricultural phenomena that has transformed Chile's place in the global market, focusing on the structure of Chilean agricultural system.
Au Qtr. Prereq: Concurrent registration in 593 or 693, written permission of program coordinator, and permission of instructor. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as, travel and subsistence costs.

697.05 Study at a Foreign Institution: Latinos in Land Based Industries: Going to the Source
An opportunity for students to study at a foreign institute and receive Ohio State credit for that work. An 8-day study tour in Mexico. Participants encounter the Latino workforce on their home ground and embrace their culture, history and geography and the effects of immigration.
Au Qtr. Prereq: Concurrent registration in 294 or 693, and permission of program coordinator. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as, travel and subsistence costs.

730 Seed Physiology
The study of seed development, maturation, storage, dormancy and germination from a physiological perspective.
** Sp Qtr. 3 1-hr cl. Prereq: 420 recommended or permission of instructor. Not open to students with credit for 631. Alternate even years.

761 Crop Secondary Products for Survival, Health and Welfare
The synthesis, metabolism and agricultural, industrial, medicinal or aesthetic uses of crop secondary products affecting our daily lives.
Wi Qtr. 2 2.5-hr cl. Prereq: 300 or PCMB 300, Chem 231 or equiv course.

804 Seminar
Seminar.
Au, Wi, Sp Qtrs. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

806 Methods in Plant Sciences
Study and application of methods in plant science.
Su, Au, Wi, Sp Qtrs. 2 hrs. Prereq: Grad standing. Repeatable to a maximum of 10 cr hrs.

821 Advanced Crop Physiology
An advanced study of the interaction of crops with their environment with special emphasis on the physiological basis for the responses to biotic and abiotic stress.
Au Qtr. 5 cl. Prereq: 621 or equiv. Not open to students with credit for 622.

825 Advanced Plant Breeding
Theory and methods of plant improvement; statistical genetics, methods for self- and cross-fertilizing crops, chromosomal manipulation.
** Sp Qtr. 2 1.5-hr cl. Prereq: 625 or 887 or permission of instructor.

830 Current Topics in Horticulture and Crop Science
Readings from the current literature will be examined in detail for both technical and conceptual content.
Su, Au, Wi, Sp Qtrs. 1 cl, 1 2-hr discussion. Prereq: Permission of instructor. Repeatable to a maximum of 16 cr hrs.

887 Techniques of Experimental Design
A study of experimental designs and their application to agricultural research.
Sp Qtr. 5 cl. Prereq: MoGen 650 or Stat 528 or permission of instructor.

894 Group Studies
Advanced topics in horticulture and crop science.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs.

993 Individual Studies
Students may select special problems not included in regular courses.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

999 Research
Research for thesis or dissertation research only.
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.
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468 Individual and Family Helping Skills UGRD 3

The study of various strategies and techniques used in working with individuals and families in the context of family service organizations.

Su, Au, Wi, Sp Qtrs. 2.5-hr cl. Prereq: 360 or 364. Only open to dept majors in family studies option.

560 Advanced Family Development UGRD 3

Explores family development and family relations across the lifespan, primarily from a family systems perspective.

Su, Au, Wi, Sp Qtrs. 2.1-5 hr cl. Prereq: 360 and 3/hr standing.

565 Supervised Infant-Toddler/Preschool Teaching UGRD 10-15

Student teaching in infant-toddler or preschool classrooms.

Au, Wi, Sp Qtrs. Full-time teacher’s schedule. Prereq: 464, 465.01, 4th yr standing in child development option, 2.50 CPRHR, and written permission of instructor. Dept application must be filed 2 qtrs in advance.

570 Adolescent Development: A Biopsychosocial Perspective UGRD 3

Comprehensive overview of the biological, psychological, and social development of the adolescent.

* Wi Qtr. 2.1-5 hr cl. Prereq: 364.

589.01 Introduction to Field Work UGRD 5-10

Planned professional experience with children, youth, or adults in a community agency/setting.

First quarter planned participation in community agency learning roles and responsibilities.

Au, Wi Qtrs. 12 hrs/wk at human service agency, 1 hr cl. Prereq: 466, 4th yr standing, 2.50 CPRHR, and written permission of instructor. Repeatable to a maximum of 10 or hrs. Dept application must be filed 2 qtrs in advance. Students must enroll in 2 consecutive qtrs of field work. Open only to dept majors in family studies option.

589.02 Advanced Field Work UGRD 5

Planned professional experience with children, youth, or adults in a community agency/setting.

Second quarter planned participation in community agency with increased responsibility for program development and evaluation.

Wi, Sp Qtrs. 12 hrs/wk at human service agency, 1 hr cl. Prereq: 589.01. Repeatable to a maximum of 10 or hrs. Students must enroll in 2 consecutive qtrs of field work. Open only to dept majors in family studies option.

590 Practicum in Human Development and Family Science Research UGRD 1-5

Provides students with opportunity to work individually with faculty member on research project.

Su, Au, Wi, Sp Qtrs. Arr. Prereq. Jr or sr standing; Psych 220 or equivalent, and permission of instructor. Repeatable to a maximum of 10 or hrs. This course is graded S/U.

593 Individual Studies UGRD 1-5

Problems in various phases of human development and family science chosen for individual study. 593H (honors) may be available.

Su, Au, Wi, Sp Qtrs. 1 or more conf. Prereq. Written permission of instructor and completion of individual study plan form. Repeatable to a maximum of 10 or hrs. This course is graded S/U.

595 Professional Development UGRD 2

The professional: performance, role in society, position securement, involvement in organizations, and continuing development.

Su, Au, Wi, Sp Qtrs. 1.5-hr cl. Prereq. 4th yr standing in HDFS and completion of a minimum of 20 cr hrs in major in dept.

597.01 International Family Issues: Middle East UGRD 5

A practical problem-solving approach to the study of perennial family issues within the context of a given region of the world.

Au, Wi Qtrs. Prereq. Sr standing. Not open to students with credit for FCSEd 597.01. LAR contemporary issues course. GEC contemporary world course.

597.02 International Family Issues: Sub-Saharan Africa UGRD 5

A practical problem-solving approach to the study of perennial family issues within the context of a given region of the world.

Au, Wi Qtrs. Prereq. Sr standing. Not open to students with credit for FCSEd 597.02. LAR contemporary issues course. GEC contemporary world course.

650 Foundations of Couple and Family Therapy UGRD 4

Overview and development of key theories of couple and family therapy.

Au, Sp Qtrs. 1.3-5 hr cl. Prereq: Permission of instructor.

660 Children and Their Families Under Stress UGRD 3

Examination of normative and developmental stressors and crises that impact on the development of children; implications for practitioners drawn from conceptual frameworks and recent research.

Su, Au, Wi Qtrs. 2.1-5 hr cl. Prereq: 360 or 364 or Social 430 or Psych 340, and rank 3 or grad standing.

662 Multicultural Programming for Young Children UGRD 3

Utilizing a variety of teaching and learning methods, students begin to develop an understanding of and appreciation for the diversity and how it relates to programming for young children.

Su, Au, Wi, Sp Qtrs. 1.25- hr cl.

663 Infant Development UGRD 3

Infant development during first two years of life with special consideration of bases of support for provision of effective care.

Au Qtr. 1.2-hr cl, 1.2-hr lab arr. Prereq: 361 or 363 or Psych 550.
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665 Parenting UGRD 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.
Su, Au, Wi, Sp Qtrs. 2.15-hr cl. Prereq: 360 or 364 or Social 430 or Psych 340, and rank 3 or grad standing.

667 Administration of Agencies Serving Children and Families UGRD 3
Study of the administration of child care program and other family service agencies; topics include program objectives, regulations, program development and evaluation, staff development and training, and budget and funding.
Su Qtr. 2.5-hr cl. Prereq: 465.01 or 465.02 or equiv and written permission of instructor.

669 Comparing Program Philosophies for Young Children UGRD 3
Exploration of a variety of philosophies and resultant practices in caring for and educating young children in day care and pre-school situations.
Wi Qtr. 2.15-hr cl. Prereq: 464, or permission of instructor, and sr or standing or higher.

670.01 Adult Developmental Issues: Adult Development and Aging UGRD 3
A series of courses focusing on issues, attitudes, behaviors and social exchanges pertinent to adult development, including the experience of normal and non normative aging. Examination of change and continuity in human development from very old age using a psycho-social-biological perspective.
Su, Wi Qtrs. 1.25-hr cl. Prereq: 360 or 364 or Social 430 or Psych 340, and rank 3 or grad standing.

670.02 Adult Developmental Issues: Human Sexuality UGRD 3
A series of courses focusing on issues, attitudes, behaviors and social exchanges pertinent to adult development, including the experience of normal and non normative aging. Examination of the intellectual, physical, and social-emotional aspects of human sexuality. Focus on how sexual issues impact human development, attitudes, relationships, values and choices.
Au, Wi, Sp Qtrs. 1.25-hr cl. Prereq: 360 or 364. Graduate students must concurrently register for 1 or hr of HDFS 793.

670.03 Adult Developmental Issues: Courtship and Marriage UGRD 3
A series of courses focusing on issues, attitudes, behaviors and social exchanges pertinent to adult development, including the experience of normal and non normative aging. A comprehensive overview of the processes of courtship and marriage.
Au, Wi, Sp Qtrs. 1.25-hr cl. Prereq: 360 or 364 and jr or higher standing.

670.04 Formal and Informal Support Systems of Older Adults UGRD 3
A series of courses focusing on issues, attitudes, behaviors and social exchanges pertinent to adult development, including the experience of normal and non normative aging. Consideration of issues and problems pertinent to support systems of older adults. Special topics seminar with a content focus on child development.
Sp Qtr. 1.25-hr cl. Prereq: 360, 364, and jr or higher standing.

689.01 Advanced Child Development Practicum UGRD 3-5
Special advanced supervised teaching experience with children ages three to five; emphasis on analysis of relationships among teacher behaviors, child characteristics, environmental factors, and learning outcomes.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: 465.01, 465.02, 3rd or 4th yr standing, 2.25 CPHR, and written permission of instructor. Application must be approved by instructor the quarter preceding registration. Repeatable to a maximum of 8 cr hrs.

689.02 Curriculum Planning and Interdisciplinary Strategies for Serving Delayed Young Children UGRD 3-5
An opportunity for putting professional research and theory into practice by teaching, administrative, and agency experiences under supervision in university or agency settings. Practicum experience for students who are interested in working with moderately, severely and profoundly developmentally delayed young children and their families in an educational setting. Special field experience in family service agencies for students with unique interests, such as hospitalized children or the elderly.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: 361 or equiv, and Psych 571 or EdS 815 or EduPAES 460, 3rd or 4th yr standing, 2.25 CPHR, and written permission of instructor. Application must be approved by instructor the quarter preceding registration. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

689.03 Advanced Family Services Practicum UGRD 3-5
An opportunity for putting professional research and theory into practice by teaching, administrative, and agency experiences under supervision in university or agency settings. Special field experience in family service agencies for students with unique interests, such as hospitalized children or the elderly.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: 3rd or 4th yr standing, 2.25 CPHR, and written permission of instructor. Application must be approved by instructor the quarter preceding registration. Prereq: 360 or permission of instructor. Repeatable to a maximum of 6 cr hrs.

689.04 Advanced Infant-Toddler Practicum UGRD 3-5
An opportunity for putting professional research and theory into practice by teaching, administrative, and agency experiences under supervision in university or agency settings. Advanced supervised teaching experience with children birth to three years of age.
Su, Au, Wi, Sp Qtrs. 2 hrs lab time weekly/credit hr enrolled. Prereq: 3rd or 4th yr standing, 2.2 CPHR, and written permission of instructor. Application must be approved by instructor the quarter preceding registration. Prereq: 365 or permission of instructor. Repeatable to a maximum of 8 cr hrs.

694 Group Studies UGRD 2-5
Selected topics in human development and family science. Prereq: Open to students who meet dept's stated prereq. Repeatable to a maximum of 10 cr hrs.

695.01 Special Topics in Child Development UGRD 3
Review, interpretation, and evaluation of current literature and research in defined areas. Special topics seminar with a content focus on child development. Prereq: 360, 361, and sr or grad standing.

695.02 Special Topics in Family Development UGRD 3
Review, interpretation, and evaluation of current literature and research in defined areas. Special topics seminar with a content focus on family development. Prereq: 360, 361, and sr or grad standing.

697 Study at a Foreign Institution UGRD 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This course is Progress (P) graded. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

698.01 Study Tour: Domestic UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only. This course is graded S/U.

698.02 Study Tour: Foreign UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only. This course is graded S/U.

699 Undergraduate Research in Human Development and Family Science UGRD 0-15
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 20 cr hrs. This course is graded S/U.

701.02 Issues in HDFS: Program Development GRAD 1
Current issues and trends and methods in the interdisciplinary curricula and instructional resources in the field of human development and family science.
Prereq: Jr, Sr or grad standing in HDFS or permission of instructor. This course is graded S/U.

701.03 Issues in HDFS: Research GRAD 1
Current research trends and methods in the interdisciplinary field of human development and family science.
Prereq: Jr, Sr or grad standing in HDFS or permission of instructor.

719 Early Intervention Interdisciplinary Team Dynamics GRAD 3
Interdisciplinary team-taught course with a focus on early intervention/early childhood education services for children birth to three and their families.
Au Qtr. 2.5-hr cl. Prereq: Permission of instructor. Not open to students with credit for AllMed 710, EduPAES 719, Nursing 719, or Speech 719. Cross-listed in Education: Physical Activity and Educational Services, Nursing, and Speech and Hearing Science.

760 Research Process Analysis GRAD 5
Overview of research methods and related conceptual issues relevant to study of human development and family science; creative approaches to research problems.
Au Qtr. 1.25-hr cl, 2 hr lab. Prereq: An undergraduate research methods class.

764 Foundations and Issues in Family Science GRAD 4
Theory, research, and methods used to study family development; individual and family developmental tasks over the life span; personal and social context of family development.
Au Qtr. 1.25-hr cl, 2 hrs arr. Prereq: 360 and 364, or equiv with written permission of instructor.

765 Advanced Child Development GRAD 4
Growth and development of children through adolescence with emphasis on maturation patterns and individual differences.
Wi Qtr. 2.5-hr cl, 2 hrs arr. Prereq: 360, and 361 or Psych 550, or equiv with written permission of instructor.

770 Ethical and Professional Issues in Couple and Family Therapy GRAD 4
A preclinical introduction to the central issues and resources in professional development, including personal growth, legal responsibilities, regulation, ethics, and special areas of practice.
Wi Qtr. 3.5-hr cl.

793 Individual Studies UGRD 1-5
Problems in various phases of human development and family science.
Su, Au, Wi, Sp Qtrs. 1 or more cr. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.
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810 Divorce and Remarriage GRAD 3
Analysis of research and theory pertaining to the process of marital dissolution, adjustment, and remarriage.
Wi Qtr. 1 3-hr cl. Prereq: 764 and 765 or equiv and permission of instructor, 6 cr hrs in research methods, design, or statistics.

820 Family Theory GRAD 3
Explores major theoretical perspectives of the field of family science as well as strategies for developing theory.
Wi, Sp Qtrs. 1 2.5-hr cl. Prereq: 764.

824 General Systems Theory GRAD 4
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.
Au Qtr.

825 Theories of Development Across the Lifespan GRAD 3
Examination of foundational theories of human development with an emphasis on evaluating, comparing and contrasting the major theories.
Wi Qtr. 1 2.5-hr cl. Prereq: 764; 765; doctoral standing or permission of instructor.

840.01 Seminars in Adolescence: Adolescents and Their Families GRAD 3
A multidisciplinary analysis of theory and research bearing on the topic of changing parent-child relationships and roles during the period when children are adolescents.
Au Qtr. 1 2.5-hr cl. Prereq: 760, 764, 765; or permission of instructor. One of series will be offered each year.

840.02 Seminars in Adolescence: The Differentiation Process and the Social Context GRAD 3
Comprehensive overview of the differentiation construct's utilization in family theory, research, and clinical practice.
Sp Qtr. 1 2.5-hr cl. Prereq: 760, 764, 765; or permission of instructor. One of series will be offered each year.

840.03 Seminars in Adolescence: The Individuation Process in the Context of the Family GRAD 3
A review and analysis of research on the process of individuation during the developmental period of adolescence in the context of the family.
Wi Qtr. 1 2.5-hr cl. Prereq: 760, 764, 765; or permission of instructor. One of series will be offered each year.

840.04 Seminars in Adolescence: Risks in Context GRAD 5
Examines the ways that social relationships and contexts (family, peers, community, etc) shape development, specifically risk and problem behavior during the adolescent period. 1 3-hr cl, 1 2-hr lab. Prereq: 760, 764, 765; or permission of instructor. One of series will be offered each year.

850 Measurement and Assessment in the Study of Children and Families GRAD 3
Examination of measurement techniques, instruments, and methods which are used by family researchers to assess children and families.
Au Qtr. 1 2.5-hr cl. Prereq: 760 and one other research course or permission of instructor.

851 Practicum in Research GRAD 1-5
Participation in the research process under the supervision of a faculty member.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Grad standing and permission of instructor. Repeatable to a maximum of 20 cr hrs. A maximum of 5 hrs of 851 may be included in student's program of study. This course is graded S/U.

852 Practicum in Teaching GRAD 1-5
Supervised college teaching experience for department graduate students.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Grad standing and permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

861 The Family: Middle and Later Years GRAD 3
The interrelationship and adjustment of families with emphasis on the middle and later years of the life cycle.
* Au Qtr. 1 2.5-hr cl. Prereq: 764 or equiv with written permission of instructor, and 6 cr hrs in research methods, design, or stat.

862 Seminar in Human Development and Family Science GRAD 3
Topics to be announced.
Au, Wi, Sp Qtrs. 1 2.5-hr cl. Prereq: Grad standing in HumanEc or written permission of instructor; and 6 cr hrs in research methods, design or stats. Repeatable to a maximum of 24 cr hrs.

863 Infant Caregiving Contexts GRAD 3
Review and critical analysis of recent theoretical and research literature relevant to the design and evaluation of infant care settings.
Sp Qtr. 1 2.5-hr cl. Prereq: 663 or equiv with permission of instructor, and 6 cr hrs in research methods, design, or stat.

864 Contemporary Issues in Group Experiences for Young Children GRAD 3
Identification and examination of current practices in group experiences for children under five; emphasis on current issues, relevant research and theory as related to curriculum.
Sp Qtr. 1 2.5-hr cl. Prereq: 15 or hrs of child development and/or child psychology, supervised student teaching or experience in nursery schools or day care centers, and 3 cr hrs in research methods, design, or stat.

865 Play and Development GRAD 3
Examination of research on play, including development, special populations, and ways of encouraging and studying play.
Au Qtr. 1 2.5-hr cl. Prereq: 765 or equiv or grad course in human development or play, or permission of instructor.

867.02 Current Trends and Issues: Men in Families GRAD 3
A developmental analysis and assessment of the empirical and theoretical literature on male role performance in family systems with implications derived for research and social policy.
* Sp Qtr. Prereq: 764 and 765 or equiv; 6 cr hrs in research methods, design or stats, or permission of instructor. Repeatable to a maximum of 12 cr hrs.

867.03 Current Trends and Issues: Women in Families GRAD 3
An analysis and assessment of the theoretical and empirical literature on women's roles in family systems.
* Au Qtr. Prereq: 764 and 765 or equiv; 6 cr hrs in research methods, design or stats, or permission of instructor. Repeatable to a maximum of 12 cr hrs.

870 Family Systems Assessment GRAD 4
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.
Sp Qtr. 3.5-hr cl. Prereq: 760 and 770.

874 Family Therapy Theory I GRAD 4
An emphasis on the theoretical orientation of the structural, strategic, MRI, and Milan approaches to family therapy.
Au Qtr. 1 3.5-hr cl. Prereq: 650 or permission of instructor.

875 Family Therapy Theory II GRAD 4
An emphasis on the theoretical orientation of the intergenerational, behavioral, experimental and solution-focused approaches to family therapy.
Wi Qtr. 1 3.5-hr cl. Prereq: 650 or permission of instructor.

876 CoupleTherapy Theory GRAD 4
An emphasis on theoretical approaches, intervention techniques, and basic issues or problems of application for couple therapy.
Au Qtr. 3.5-hr cl. Prereq: 874 or 875.

878 Supervision of Couple and Family Therapy GRAD 4
Preparation of Couple and Family Therapy doctoral students to provide supervision of therapy.
* Su Qtr. 1 2-hr cl; 4 hrs, practicum. Prereq: 889 and enrolment in Couple and Family Therapy Program, or permission of instructor.

880 Seminar in Couple and Family Therapy GRAD 4
Topics to be announced.
Su, Wi, Sp Qtrs. 3.5-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

881 Research in Couple and Family Therapy GRAD 4
Explore major design, measurement and analysis strategies for conducting and understanding couple and family therapy research.
Wi Qtr. 1 3.5-hr cl. Prereq: 6 hrs of measurement, design or analysis.

889 Practicum in Couple and Family Therapy GRAD 1-3
Supervised practice in couple and family assessment and intervention in the department's couple and family therapy clinic.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

984 Group Studies GRAD 3-5
Selected topics in human development and family science.
Prereq: 6 cr hrs in research methods, design or stat; and stated prerequisites for specific topics. Repeatable to a maximum of 10 cr hrs.

998 Research: Thesis GRAD 1-18
Research for master's thesis.
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

999 Research: Dissertation GRAD 1-18
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.
Human Ecology Survey  UGRD  1
Introduction to Human Ecology programs and survey of university policies and procedures.  
Au, Wi, Sp Qtrs.

The Science of Human Nutrition  UGRD  5
Basic principles of biological science involving interactions between nutrients and physiological processes with emphasis on implications for human health.  
Su, Au, Wi, Sp Qtrs.  5 cl.  Prereq: Biology 101 or equiv.  Not open to students with credit for 310.  BERR/LAR course.  GEC bio sci course.

Nutrition and Dietetic Careers  UGRD  2
Exploration of careers in nutrition/dietetics through self-assessment, informational interviews and employer presentations; information on internships and job search strategies.  
Wi Qtr.  1.5-hr cl.

Fundamentals of Human Nutrition  UGRD  5
Nutrient and food energy needs of the human biological system throughout the life cycle with consideration of socio-psychological factors.  
Au, Wi, Sp Qtrs.  5 cl.  Prereq: Biology 101, 110, 113 or equiv; Chem 101 or 121 and Chem 102 or 122.  This course is available for EM credit.

Food in Different Cultures  UGRD  3
Food practices of selected peoples of the world with consideration of the existing social, cultural, and economic conditions.  
Sp Qtr.  3 cl.  Prereq: 10 hrs of social science.

Fundamentals of Food  UGRD  5
Application of chemical and physical principles to food preparation and use.  
Wi Qtr.  2-hr cl, 3-hr lab.  Prereq: 10 hrs of chem.

Issues and Controversies in Nutrition  UGRD  3
An overview of "hot" topics in nutrition with a focus on critical appraisal of the research basis for issues and alternative viewpoints.  
Au, Wi, Sp Qtrs.  2.5-3 hr cl.  Prereq: 310 or permission of instructor.

Foodservice Sanitation and Safety  UGRD  3
Organization of a program of foodservice sanitation and safety.  
Wi Qtr.  2.5-hr cl.

Nutrition Education  UGRD  3
Contemporary theories and models of health education related to individuals, groups and communities and applied to field of nutrition. Practical experiences in applying knowledge.  
Wi Qtr.  2.15-hr cl.  Prereq: 310.

Nutrition: The Life Cycle  UGRD  3
Food and nutrient needs throughout various phases of the life cycle.  
Au Qtr.  3-hr cl.  Prereq: 310 or equiv with permission of instructor.

Professional Experience Internship in Human Nutrition  UGRD  3-5
Supervised pre-planned employment experience with approved biomedical or medical professional; written comprehensive report required.  
Su, Au, Wi, Sp Qtrs.  Art.  Prereq: 310 or AnimSci 330; Biology 113, 114; Chem 121, 122, 123; 251, 252, 254, EEOB 232 or AnimSci 310.  Min rank 3 and HumNtr major.  This course is graded S/U.

Individual Studies  UGRD  1-10
Problems in various phases of human nutrition chosen for individual study.  593H (honors) may be available.  
Su, Au, Wi, Sp Qtrs.  Prereq: Minimum of 6 cr hrs in subject matter of problem with cumulative point-hour ratio of 2.70 or written permission of instructor.  Repeatable to a maximum of 10 cr hrs.  1 or more conf.  This course is graded S/U.

Advanced Professional Development  UGRD  1
Advanced professional development issues in dietetics: Leadership, marketing, continuing education, licensure, preparation for accredited practice experience/graduate education.  
Au Qtr.  1 cl.  Prereq: 295 or 595.  Open only to seniors in dietetics.  Required for students applying for dietetic internships.

Advanced Human Nutrition  UGRD  5
Interrelationships of nutrition and human biological functions.  
Au Qtr.  3.15-hr cl.  Prereq: 310 or AnimSci 330, Biochem 211 and 212 or 511 or MolBioCh 311 and 312, EEOB 232 or PhysioCB 311 and 312, or grad standing.

Nutrition and Chronic Disease  UGRD  5
Exploration of relationships between nutrition, dietary intake and chronic disease; introduction to medical nutrition therapy; study of scientific rationale behind applying nutrition principles to diet.  
Wi Qtr.  3.15-hr cl.  Prereq: 610 or MedDiet 545.

Medical Nutrition Therapy  UGRD  5
The role of medical nutrition therapy in the treatment of established disease with emphasis on the biochemical and physiological rationale for dietary modifications.  
Sp Qtr.  3.15-hr cl.  Prereq: 610 or MedDiet 545, 611 and MedDiet 546.  Not open to students with credit for 612.01 or 612.02.

Group Studies  UGRD  1-5
Selected topics in human nutrition.  
Prereq: Open to students who meet dept's stated prereq.  Repeatable to a maximum of 10 cr hrs.

Study at a Foreign Institution  UGRD  1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.  
Su, Au, Wi, Sp Qtrs.  Prereq: Written permission of dept chairperson.  Repeatable to a maximum of 45 cr hrs.  This course is Progress (P) graded.  Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

Study Tour: Domestic  UGRD  1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.  
Prereq: Permission of instructor.  Repeatable for different titled study tours only.  This course is graded S/U.

Study Tour: Foreign  UGRD  1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.  
Prereq: Permission of instructor.  Repeatable to a maximum of 20 cr hrs.  This course is graded S/U.

Undergraduate Research in Human Nutrition  UGRD  0-15
Undergraduate research in areas of study related to the unit and the instructor's research agenda.  699H (honors) may be available.  
Prereq: Permission of instructor.  Repeatable to a maximum of 20 cr hrs.  This course is graded S/U.

Nutrition Programs and Services in the Community  UGRD  3
Study of nutrition in the community including nutrition resource assessment, program goals, target audiences, funding, legislation, policy formation, quality assurance and delivery of programs.  
Sp Qtr.  2 cl, 2 3-hr lab.  Prereq: 504 and 506.

Nutrition and Exercise  UGRD  3
Theoretical and applied framework for making dietary decisions for exercising populations.  
Wi Qtr.  2 cl, 3-hr lab.  Prereq: Advanced coursework in Nutrition, Physiol and Biochem and permission of instructor.

Physiological Basis for Food Utilization  UGRD  5
Advanced concepts of human nutrition integrating physiological, biochemical, and nutritional functions relevant to food utilization.  
Wi Qtr.  3.15-hr cl.  Prereq: 610 or equiv.

Carbohydrate and Lipid Metabolism  UGRD  5
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.  
Wi Qtr.  3.15-hr cl.  Prereq: Biochem 511 or equiv; HumNtr 610 or AnimSci 630.01 OR grad standing or permission of instructor.  Not open to students with credit for FdScTe 761 or AnimSci 761.  Cross-listed in Food Science and Technology and Animal Sciences.

Principles of Nutrient Metabolism  UGRD  5
In-depth examination of the cellular and molecular mechanisms responsible for regulation of nutrient transport and metabolism with focus on the utilization of dietary protein.  
Au Qtr.  3.15-hr cl.  Prereq: Biochem 511 or equiv; HumNtr 310 or AnimSci 330 OR grad standing or permission of instructor.  Not open to students with credit for FdScTe 762 or AnimSci 762.  Cross-listed in Food Science and Technology and Animal Sciences.

Vitamin and Mineral Metabolism  UGRD  5
In-depth treatment of biochemical functions, absorption, transport, utilization, interrelationships and nutritional requirements of the vitamins and minerals in humans and other higher animals.  
Sp Qtr.  3.15-hr cl.  Prereq: Biochem 511 or equiv; HumNtr 610 or AnimSci 630.01 or 630.02 OR grad standing or permission of instructor.  Not open to students with credit for AnimSci 763 or FdScTe 763.  Cross-listed in Animal Sciences and Food Science and Technology.

Practicum in Community Nutrition  UGRD  0-4
Supervised practice in community assessment, program development and delivery of programs and services to promote health and nutrition.  
Au Qtr.  3-6 hr/wk.  Prereq: 101 cl.  Permission of instructor.  Repeatable to a maximum of 12 hr hrs.

Practicum in Medical Nutrition Therapy  UGRD  4
Supervised practice in medical nutrition therapy.  
Wi Qtr.  36 hr/wk.  Prereq: Nutrition Education, Medical Nutrition Therapy, Permission of instructor.

Practicum in Nutrition and Food Management  UGRD  4
Supervised practice in applying concepts of management to nutrition of food programs and services.  
Sp Qtr.  36 hr/wk.  Prereq: Permission of instructor.
Human Nutrition

793 Individual Studies UGRD 1-10
Problems in various phases of human nutrition chosen for individual study. Su, Au, Wi, Sp Qtrs. 1 or more conf. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

802.02 Seminar: Advanced Topics in Human Nutrition GRAD 3
Advanced Topics in Human Nutrition.
A Su, Au, Wi, Sp Qtrs. Prereq: Advanced course work in seminar topic. Repeatable to a maximum of 15 cr hrs.

802.04 Seminar: Human Nutrition GRAD 3
Human Nutrition.
Au Qtr. Prereq: Advanced course work in seminar topic. Repeatable to a maximum of 15 cr hrs.

804 Advanced Community and International Nutrition GRAD 5
Prepares students for nutrition field studies in immigrant or international communities. Students gain knowledge and skills to plan, implement and evaluate a community or international project. Prereq: 3.1-5 hr cl. Prereq: 704 or equiv community nutrition course or permission of instructor. Offered during odd numbered years.

806 Advanced Nutrition Education GRAD 5
Teaches nutrition education skills related to theories, models and methodologies for designing, implementing and evaluating community-based programs in nutrition education. Prereq: 3.1-5 hr cl. Prereq: 704 or permission of instructor. Offered during even numbered years.

830.01 Advanced Studies: Energy/Lipids GRAD 5
Advanced concepts in nutrition: Energy/Lipids. Prereq: 610 or AnimSci 530; FdScTe 761 and 762; 10 grad cr hrs in Physiol. Not open to students with credit for AnimSci 830 or FdScTe 830. Cross-listed in Animal Sciences and Food Science and Technology.

830.02 Advanced Studies: Vitamins/Minerals GRAD 5
Advanced concepts in nutrition: Vitamins/Minerals. Prereq: 610 or AnimSci 530; FdScTe 761 and 762; HumnNtr 763; 10 grad cr hrs in Physiol. Not open to students with credit for AnimSci 830 or FdScTe 830. Cross-listed in Animal Sciences and Food Science and Technology.

830.09 Advanced Studies: Food and Nutritional Toxicology GRAD 3
Advanced concepts in nutrition. Basic principles in food and nutrition toxicology focused on interactions of nutrients and food toxins, role of diet in mutagenesis and carcinogenesis and safety assessment. Prereq: 610 or AnimSci 530 or AnimSci 630.01 and 630.02 or permission: FdScTe 761 and 762; 10 grad cr hrs in Physiol. Not open to students with credit for AnimSci 830 or FdScTe 830. Cross-listed in Animal Sciences and Food Science and Technology.

830.10 Advanced Studies: A Comprehensive Approach to Food Safety GRAD 3
Advanced concepts in nutrition. Course provides a comprehensive overview of food safety issues, challenges and solutions across the food chain from farm to table. Prereq: 610 or AnimSci 530; FdScTe 761 and 762; 10 grad cr hrs in Physiol or Microbiol 500 and introductory level course in nutrition or food science or permission of instructor. Not open to students with credit for AnimSci 830 or FdScTe 830. Cross-listed in Animal Sciences and Food Science and Technology.

830.11 Advanced Studies: Nutrition-Endocrine Interactions in Women's Health GRAD 4
Advanced concepts in nutrition. Examination of the historical and emerging research in the area of diet-endocrine interactions and women's health. Prereq: 610 or AnimSci 530; 761, 762 or FdScTe 761, 762 or AnimSci 761, 762 or grad standing or permission of instructor: 10 grad cr hrs in Physiol. Not open to students with credit for AnimSci 830 or FdScTe 830. Cross-listed in Animal Sciences and Food Science and Technology.

830.12 Advanced Studies: Diet, Nutrition and Cancer GRAD 4
Advanced concepts in nutrition. Analysis of linkages between diet, nutrition and cancer including dietary interactions with molecular and metabolic processes involved in carcinogenesis and current research methodologies. Prereq: 610 or AnimSci 530; FdScTe 761 and 762; 10 grad cr hrs in Physiol; Grad standing or permission of instructor. Not open to students with credit for AnimSci 830 or FdScTe 830. Not open to students with credit for FdScTe 830.12 and AnimSci 830.12. Cross-listed in Animal Sciences and Food Science and Technology. Cross-listed with FdScTe 830.12 and AnimSci 830.12.

889 Nutrition Research: Principles and Techniques GRAD 3
Introduction to principles and techniques frequently used for evaluating dietary adequacy, nutritional status and nutrient metabolism and function. Au Qtr. 2 cl, 3 hrs lab. Prereq: Grad standing or permission of instructor.

890 Nutrition Field Research Experience GRAD 1-5
Individual graduate students will participate in field research. Students will travel to location for their project. A contract will establish the expectations for the experience. Su Qtr. Prereq: 804 or permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

894 Group Studies GRAD 3-5
Selected topics in human nutrition. Prereq: Open to students who meet dept's stated prereq. Repeatable to a maximum of 10 cr hrs.

895 Seminar GRAD 1
Presentations by students, faculty, and visiting scientists with critical discussion of issues in human nutrition. Prereq: Wi Qtrs. Arr. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

898 Interdepartmental Seminar in Nutrition GRAD 1
A seminar in nutrition and related fields. Sp Qtr. Repeatable to a maximum of 5 cr hrs. Cross-listed in Animal Sciences, and Food Science and Technology. This course is graded S/U.

899 Interdepartmental Seminar GRAD 1-5
Two or more departments may collaborate in presenting seminars on subjects of mutual interest; topics to be announced.

993 Individual Studies UGRD 1-10
Problems in various phases of human nutrition chosen for individual study. Prereq: Open to students who meet dept's stated prereq. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

998 Research: Thesis UGRD 1-18
Research for master's thesis. Su, Au, Wi, Sp Qtrs. Prereq: 899. Repeatable. This course is graded S/U.

999 Research: Dissertation UGRD 1-18
Research for thesis or dissertation purposes only. Su, Au, Wi, Sp Qtrs. Prereq: 899. This course is graded S/U.

Humanities, College of

100 Humanities Survey UGRD 1
Academic requirements, University procedures, grading system, resources; student rights and responsibilities; overview of Humanities areas of study, Arts and Sciences services. 100H (honors) may be available. Prereq: Open to students with credit for FAES 100, ArtsCol 100.01 or 100.02, ArtsSci 100 or 100.01 or 100.02, BioSci 100, Engineer 100, MPSCol 100, SBSCol 100, or any decimal subdivision of UnivCol 100. This course is graded S/U.

294 Group Studies UGRD 1-6
Interdisciplinary study under the direct auspices of the College of Humanities involving materials of an interdepartmental or intercollegiate nature. 294H (honors) may be available. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

450.01 Cultures of Professional Writing: Writing and Its Places UGRD 5
Exploration of the kinds and roles of writing in multiple communities. Prereq: English 110 and any 367. 450.02 Cultures of Professional Writing: Writing in Organizations UGRD 5
Writing that shapes professional organizations; discourse analysis of the written documents produced in these settings. Prereq: English 110 and any 367.

450.03 Cultures of Professional Writing: Writing and New Media UGRD 5
Exploration of how conceptions of writing have changed along with technologies of writing and examination of New Media's role in our experiences as writers. Prereq: English 110 and any 367.

467 Issues and Methods in Tutoring Writing UGRD 5
Theories and practices in tutoring and writing; explores the writing-learning connections and prepares students to work as writing consultants/tutors for small writing groups. Sp Qtr. Open to students with credit for English 467. Cross-listed in English.

489 Research Internship in the Humanities UGRD 1-5
Intensive research experience in a humanities discipline; individual instruction within a faculty research project; students work as research assistants. Prereq: Open to students with credit for English 467. Cross-listed in English.

589 Internship in Professional Writing UGRD 5
Students work on-site in an organization, planning, revising, editing, and producing documents and meet two hours a week to discuss their experiences. Prereq: 450.01 or 450.02 or 450.03, one additional course toward the minor, and permission of instructor. Repeatable to a maximum of 5 or 10 cr hrs. This course is graded S/U.

Hungarian
250 Hungarian

101.01 Elementary Hungarian I UGRD 5
Development of four skills: listening, comprehension, speaking, reading, and writing; introduction to Hungarian culture.
Au Qtr. 2.2 hr. Not open 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. GEC for lang course. Students must register for and complete 5 cr hrs during the qtr.

101.51 Elementary Hungarian I: Individualized Track UGRD 1-5
Development of four skills: listening, comprehension, speaking, reading, and writing; introduction to Hungarian culture. Not open 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. GEC for lang course. Repeatable to a maximum of 5 cr hrs. Students register for and complete 1-5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 102.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement.

102.01 Elementary Hungarian II UGRD 5
Further development of the four skills: listening, comprehension, speaking, reading, and writing; more work on Hungarian culture.
Wi Qtr. 2.2-hr cr. Prereq: 101.01 or 5 cr hrs of 101.51. Not open to native speakers of this language through regular course enrollment or EM credit; or to students with 3 or more years of this language in this high school, except by permission of dept. GEC for lang course. Students must register for and complete 5 cr hrs during the qtr.

102.51 Elementary Hungarian II: Individualized Track UGRD 1-5
Further development of the four skills: listening, comprehension, speaking, reading, and writing; more work on Hungarian culture. Prereq: 101.01 or 5 cr hrs of 101.51 or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit; or to students with 3 or more years of this language in high school, except by permission of dept. GEC for lang course. Repeatable to a maximum of 5 cr hrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 103.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 101.51 and 102.51 concurrently with permission of instructor.

103.51 Intermediate Hungarian I: Individualized Track UGRD 1-5
Continuation of 102.51; development of listening, comprehension, speaking, reading, and writing; with somewhat more emphasis on listening comprehension and reading. Prereq: 102.01 or 5 cr hrs of 102.51 or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. Students register for and complete 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 104.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 102.51 and 103.51 concurrently with permission of instructor. GEC for lang course. Repeatable to a maximum of 5 cr hrs.

104.51 Intermediate Hungarian II: Individualized Track UGRD 1-5
Continuation of 103.51; development of the four skills with emphasis on listening comprehension and reading. Prereq: 103.01 or 5 cr hrs of 103.51 or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 103.51 and 104.51 concurrently with permission of instructor. GEC for lang course. Repeatable to a maximum of 5 cr hrs.

501.01 Advanced Hungarian III UGRD 5
Continuation of 407.51; development of speaking, reading, writing, and listening skills in Hungarian at the advanced level; study of contemporary Hungarian culture and society. Au Qtr. Prereq: 407.51 or permission of instructor. Not open to native speakers of Hungarian or students with 3 or more years of study in this language, except by permission of instructor.

502.01 Language Maintenance and Hungarian Culture I UGRD 5
Continuation of 501.01; development of speaking, reading, writing, and listening skills in Hungarian at the advanced level; study of contemporary Hungarian culture and society. Wi Qtr. Prereq: 501.01 or permission of instructor. Not open to native speakers of Hungarian or students with 3 or more years of study in this language, except by permission of instructor.

503.01 Language Maintenance and Hungarian Culture II UGRD 5
Continuation of 502.01; development of speaking, reading, writing, and listening skills in Hungarian at the advanced level; study of contemporary Hungarian culture and society. Sp Qtr. Prereq: 502.01 or permission of instructor. Not open to native speakers of Hungarian or students with 3 or more years of study in this language, except by permission of instructor.

410 Industrial Quality Control UGRD 4
Application of probability, statistics, design of engineering experiments to statistical process control; process capability analysis; and technical and economic evaluation of quality control systems. Au Qtr. 2.2-hr cr. Prereq: Math 153. Not open to Industrial and Systems Engineering majors or students with credit for IndEng 406.

485 Practical Experience in an Industrial Organization
To be obtained in some engineering or industrial organization; prior adviser approval and final report required. Su, Au. Wi, Sp Qtrs. Arr cr. Prereq: Majors in ISE only. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

500 Introduction to Industrial and Systems Engineering UGRD 3
Introduction to the industrial engineering curriculum and to the profession; technical communication; completion is required prior to beginning advanced portion of the major. Au. Sp Qtrs. 2.1.5-hr cr. Prereq or concur: Chem 121, Econ 200, Math 415 or 255 and 568 or 571, Physics 123, Psych 100, Stat 428 and English 367 or equiv. Open to ISE majors only. Not open to students with credit for IndEng 500. GEC 3rd writing course.

501 Simulation of Production Systems UGRD 5
Emphasizes the creation and use of simulation models for the design and evaluation of production systems. Au. Wi, Sp Qtrs. 2.1.5-hr cr, 1.3-hr lab. Prereq: 500; Stat 427 and 428, or equiv. Not open to students with credit for IndEng 521.

504 Engineering Economic Analysis UGRD 3
Economic analysis of engineering projects and methods of operation; the analysis of public investments, and introduction to the analysis of engineering decisions. 504H (honors) may be available. Su, Au. Wi, Sp Qtrs. 3 cr. Prereq: 3rd yr standing or concur with 500 or written permission of instructor, and a minimum cumulative pt-hr ratio of 2.00. Not open to students with credit for IndEng 504.

504H Honors Engineering Economic Analysis UGRD 3
Economic analysis of engineering projects using spreadsheet modeling. Economic decision making under uncertainty. Sp Qtrs. 2.1.5-hr cr, 1.3-hr lab. Prereq: 2nd yr standing, enrollment in College of Engineering Honors Program. Not open to students with credit for 504 or IndEng 504.

510 Statistical Process Control UGRD 3
Emphasizes the application of statistical methods to product design, process design and operation, and quality engineering. Au. Sp Qtrs. 2.1.5-hr cr. Prereq: 500; Stat 427 and 428, or equiv. Not open to students with credit for IndEng 509.

520 Fundamentals of Linear Optimization with Applications UGRD 3
Emphasizes the formulation, solution and analysis of linear models to optimize the design of production and service systems and other engineering applications. Au. Wi, Sp Qtrs. 2.1.5-hr cr. Prereq: 500, Math 254, 415 or 255, and 568 or 571. Not open to students with credit for IndEng 522. Working knowledge of Excel.

521 Fundamentals of Nonlinear Optimization with Applications UGRD 3
Emphasizes the formulation, solution, and analysis of nonlinear models to optimize the design of production and service systems and other engineering applications. Wi, Sp Qtrs. 3 cr. 1.1-hr lab. Prereq: 520; Math 254, 415, 568. Not open to students with credit for IndEng 523. Computer facilities with Excel.

540 Production Systems Design UGRD 4
This course develops the knowledge and skills to design production systems and their workplace components. Wi, Sp Qtrs. 4 cr, 1.1-hr lab. Prereq: 500. Not open to students with credit for IndEng 531.

541 Facilities Design UGRD 4
Principles and methods for design and analysis of facility layouts, systematic layout planning, production flow analysis, material handling systems, workstation design, Lean Manufacturing. Au, Sp Qtrs. 3 cr, 1.3-hr lab. Prereq: 501, 520, 521, 540. Not open to students with credit for IndEng 532.

542 Design and Implementation of Production Control Systems UGRD 4
Principles and practices of modern production systems control including scheduling, shop floor control, MRP systems, theory of constraints, finite capacity scheduling, commercial software, pull scheduling. Au, Sp Qtrs. 4 cr, 1.1-hr lab arr. Prereq: 501, 504, 520, 521, 540. Not open to students with credit for IndEng 533.

550 Introduction to the Physical Principles of Manufacturing Processes UGRD 3
Applications of the basic principles of transport phenomena to develop physics based models of manufacturing processes. 550H (honors) may be available. Wi Qtr. 2.1.5-hr cr. Prereq: Math 415; Physics 132; CSE 201, 202 or EnGraph 167. Not open to students with credit for IndEng 517.

Industrial and Systems Engineering

350 Manufacturing Engineering UGRD 3
Fundamentals and interrelationships of the principal manufacturing processes; principles and characteristics illustrated with related laboratory demonstrations. Au, Wi, Sp Qtrs. 2.1.5-hr cr, 1.1-hr lab. Prereq: 2nd yr standing or written permission of instructor. Not open to students with credit for IndEng 311. Safety glasses must be worn in laboratory.
560 Work Physiology and Biomechanics in Work UGRD 3

Design
Investigations of the physiological and biomechanical aspects of work design; anthropometry, biomechanical analysis, forming, physical models, and work rest cycles applied to the workplace.
Au, Wi Qtr. 2 cl, 1 2-hr lab. Prereq: MechEn 410: Stat 427 or equiv, and 3rd yr standing in ISE; or permission of instructor. Not open to students with credit for IndEng 503.

599.01 Systems Modeling UGRD 5

Mathematical modeling of engineering, social, and biological systems, with applications, practice in the use of modeling software.
Prereq: Math 415 or 255, EnGraph 167 or CSE 202 or CSE 294 or Engineer 192H

600 Industrial Engineering Principles UGRD 4

A survey of industrial engineering methods used in industry including optimization, probability and statistics, waiting line models, quality control, simulation models and scheduling methods.
Au, Wi Qtr. 4 cl. Prereq: 3rd yr standing or equiv with written permission of instructor. Not open to students in ISE or credit for IndEng 534.

601 Computer Application in Industrial Process UGRD 3

Control
Provides an introduction to evaluation and design of practical industrial control systems with emphasis on real time data acquisition.
Au, Sp Qtr. 2 1 hr cl, 1 2-hr lab. Prereq: EnGraph 167 or Cprin 201 or 202 or equiv, and 4th yr standing in ISE or permission of instructor. Not open to students with credit for IndEng 620.

602 Automation UGRD 3

A survey of mechanism principles and current design practices involved in the automation of manufacturing operations and processes.
Au, Sp Qtr. 2 1.5-hr cl. Prereq: 350 or equiv. Not open to students with credit for IndEng 614.

603H Market Engineering and Applications UGRD 4

An introduction to market engineering concepts and applications to contemporary market design problems such as resource allocation, information aggregation, and decentralized control.
Wi Qtr. Prereq: Econ 200, Math 191-193 or 130-132, Stat 245 or 427, and senior honors

608 Engineering Analysis for Design and Simulation UGRD 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.
Au Qtr. 2 1.5-hr cl, 1 2-hr lab. Prereq: MechEng 210H or 400, or MechEng 210H or 400 or 410. Not open to students with credit for WeldEng 620 or IndEng 625. Cross-listed with WeldEng 62X.

610 Planning of Engineering Experiments UGRD 3

Study of the planning of industrial and research experiments.
Au, Wi Qtr. 2 1.5-hr cl. Prereq: 520 or written permission of instructor. Not open to students with credit for IndEng 610.

615 Automation Laboratory UGRD 1

Application of principles of mechanism to manufacturing operations and processes.
Au, Sp Qtr. 3 cl. Prereq: 250 recommended: EngMech 220 or 400 or 440, or MechEng 410 or 420 or 440. Not open to students with credit for IndEng 590.

640 Introduction to Integrated Production Control UGRD 3

Systems
Introduction to the design and analysis of integrated production control systems, including master scheduling, materials requirement planning, just-in-time systems, sequencing and scheduling.
Wi Qtr. 2 1.5-hr cl. Prereq: 520 or 521 or equiv. Not open to students with credit for IndEng 590.

650.01 Manufacturing Process Fundamentals: UGRD 3

Introduction to Manufacturing Processes
Courses in this series teaches the fundamentals of manufacturing processes. Fundamentals and analysis of principal manufacturing processes and relationship between process variables and product properties.
Wi Qtr. 3 cl. Prereq: 350 recommended: EngMech 220 or 400 or 440, or MechEng 410 or 420 or 440. Not open to students with credit for IndEng 511.

650.02 Manufacturing Process Fundamentals: Tool UGRD 4

Engineering
Courses in this series teaches the fundamentals of manufacturing processes. Design of tools, jigs, and fixtures. Basic elements of fixture design, such as form, locating points, clamping devices, and the use of standardized parts.
Au Qtr. 2 1.5-hr cl, 1 3-hr lab. Prereq: 350, or equiv or concurs: 683 or MechEng 621. Not open to students with credit for IndEng 622 or MechEng 622. Cross-listed in Mechanical Engineering.

650.03 Manufacturing Process Fundamentals: UGRD 4

Manufacturing Processes and Simulation
Courses in this series teaches the fundamentals of manufacturing processes. Introduction to advanced theory and simulation of manufacturing processes, including machining, casting, forming, and injection molding.
Wi Qtr. 2 1.5-hr cl, 1 2-hr lab. Prereq: 3rd yr standing in College of Engineering. Not open to students with credit for IndEng 607.

Industrial and Systems Engineering 251

651.01 Forming Processes: Machining Processes and Machine Tools UGRD 4

Courses in this series teach the specifics of forming processes. Analysis and application of mechanics, stress analysis, vibrations and heat transfer in material removal processes; machine tool design, machine tool technology and machine tool control.
Wi Qtr. 2 cl. 1 3-hr lab. Prereq: MechEng 420 or 440, or grad standing. Not open to students with credit for IndEng 611.

651.02 Forming Processes: Analysis of Die Casting UGRD 3

Processes
Courses in this series teach the specifics of forming processes. Fundamental principles underlying the die casting process; integration of cast component design, process requirements and economics.
Wi Qtr. 2 1.5-hr cl. Prereq: Grad or sr standing in Engineering. Not open for students with credit for IndEng 602. Cross-listed in Materials Science and Engineering.

651.03 Forming Processes: Net Shape Forming of Automotive Parts UGRD 4

Courses in this series teach the specifics of forming processes. Introduces students to fundamentals of Net Shape Manufacturing with emphasis on interaction of materials, design and manufacturing.
Sp Qtr. 2 2-hr lec. Prereq: 350, EngMech 400, EngMech 430; at least Rank 3 standing in the College of Engineering. Not open to students with credit for IndEng 666. Repeatable to a maximum of 12 cr hrs.

651.04 Forming Processes: Machine Tool Control and Programming UGRD 4

Courses in this series teach the specifics of forming processes. Provides an introduction to numerically controlled machine tools including principles of operation, programming systems, computer assisted programming, performance characteristics, and applications.
Sp Qtr. 2 1.5-hr cl, 2 3-hr labs. Not open to students with credit for IndEng 623 or MechEng 623. Cross-listed in Mechanical Engineering.

652.01 Fundamentals of Fabrication Processes: CAD/CAM Laboratory for Rapid Design and Prototyping UGRD 3

Courses in this series teach the fundamentals of precision and rapid fabrication processes. Rapid design prototyping using engineering workstations, CAD/CAM software, table-top CNC milling machines, and rapid prototyping machines.
Sp Qtr. 1 2-hr cl, 1 3-hr lab. Prereq: 655 or MechEng 623, or 521 or MechEng 561 or grad standing in MechEng or ISE. Not open to students with credit for IndEng 653. Cross-listed in Mechanical Engineering.

652.02 Fundamentals of Fabrication Processes: Introduction to Nanofabrication and Nanomanufacturing UGRD 3

Courses in this series teach the fundamentals of precision and rapid fabrication processes. Novel nanomanufacturing techniques will be introduced with a focus on top down approaches and a brief introduction of bottom up approaches.
Au Qtr. 3 cl. Prereq: ECE 331 or MatSciEn 205 or permission of instructor. Not open to students with credit for ChBE 622 or ECE 632 or BiomedE 662. Cross-listed with BiomedE 662, ChBE 632, and ECE 632.

660 Principles of Occupational Biomechanics and Industrial Ergonomics GRAD 3

In-depth treatment of occupational biomechanics and industrial ergonomics to provide transition to more advanced research-oriented topics.
Au Qtr. 2.5-hr cl. Not open to students with credit for 560 or IndEng 503 or 603.

664 Industrial Accident Prevention and Control GRAD 3

Industrial safety practices; OSHA; models of accident phenomena; measurement, inspection, and control of unsafe behavior and conditions; design of loss control programs. Student projects.
Wi Qtr. 2 cl. Prereq: 500 or equiv with written permission of instructor. Not open to students with credit for IndEng 671.

665 Analysis and Design of Workplace Environments GRAD 4

Measurement of environmental parameters including noise, heat, gases, particulates, and light, and their effect on human productivity; design of engineering controls; laboratory includes industrial surveys.
Wi Qtr. 2 cl. 1 2-hr lab. Prereq: 500 or equiv with written permission of instructor. Not open to students with credit for IndEng 672.

670 Cognitive Engineering I UGRD 3

Introduction to the design of person-machine systems, psychological aspects of human performance, and design of displays and controls; human-computer interaction; human information processing.
Wi, Sp Qtr. 2 cl, 1 2-hr lab. Prereq: 4th yr standing in ISE or written permission of instructor. Not open to students with credit for 770 or IndEng 573 or 673.
252 Industrial and Systems Engineering

680.01 Industrial Practice in Systems Design I UGRD 4
An in-depth systems design project for industrial engineering. Problem formulation, data collection, and exploration of design alternatives for an actual systems engineering problem. Wi, Au Qtr. 2 2-hr cl. Prereq: 610 or concur; 501, 520, 521, 541, 542, 560, 670, 681. Not open to students with credit for IndEng 608.01. This course is Progress ('P') graded. 2-qtr sequence, must be taken in consecutive qtrs. GEC 3rd writing course. 2-qtr sequence, must be taken in consecutive qtrs.

680.02 Industrial Practice in Systems Design II UGRD 4
An in-depth systems design project for industrial engineering. Exploration and selection of design alternatives; justification, recommendation, and written oral presentation of problem solution. Wi, Sp Qtrs. 2 2-hr cl. Prereq: 504, 680.01. Not open to students with credit for IndEng 608.02. This course is Progress ('P') graded. 2-qtr sequence, must be taken in consecutive qtrs. GEC 3rd writing course. 2nd of 2-qtr sequence; must be taken in consecutive quarters.

681 Engineering Project Management UGRD 3
Introduction to project management for engineers. Conception, planning, scheduling, budgeting, leadership, management, tracking, completion of projects. Project management software is introduced and used. Au, Sp Qtrs. 2 1.5-hr cl. Prereq: 3rd yr standing in College of Engineering or written permission of instructor. Not open to students with credit for IndEng 640.

682 Product Design Fundamentals UGRD 4
Principles of concurrent engineering, design for manufacture and assembly, and lean manufacturing; integration of design and manufacturing; design prototyping. Wi, Au, Sp Qtrs. 2 1.5-hr cl, 1 2-hr lab. Prereq: 523 or MechEng 561 or grad standing. Not open to students with credit for MechEng 682. Cross-listed in Mechanical Engineering.

683 Introduction to Parametric Design UGRD 3
Design of components, assemblies, molds and dies using parametric and feature-based design principles. Au, Wi, Sp Qtrs. 2 1.5-hr cl, 1 2-hr lab. Prereq: 523 or MechEng 561 or grad standing in ISE, MechEng or the manufacturing systems and engineering program. Not open to students with credit for IndEng 621 or MechEng 621. Cross-listed in Mechanical Engineering.

684 Introduction to Applied Decision Analysis UGRD 3
Introduction to decision analysis and its application; deals with modern utility theory and the application of this theory to engineering decisions under risk. Au, Wi, Qtr. 2 1.5-hr cl. Prereq: Stat 426 or 427 or equiv probability course. Not open to students with credit for IndEng 662.

685 Lean/ Sigma Foundation UGRD 5
Introduction to the field of Business Process Improvement and Lean Sigma (LS) methodology. Foundational training in preparation for Green and Black Belt Certification. Wi Qtr. Prereq: permission of instructor.

688 Systems Thinking in Engineering and Design UGRD 3
Introduction to concepts and heuristics in systems thinking and how these concepts apply to engineering applications. Sp Qtr. Prereq: Rank 4 or grad standing or permission of instructor.

689 Senior Laboratory UGRD 3
Students pursue independent laboratory project of up to two quarters duration; proposals must be approved by a faculty member prior to registration for the course. Prereq: Sr standing in ISE. Not open to students with credit for IndEng 689. Repeatable to a maximum of 6 or hrs.

693 Individual Studies in Industrial Engineering UGRD 1-6
Designed to give the advanced students an opportunity to pursue special studies not offered in fixed curricula.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 18 or hrs. This course is graded S/U.

694 Group Studies in Industrial Engineering UGRD 1-6
Advanced topics in the various phases of industrial engineering.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 23 or hrs.

701 Introduction to Discrete System Simulation UGRD 4
Introduction to the analysis of systems via discrete-event simulation models, generation of random variables, testing random number generators, fitting distributions to data, output analysis. Wi Qtr. 2 2-hr cl. Prereq: Stat 426 or 428. Not open to students with credit for IndEng 704.

703 Market Engineering and Applications UGRD 4
An introduction to market engineering concepts and applications to contemporary market design problems such as resource allocation, information aggregation, and decentralized control.
Wi Qtr. Prereq: Econ 200, Math 151-153 or 130-132, Stat 245 or 427, and gradate standing, or

710 Statistical Quality Control and Quality Management Systems GRAD 3
Course imparts knowledge to understand and apply current statistical and management methods in quality engineering.
Au, Sp Qtrs. Not open to students with credit for IndEng 709.

715.01 Reliability Engineering I GRAD 4
System engineering reliability modeling and prediction; reliability of programmable devices and human reliability; reliability and risk management of engineering systems.
Wi Qtr. 2 2-hr cl. Prereq: 710 or ElecEng 631 or MechEng 481 or grad standing. Not open to students with credit for 776.xx courses. Not open to students with credit for IndEng 776.01. Cross-listed in Electrical Engineering and Mechanical Engineering. Repeatable for different titled topics only of 715.xx. Field experience at the site of Honda in Marysville.

715.02 Reliability Engineering II GRAD 4
Reliability of mechanical and electrical devices, systems, and engineering processes. Sp Qtr. 2 2-hr cl. Prereq: 715.xx or GenEng 776.02 or ElecEng 776.02 or permission of instructor. Not open to students with credit for 776.xx courses. Not open to students with credit for IndEng 776.02. Cross-listed in Electrical Engineering and Mechanical Engineering. Repeatable for different titled topics only of 715.xx. Field experience at the site of Honda in Marysville.

715.03 Reliability Engineering Applications GRAD 1
Study and design of a complete reliability program for a selected engineering system. Sp Qtr. 1 cl. Prereq or concur: 715.xx or ElecEng 776.02 or MechEng 776.02 or permission of instructor. Not open to students with credit for 776.xx courses. Not open to students with credit for IndEng 776.03. Cross-listed in Electrical Engineering and Mechanical Engineering. Repeatable for different titled topics only of 715.xx. Field experience at the site of Honda in Marysville.

720 Linear Programming GRAD 3
Convexity and polyhedral sets, extreme point solutions, degeneracy, the Simplex and other solution methods, duality, sensitivity analysis, decomposition and complexity issues. Au Qtr. 2 1.5-hr cl. Prereq: Math 558 or equiv with written permission of instructor. Not open to students with credit for IndEng 702.

730 Stochastic Processes Used in Systems Engineering I GRAD 4
Introduction to modeling of stochastic systems, including Markov chains and Markov processes. Au Qtr. 2 1.5-hr cl. Prereq: Knowledge of basic probability and calculus. Not open to students with credit for IndEng 703.

742 Warehouse and Facility Design GRAD 3
Principles and methods for design and analysis of warehouses and distribution facilities. Wi Qtr. Prereq: 720; prereq or concur; 701 or permission of instructor.

748 Design, Analysis, and Control of Integrated Manufacturing Systems GRAD 3
A systematic description of traditional, cellular, and flexible configurations, an integrated view of interacting elements and their design, analysis, and control with examples from industry. Sp Qtr. Prereq: Stat 425 and 426 or 427 and 428 or 525 or equiv. Not open to students with credit for IndEng 758.

750.01 Advanced Manufacturing Process Fundamentals: Introduction to Modeling of Materials Processing GRAD 3
Courses in this series teach advanced manufacturing processes concepts. Applications of the basic principles of transport phenomena to develop physics based mathematical models of materials processing methods. Au Qtr. Prereq: MechEng 500 and EnGraph 167 and Math 415; or equiv; or permission of instructor. Not open to students with credit for IndEng 617.

750.02 Advanced Manufacturing Process Fundamentals: Introduction to Metal Forming GRAD 3
Courses in this series teach advanced manufacturing processes concepts. Metal forming processes, fundamentals of plastic deformation in metal forming; approximate analysis of metal forming processes. Sp Qtr. 2 1.5-hr cl. Prereq: 651 or permission of instructor. Not open to students with credit for IndEng 711.

750.03 Advanced Manufacturing Process Fundamentals: Robotic Applications in Manufacturing GRAD 3
Courses in this series teach advanced manufacturing processes concepts. Aspects of computer based robots; applications of robots in advanced manufacturing systems; role of learning machines in process automation. Prereq: 601 or written permission of instructor. Not open to students with credit for IndEng 705.

751.01 Advanced Forming Processes: Metal Forming GRAD 3
Advanced analysis and design of hot and cold metal forming processes. Sp Qtr. 3 cl. Prereq: 756 or equiv. Not open to students with credit for IndEng 712.

751.02 Advanced Forming Processes: Polymer Processing Fundamentals GRAD 3
Applies fundamentals of transport phenomena and polymer constitutive equations to plastics manufacturing. Wi Qtr. Prereq: MechEng 500, Math 415, EnGraph 167 or equiv; or permission of instructor. No open to students with credit for IndEng 618.

751.04 Introduction to Precision Engineering GRAD 4
Precision engineering is the multidisciplinary study and practice of high accuracy engineering, metrology, and manufacturing. 752.01H (honors) may be available. Sp Qtr. Prereq: Sr standing in ISE or MechEng or MatSciEn or grad standing. Not open to students with credit for IndEng 619.
752.01H Introduction to Precision Engineering UGRD 4
Precision engineering is the multidisciplinary study and practice of high accuracy engineering, metrology, and manufacturing. Sp Qtr. Prereq: Honors program or permission of department or instructor; Sr standing in ISE or MechEng or MatSci. Not open to students with credit for IndEng 619H.

759 Operations Research Models in Manufacturing Engineering GRAD 3
Students use the mathematical formulation and algorithmic solution techniques of Operations Research as a scientific approach to solving real-world problems in Manufacturing Engineering. Sp Qtr. Prereq: Senior or graduate standing in Industrial and Systems Engineering; permission of instructor.

761.01 Practice Oriented Ergonomics: Spine biomechanics - exposure assessment GRAD 3
Practical and theoretical development of concepts and methodologies for ergonomic evaluation of occupational risk factors are emphasized, towards goal of preventing work-related back injuries. Sp Qtr. 1.5-hr cl. Prereq: 560 or 660 or permission of instructor. Not open to students with credit for IndEng 717.

761.02 Practice Oriented Ergonomics: Upper Extremity biomechanics - Exposure Assessment GRAD 3
Practical and theoretical development of concepts and methodologies for ergonomic evaluation of occupational risk factors are emphasized, towards goal of preventing work-related upper extremity injuries. Wi Qtr. 2.5-hr cl. Prereq: 660 or permission of instructor. Not open to students with credit for IndEng 718.

763 Clinical Ergonomics GRAD 3
The multidisciplinary concepts and methods to accelerate return-to-work, enhance worker capability, job analysis, preplacement tests, reduce injury and compliance with the regulations will be emphasized. Prereq: 560 or 660 or permission of instructor. Not open to students with credit for IndEng 716.

769 Ergonomics in the Product Design Process GRAD 3
Teaches students where and how ergonomic design principles are incorporated into the product design process. Sp Qtr. 2.5-hr cl. Prereq: 560 (or 660) and 670 (or 770) or permission of instructor. Not open to students with credit for IndEng 715.

770 Cognitive Engineering Analysis and Knowledge Acquisition GRAD 3
Methodology for design of person-machine systems; psychological aspects of human performance; design of displays and control, human-computer interactions, and human information processing. Au, Wi Qtr. 2 cl, 1 2-hr lab. Not open to students with credit for IndEng 573, 670, 673.

771.01 Human-Computer Interaction in Complex Systems GRAD 3
Design of human-computer interfaces for applications such as cockpit, process control rooms, space applications, and information retrieval; students will design an interface for an actual system. Sp Qtr. 2 cl, 1 2-hr lab. Prereq: 670 and permission of instructor (undergraduates); 770 (graduates). Not open to students with credit for IndEng 774.

772 Cognitive Engineering Methods: Protocol Analysis and Knowledge Acquisition GRAD 3
Class teaches the theory and practice of methods in cognitive engineering, including protocol analysis, knowledge elicitation for intelligent systems, and cognitive task analysis. Wi Qtr. 2 cl, 1 2-hr lab. Prereq: 670 and permission of instructor (undergraduates); 770 (graduates). Not open to students with credit for IndEng 775.

773.01 Human Interaction with Intelligent Systems GRAD 3
Investigation of topics in cognitive engineering including techniques for aiding human performance, human expertise and human error, cognitive modeling of person-machine systems, and paradigms for human-computer interaction. Sp Qtr. 2 cl, 1 2-hr lab. Prereq: 670 and permission of instructor (undergraduates); 770 (graduates). Not open to students with credit for IndEng 773.

775 Proseminar in Cognitive Science GRAD 2
An in-depth examination of the interdisciplinary field of Cognitive Science; emphasizes fundamental issues of each discipline, provides illustrations of representative research being conducted at OSU. Sp Qtr. 1.2-hr cl. Prereq: CSE 612, Linguist 612, Psych 612, or Philos 612, or permission of instructor. Not open to students with credit for IndEng 737 or other cross-listed courses. Repeatable to a maximum of 4 cr hrs. Cross-listed in CIS, Linguistics, Psychology, Philosophy, and Speech and Hearing Science.

781 Empirical Model Building in Industrial Engineering GRAD 3
Course imparts a basic understanding of modern statistical and optimization techniques to support data-driven, robust engineering system design decision making. * Wi Qtr. 2.5-hr cl. Prereq: 610 or Stat 641 or 645 or equiv. Not open to students with credit for IndEng 700.

782 Decision Analysis GRAD 3
Introduction to Bayesian decision analysis and its applications. Sp Qtr. Prereq: 684. Not open to students with credit for IndEng 772.

783H Undergraduate Honors Program Research UGRD 1-3
Honors program students are offered the opportunity to pursue independent project/research. Student presentations and thesis writing included. Su, Au, Wi, Sp Qtr. Arr. Prereq: Sr standing in ind eng (or equiv). Students must have a GPA of at least 3.4 and permission of instructor. Repeatable to a maximum of 6 cr hrs.

784 Industrial Ecology: Production Systems Perspectives GRAD 3
Introduction to the principles and methods of life cycle environmentally conscious design, manufacturing, services, supply chain management, refurbishment, and recycling. Au Qtr. 3 cl. Prereq: Sr standing in College of Engineering or grad standing. Not open to students with credit for IndEng 757.

820 Nonlinear Programming GRAD 3
Convex set, convex functions, saddle-point optimality criteria, the Fritz John and Kuhn-Tucker conditions, sensitivity and parametric results, applications, and an introduction to algorithms. Wi Qtr. 2 cl. Prereq: 720. Not open to students with credit for IndEng 831.

821 Advanced Nonlinear Programming GRAD 3
Wolfe/Falk duality, conjugate/geometric duality, applications of quality (e.g., geometric programming, quadratic programming, location problems, decomposition). Sp Qtr. 2 cl. Prereq: 820. Not open to students with credit for IndEng 832.

822 Integer Optimization Methods GRAD 3
Methods used in the solution of optimization problems which contain integer variables. The emphasis is on general properties and the use of standard methods. Au Qtr. 2.5-hr cl. Prereq: 881 or permission of instructor. Not open to students with credit for IndEng 834.

823 Optimization Methods for Large Systems GRAD 3
Methods for the solution of large optimization problems including decomposition, generalized linear programs, relaxation methods, and primal and dual hierarchal decompositions. Sp Qtr. 2 cl. Prereq: 720 or 820 or equiv with written permission of instructor. Not open to students with credit for IndEng 833.

830 Stochastic Processes Used in Systems Engineering II GRAD 3
Additional models of stochastic systems including Poisson, Markov, renewal and other stochastic processes; applications to queuing theory. Au Qtr. 2.5-hr cl. Prereq: 730. Not open to students with credit for IndEng 836.

831 Advanced Queuing Theory GRAD 3
Mathematical analysis and design of waiting line systems emphasizing transient solutions, general arrival and service distributions, and priority queues and networks of queues. Au Qtr. 2.5-hr cl. Prereq: 830 or equiv. Not open to students with credit for IndEng 816.

832 Dynamic Programming GRAD 3
Theory, methodology, and application of dynamic programming. Sp Qtr. Prereq: 720 and permission of instructor. Not open to students with credit for IndEng 863.

835 Programming and Control Research GRAD 3-12
Advanced work in the several phases of programming and control theory; consists primarily of application of mathematical methods to the formulation and solution of process programming and control problems. Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Not open to students with credit for IndEng 866.

841 Sequencing and Scheduling GRAD 3
Survey of sequencing/scheduling problems encountered in management systems. Emphasis is given to those problems and solution methods found in the literature. Sp Qtr. 2.5-hr cl. Prereq: 720 or permission of instructor. Not open to students with credit for IndEng 824.

842 Advanced Studies in Plant Design and Materials Handling GRAD 3-12
Advanced work in one or more special phases of plant design and materials handling, such as group technology and robotics. Au, Wi, Sp Qtrs. Prereq: 541. Not open to students with credit for IndEng 828.

843 Advanced Models in Production Planning GRAD 3
Advanced study of models in aggregate production planning and other areas of production systems. Wi Qtr. Prereq: Grad standing in industrial-engineering or written permission of instructor. Not open to students with credit for IndEng 856. Offered odd years.

850 Problems in Production Engineering GRAD 3-12
Advanced work in one or more phases of production engineering involving problems in production design, equipment planning, tool design, and quality control. Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Not open to students with credit for IndEng 821.

851 Seminar in Advanced Topics in Manufacturing GRAD 3
Seminar will feature speakers from industry; students will prepare reports and oral presentations on various topics. Sp Qtr. 2.5-hr cl. Prereq: Admission to grad program or permission of instructor. Not open to students with credit for IndEng 822.
254 Industrial and Systems Engineering

868.01 Advanced Topics in Biomechanics and Musculoskeletal Disorders: Spine Biomechanics  GRAD 4
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.
Wi Qtr. 2 hr lec, 4 hr lab. Prereq. 960 or permission of instructor. Repeatable to a maximum of 8 cr hrs.

868.02 Advanced Topics in Biomechanics and Musculoskeletal Disorders: Upper Extremity Biomechanics  GRAD 4
Advanced seminar on contemporary topics in ergonomics including work-related musculoskeletal disorders, back biomechanics, upper extremity biomechanics, anthropometry, electromyography.
Wi Qtr. 2 hr lec, 4 hr lab. Prereq. 960 or permission of instructor. Repeatable to a maximum of 8 cr hrs.

868.03 Advanced Topics in Biomechanics and Musculoskeletal Disorders: Contemporary Issues  GRAD 3
Advanced seminar on contemporary topics in ergonomics: topic areas include, but are not limited to, work-related musculoskeletal disorders, back biomechanics, upper extremity biomechanics, anthropometry, electromyography.
Wi Qtr. 2 cl. Prereq. 960 or permission of instructor. Repeatable to a maximum of 8 cr hrs.

869.01 Biomechanics Research Practicum: Experience in Spine Biomechanics  GRAD 4
Builds upon information developed in ISE 868. Provides link between theory and laboratory measurement in assessment of occupational biomechanical issues for occupational low back disorder.
Sp Qtr. 2 cl, 1 hr lab. Prereq. 868.01, 868.02 or 868.03 and permission of instructor. Repeatable to a maximum of 18 cr hrs.

869.02 Biomechanics Research Practicum: Experience in Upper Extremity Biomechanics  GRAD 4
Builds upon theoretical information developed in ISE 868. Provides link between theory and laboratory measurement in assessment of biomechanical issues for occupational upper extremity disorders.
Sp Qtr. 2 hr lec, 4 hr lab. Prereq. 868.01 or 868.02 or 868.03 and permission of instructor. Repeatable to a maximum of 8 cr hrs.

870 Advanced Seminar Cognitive Engineering  GRAD 3
Advanced seminar on contemporary topics dealing with engineering applications of cognitive psychology, artificial intelligence, and linguistics; topic areas include human-computer interactions, the design of information retrieval systems, and mental models of complex systems.
Au Qtr. 2 cl. Prereq. 770 and permission of instructor. Repeatable to a maximum of 15 cr hrs.

871 Man-Machine Systems Research  GRAD 1
Advanced work in special research topics in man-machine systems.
Au, Wi, Sp Qtrs. Prereq. Permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

873 Advanced Models in Human Factors Engineering  GRAD 3
Advanced study in applied models used in human factors engineering; topics include models of human error, workload measurement and evaluation, risk acceptance, and performance under work paced and environmental stress.
Au Qtr. 2 cl. Prereq. Permission of instructor. Repeatable to a maximum of 9 cr hrs.

875.01 Human Error and the Human Contribution to System Failures  GRAD 3
Psychology of human error and contribution of human error to disasters in high-risk systems.
Au Qtr. 2.5 hr cl. Prereq. 770 or permission of instructor. Not open to students with credit for IndEng 820.

881 Operations Research Models and Methods  GRAD 3
Examines many basic OR models including the knapsack, traveling salesman, newsvendor, and secretary problems; and random walk and queueing models, algorithmic concepts are discussed.
Wi Qtr. 2.5 hr cl. Prereq. 720 and 730. Not open to students with credit for IndEng 802.

885 Practices in Operations Research  GRAD 3
Application of OR methods in manufacturing, financial, governmental, educational, and service organizations; students work on actual problems of a sponsoring organization and present both oral and written reports.
Sp Qtr. 2.5 hr cl. Prereq. 881. Not open to students with credit for IndEng 885.

890 Seminar in Industrial Engineering  GRAD 1
Seminar in Industrial Engineering.
Au, Wi, Sp Qtrs. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

893 Individual Studies  GRAD 1-6
Designed to give advanced graduate students an opportunity to pursue special studies not offered in fixed curricula.
Su, Au, Wi, Sp Qtrs. Prereq. Written permission of instructor. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

894 Group Studies  GRAD 1-6
Advanced topics in the various phases of industrial engineering.
Su, Au, Wi, Sp Qtrs. Arr. Prereq. Written permission of instructor. Repeatable to a maximum of 18 cr hrs.

899 Interdepartmental Seminar  GRAD 1-5
Two or more departments may collaborate in presenting seminars on subjects of mutual interest; topics to be announced.
Su, Au, Wi, Sp Qtrs.

900 Systems Theory  GRAD 3
Seminars on Systems Theory. Not open to students with credit for IndEng 900.05. Repeatable to a maximum of 15 cr hrs.

900.01 Seminar in Operations Research: Simulation and Experimentation  GRAD 3
Seminar on simulation and experimentation designed to prepare PhD students for dissertation research and research careers. Prereq. PhD standing or permission of instructor, other prereqs vary by topic. Not open to students with credit for IndEng 900.03. Repeatable to a maximum of 15 cr hrs.

900.02 Seminar in Operations Research: Optimization  GRAD 3
Seminar on optimization designed to prepare PhD students for dissertation research and research careers. Prereq. PhD standing or permission of instructor, other prereqs vary by topic. Not open to students with credit for IndEng 900.02. Repeatable to a maximum of 15 cr hrs.

900.03 Seminar in Operations Research: Probabilistic Models  GRAD 3
Seminar on probabilistic models designed to prepare PhD students for dissertation research and research careers. Prereq. PhD standing or permission of instructor, other prereqs vary by topic. Not open to students with credit for IndEng 900.04. Repeatable to a maximum of 15 cr hrs.

999 Research in Industrial Engineering  GRAD 1-18
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

Industrial, Interior & Visual Communic Design

200 Introduction to Design  UGRD 5
Introduction to theory, rationale, practice, and societal impact of design; design process, critical issues, relationship to the environment.
Au, Wi, Sp Qtrs. 2.2 hr cl. VPA Admis Cond course.

201 Descriptive and Analytic Drawing for Designers  UGRD 3
Development of drawing skills to explore, observe, understand, record, analyze and communicate visual information.
Au, Wi, Sp Qtrs. 3.1 hr cl. This course is available for EM credit. VPA Admis Cond course.

203 Graphic Thinking for Designers  UGRD 3
Introduction to drawing as a design tool. Emphasis is placed on sketching and drawing to explore, analyze and communicate design concepts and design processes.
Wi, Sp Qtrs. 3.1 hr cl. Prereq. 201 or permission of instructor.

205 Drawing Systems for Designers  UGRD 3
Introduction to drawing systems, including orthographics, sections, dimensions, paraline and measured drawings.
Wi, Sp Qtrs. 3.1 hr cl. Prereq. 201 and 203, or permission of instructor.

230 Basic Design Concepts for Non Majors  UGRD 3
A studio-based introduction to the design process; creative problem-solving process emphasizes divergent thinking skills through observation, abstraction, evaluation and communication.
Au, Wi, Sp Qtrs. 3.1 hr cl. Not open to majors in Design or pre-Design.

250 Studies in Design  UGRD 3
Studies in specific areas in the field of design, with emphasis on particular aspects of industrial design, visual communication, and interior design problems.
Au, Wi, Sp Qtrs. 2.2 hr labs. Prereq. Permission of instructor.

251 Basic Design I  UGRD 5
Introduction to the theories, methods, and practices of design with primary emphasis on basic visual literacy, critical perspective, drawing and analysis, visual communication, and basic two-dimensional modeling techniques and materials.
Wi Qtr. 3.3 hr labs. Prereq. 251 or permission of instructor.
253 Design History UGRD 3
A history of design as affected by technology, science, and cultural world view.
2 cl, 1 2-hr lab cl. Prereq: Design major or permission of instructor.

254 Introduction to Materials and Processes for Designers UGRD 3
An overview of the properties and fabrication principles for materials used in industrial, interior and visual communication design.
Wi Qtr. 2 2-hr cl. Prereq: 251; concurs: 252; or permission of instructor.

258 Basic Typography UGRD 3
Introduction to the knowledge and skills of typographical design and its corresponding aesthetic functional, and technological applications and utilizations.
Sp Qtr. 1 2-hr cl, 2 2-hr labs. Open only to majors in Design or by permission of instructor.

262.02 Basic Design III: Basic Industrial Design Practices UGRD 5
Design Practices
Studio course for majors in Industrial Design: Introduction to basic two- and three-dimensional practices in visual communication design; emphasis on systematic method and research techniques.
Prereq: 252; Math 116 or higher equiv; Stat 135 or 145 or equiv; or permission of instructor.

262.04 Basic Design III: Basic Industrial Design UGRD 5
Practices
Studio course for majors in Industrial Design: Introduction to the fundamentals of industrial design with emphasis on development processes, technical skills, and communication; development of simple exemplary products.
Prereq: 252; Math 116 or higher equiv; Stat 135 or 145 or equiv; or permission of instructor.

262.08 Basic Design III: Basic Interior Design Practices UGRD 5
Studio course for majors in Interior Design: Introduction to three-dimensional spatial organization of basic interior design conceptualization and principles of composition; application of basic human needs and space defining elements.
Prereq: 252; Math 116 or higher equiv; Stat 135 or 145 or equiv; or permission of instructor.

294 Group Studies in Design UGRD 1-5
The investigation of various problems in design.
Au, Wi, Sp Qtr. Arr. Repeatable to a maximum of 15 cr hrs.

310 Color and Communication UGRD 3
Provides experience in color interaction; introduces color effects on clarity, mood, readability, etc. color theory.
Au, Wi, Sp Qtr. 2 1.5-hr cl.

320 Electronic Media for the Designer UGRD 4
The application of electronic media technologies to graphical content.
Au, Wi, Sp Qtr. 2 2-hr cl.

340 Information Visualization UGRD 3
Design principles related to visualizing quantitative information, processes and systems.
Su, Wi Qtr. 2.1-3.5 cl.

460.02 Intermediate Design I: Visual Communication UGRD 5
Design
Design and application of graphic elements based on visual imagery in production of visual communications using photographic and handgraphic techniques within frameworks of theories of communication and signs.
Open only to majors or permission of instructor.

460.04 Intermediate Design I: Industrial Design UGRD 5
Design of simple products as a means of introducing systematic methods, sketching, modeling, making, human factors, and presentation.
Open only to majors or permission of instructor.

460.08 Intermediate Design I: Interior Design UGRD 5
An introduction to conceptual planning, interior organization, interior requirements, and human factors, with emphasis on model making and presentation techniques.
Open only to majors or permission of instructor.

461.02 Intermediate Design II: Visual Communication UGRD 5
Design
Design and application of typographical elements in production of verbal communications using photographic, handgraphic, and computer techniques within frameworks of theories of communication and signs.
Prereq: 460.02.

461.04 Intermediate Design II: Industrial Design UGRD 5
Emphasis is placed on the refinement of systematic design methods, visualization, detailing and documentation; students are introduced to team working and client requirements.
Prereq: 460.04 concurs: 551.

461.08 Intermediate Design II: Interior Design UGRD 5
Introduction to furniture design, exploring material and production characteristics, detailing and full-scale model making, emphasizing man-space-product interface, and special user requirements.
Prereq: 460.08.

462.02 Intermediate Design III: Visual Communication UGRD 5
Design
Integration of typographic and graphic elements based on visual imagery in design and development of two-dimensional visual communications using photographic, handgraphic, and computer techniques.
Prereq: 461.02 and 555.

462.04 Intermediate Design III: Industrial Design UGRD 5
Designing specialized problem solving approaches to more complex industrial design which emphasizes the refinement of solutions in terms of suitable technology and user consideration.
Prereq: 461.04, 502 and 555.

462.08 Intermediate Design III: Interior Design UGRD 5
Design of specialized interior spaces, introducing space planning and design methodology; emphasis on user interaction and existing space and furniture system analysis.
Prereq: 461.08 and 555.

489 Internship in Design UGRD 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 10 cr hrs. This course is graded S/U.

501 Conceptual Drawing for Industrial Design UGRD 3
Principles of creative conceptual drawing and sketching methods used in the design process.
Sp Qtr. 2 2-hr cl. Prereq: 201 through 203, 252, 253, or permission of instructor.

502 Three Dimensional Design Graphics UGRD 3
Principles of graphic design for industrial and interior design.
Au Qtr. 2 3-hr cl. Prereq: 262.04, 501 and Art 201.

511 Visual Communication Hand Graphics UGRD 3
Advanced laboratory practice in communicating with drawn messages; evaluation and selection of appropriate visual treatments and techniques for print, film, and television.
Au Qtr. 2 3-hr labs. Prereq: 262.02, concurs: 460.02.

514 Graphic Design Production UGRD 3
Fundamental information on the preparation, administration, and development of printed matter used by the visual communication designer.
Wi Qtr. 3 cl. Prereq: 258, 460.02, and 511; concurs 461.02.

521 Interior Drawing UGRD 3
Principles and application of conceptual drawing techniques.
Sp Qtr. 2 2-hr labs. Prereq: 201 through 203 and 252.

522 Interior Graphics UGRD 3
Application and meaning of light, color, material structures, and surface textures; principles of spatial order systems, correlations and intercommunication of space components, forms, signs, styles.
Sp Qtr. 2 3-hr labs. Prereq: 461.08.

523 Interior Modeling UGRD 3
Principles and practices to represent spatial components and user interaction; communication and simulation of space in 2- and 3-dimensional form.
Au Qtr. 2 3-hr labs. Prereq: 521 or permission of instructor.

524 Interior Specification UGRD 3
Overview and analysis of interior products systems, furniture line market surveys, interior specification and contracting.
Wi Qtr. 2 3-hr labs. Prereq: 460.08 and jr or sr standing in Design.

525 Interior Design Detailing and Construction Documentation UGRD 3
Documenting exploring interior design construction techniques and their methods of representation.
Wi Qtr. 2 2-hr cl. Prereq: 460.08 and jr or sr standing in Design.

551 Industrial Design Manufacturing Materials and Processes UGRD 3
Overview of the properties and fabrication principles for materials used in visual communication, interior, and industrial design.
Wi Qtr. 2 2-hr cl, 1 2-hr lab. Prereq: 254, 460.04, and 501; concurs: 461.04.

552 Design Communication Practices UGRD 3
An overview of communication methods, techniques, and procedures utilized in the various stages of the design process.
Sp Qtr. 1 2-hr cl, 1 2-hr lab. Prereq: 461.

553E Design Matters UGRD 1-5
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: Permission of instructor. Service learning course. Repeatable to a maximum of 20 cr hrs.

553S Design Matters UGRD 1-5
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: Permission of instructor. Service learning course. Repeatable to a maximum of 20 cr hrs.
Students in this interdisciplinary design/build studio have the opportunity to work on a collaborative design environment with a local non-profit organization. PreReq: Permission of instructor. Service learning course. Repeatable to a maximum of 20 cr hrs.

Overview of the social/behavioral/physical nature of humans and their interaction with the environment as interpreted by the designer. Au Qtr. 1 2-hr cl, 1 2-hr lab. Prereq: 462 and 555.

Introduction to and application of qualitative and quantitative methodology useful in a problem solving process. Au Qtr. 2 2-hr cl, 1 2-hr lab. Prereq: 262; concour: 460; or permission of instructor.

Provides exposure to digital image capture, representation and manipulation from a design perspective.

Concepts of 3D modeling, rendering and animation for visualizing design forms. Wi, Su. Pr Qtrs. 2 2-hr cl. Not open to majors in Design.

Electronic communication techniques related to the web and interactivity; web design and technology principles.

Investigation of the administrative and legal aspects of the design profession contrasting the private firm with corporate and free-lance types of practice.

Integration of typographic and graphic elements based on visual imagery in design and development of three-dimensional visual imagery in design and development of three-dimensional visual communication solutions in packaging, exhibit design, or sign systems.

Design of products and product systems for complex functions; emphasis is on extending design consideration to include detailing, mock-ups, prototypes, testing and servicing.

Design of complex interior spaces emphasizing psychological aspects of spatial components, referring to human performance and behavior, detail development and specification of space-creating products.

Application of planning and analysis techniques in designing two- or three-dimensional visual imagery in design and development of three-dimensional visual communication systems; emphasis on application of visual communication research practices and methodology.

Introduction of field research experience and interdisciplinary expertise to the design of products and product systems.

Design of public environments using an interdisciplinary team approach for conceptualization, documentation, and presentation, emphasizing environmental characteristics, and the physical and psychological functionalism of space.

Individual student projects; students are to demonstrate their proficiency and grasp of previous subject matter in a project approved by the instructor; portfolio refinement.

Industrial design thesis project; students are to demonstrate their proficiency and grasp of previous subject matter in a project approved by the instructor; portfolio development.

Prereq: 661.08 or equiv with written permission of instructor.

An experimental workshop in techniques of manipulating existing images to create new visual ideas, emphasizing individual exploration; discussions and critiques.

Application of visual communication design principles to interactive interface design and navigational elements.

Application of visual communication principles to interactive multimedia and the integration of rich media resources.

Field application of design in a capacity requiring a close working relationship within a professional environment.

Field application for students in specialized programs.

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Undergraduate research or creative activities in varying topics.

Undergraduate research or creative activities in varying topics.

Undergraduate Scholarship: Research and Creative Activity in Design

Undergraduate Scholarship: Research and Creative Activity in Design

Undergraduate Scholarship: Research and Creative Activity in Design
780 Design Issues Seminar UGRD 4
Analysis of issues and inquiry into topics of relevance to design; group discussions and investigations of events, processes, manifestations, and procedures related to design.
Su, Au, Wi, Sp Qtrs. 2-2 hr. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 12 cr hrs.

783H Honors Research UGRD 3-5
Program of research and design investigation for each student with individual conferences resulting in an honors thesis and/or honors project.
Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.
This course is graded S/U.

785 Orientation to Graduate Studies in Design UGRD 4
Overview of current and future trends in design; introduction to design research and communication methods; faculty interest and research; available resources; requirements of graduate-level study.
Au Qtr. 2-2 hr.

786 Design Research and Inquiry UGRD 4
Design as a mode of inquiry, including examination of communication process and models, and emphasizing general problem-solving as a goal-directed, value-laden activity.
Wi Qtr. 2-2 hr. Prereq: 785 or permission of instructor.

787 Design Planning, Development, and Evaluation UGRD 4
Preparation for graduate thesis and project courses with emphasis on concept formulation and evaluation based on communication models and other techniques of design.
Sp Qtr. 2-2 hr. Prereq: 786 or permission of instructor.

797 Interdepartmental Seminar GRAD 1-5
Interdisciplinary knowledge and problems examined and discussed in the context of shared concerns.
Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

894 Group Studies GRAD 1-5
Group studies for students in specialized programs.
Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

990 Research Problems in Design GRAD 3-5
Research Problems in Design.
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 45 cr hrs.

993 Individual Studies GRAD 1-5
Individual Studies.
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

998 Research in Design: Thesis GRAD 1-18
Research for thesis purposes only.
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

Integrated Biomedical Science

670 Patient-Centered Research GRAD 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.
Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor for students not enrolled in the College of Medicine. Repeatable to a maximum of 12 cr hrs. This course is Progress (P) graded. Cross-listed in College of Medicine and Public Health. This is a progress course with a grade rendered each SP quarter. This course is graded S/U.

692 Clinical Biomedical Research GRAD 3
Through lectures, small groups, independent reading, and mentored clinical research projects, students learn the nature, goals, importance, basic principles, and administrative requirements of clinical research.
Su, Au, Wi, Sp Qtrs. 1 hr cl, 2-4 hr labs. Prereq: Graduate or professional student status or senior undergraduate student with permission of course director. This course is graded S/U.

701.01 Biology of Human Disease I: Nucleic Acid Biochemistry in Human Disease GRAD 2
Nucleic acid biochemistry and biochemical abnormalities of nucleic acids that lead to the expression of human diseases.
Au Qtr. Arr. Prereq: Permission of course director for non-IBGP students. Not open to students with credit for 701.05.

701.02 Biology of Human Disease I: Protein Chemistry and Function in Human Disease GRAD 2
Normal protein biochemistry and biomedical abnormalities of proteins that lead to the expression of human disease.
Au Qtr. Arr. Prereq: Permission of course director for non-IBGP students. Not open to students with credit for 701.05.

701.03 Biology of Human Disease I: Genome Structure and Function in Human Disease GRAD 2
Normal genome structure and function and genomic abnormalities that lead to the expression of human disease.
Au Qtr. Arr. Prereq: Permission of course director for non-IBGP students. Not open to students with credit for 701.05.

701.04 Biology of Human Disease I: Transcription and Translation Control Mechanisms in Human Disease GRAD 2
Gene transcription and translation and abnormalities in these mechanisms that lead to the expression of human disease.
Au Qtr. Arr. Prereq: Permission of course director for non-IBGP students. Not open to students with credit for 701.05.

701.05 Biology of Human Disease I: Biology of Human Disease GRAD 10
Presentation of biological mechanisms underlying the development, progression, and responses of the body to human diseases at the biochemical and molecular levels.
Au Qtr. 5.2 hr cl. Prereq: Permission of course coordinator for non-IBGP students. Not open to students with credit for 701.

702.01 Biology of Human Disease II: Molecular and Cellular Physiology GRAD 2
Normal molecular and cellular physiology and abnormalities in these mechanisms that lead to the expression of human diseases.
Wi Qtr. Arr. Prereq: Permission of course director for non-IBGP students. Not open to students with credit for 702.05.

702.02 Biology of Human Disease II: Signal Transduction and Molecular Pharmacology GRAD 2
Normal signal transduction and molecular pharmacology and abnormalities in these mechanisms that lead to the expression of human diseases.
Sp Qtr. Arr. Prereq: Permission of course director for non-IBGP students. Not open to students with credit for 702.05.

702.03 Biology of Human Disease II: Extracellular Matrix and Cytoskeleton in Human Disease GRAD 2
Normal aspects of the extracellular matrix and cytoskeleton and abnormalities in these that lead to the expression of human diseases.
Wi Qtr. Arr. Prereq: Permission of course director for non-IBGP students. Not open to students with credit for 702.05.

702.04 Biology of Human Disease II: Cancer Biology GRAD 2
Normal aspects of the cell cycle and abnormalities in these that lead to the expression of human cancer.
Sp Qtr. Arr. Prereq: Permission of course director for non-IBGP students. Not open to students with credit for 702.05.

702.05 Biology of Human Disease II: Biology of Human Disease GRAD 10
Presentation of biological mechanisms underlying the development, progression, and responses of the body to human diseases at the cellular and tissue levels.
Wi Qtr. 5.2 hr cl. Prereq: Permission of course coordinator for non-IBGP students. Not open to students with credit for 702.

703.01 Biology of Human Disease III: Developmental Biology GRAD 2
Normal cellular and molecular mechanisms in developmental biology and abnormalities in these mechanisms that lead to the expression of human diseases.
Wi Qtr. Arr. Prereq: Permission of course director for non-IBGP students. Not open to students with credit for 703.05.

703.02 Biology of Human Disease III: Host Defense GRAD 3
Normal immunological and non-immunological mechanisms of host defense and abnormalities in these mechanisms that lead to the expression of human diseases.
Wi Qtr. Arr. Prereq: Permission of course director for non-IBGP students. Not open to students with credit for 703.05.

703.03 Biology of Human Disease III: Integrated Organ Systems GRAD 3
Physiology of the cardiovascular, pulmonary and renal systems and pathophysiology of these that lead to the expression of human diseases.
Sp Qtr. Arr. Prereq: Permission of course director for non-IBGP students. Not open to students with credit for 703.05.

703.04 Biology of Human Disease III: Clinical Case Studies GRAD 1
Presents clinical cases to demonstrate the variables that must be accounted for in designing experiments that use human specimens.
Sp Qtr. Arr. Prereq: Permission of course director for non-IBGP students. Not open to students with credit for 703.05.

703.05 Biology of Human Disease III: Biology of Human Disease GRAD 10
Presentation of biological mechanisms underlying the development, progression, and responses of the body to human diseases at the tissue, organ and organ system levels.
Sp Qtr. 5.2 hr cl. Prereq: Permission of course coordinator for non-IBGP students. Not open to students with credit for 703.
## Integrated Biomedical Science

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
<th>Prerequisites</th>
<th>Repeatable</th>
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</thead>
<tbody>
<tr>
<td>704</td>
<td>Research Problem Solving in Biomedical Science</td>
<td>GRAD 2</td>
<td>Students will identify and solve problems in research materials distributed in advance to the class by the Module Leaders from IBGP 701, 702, and 703. Sp Qtr. 2 hr. Prereq: 701 and 702 or equiv with permission of instructor. This course is graded S/U.</td>
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<tr>
<td>705</td>
<td>Bioinformatics Applied to Human Disease</td>
<td>GRAD 1</td>
<td>Training with computerized bioinformatics packages and electronics sources of genomics information to develop skills for genomics research analysis of human diseases. Wi Qtr. 1 hr cl. Prereq: Equivalent of 701 and permission of course coordinator for non-IBGP students. Requires standard personal computers to access web.</td>
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<tr>
<td>706</td>
<td>Faculty Research in Biomedical Science</td>
<td>GRAD 1</td>
<td>IBGP faculty members will present current research in their laboratories that could provide the basis for student laboratory rotations and dissertation research. Su, Au, Wi, Sp Qtrs. 1 hr cl or 2 hr cl. Prereq: IBGP student or permission of course director. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.</td>
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<tr>
<td>707</td>
<td>Fundamentals of Grant Writing I</td>
<td>GRAD 2</td>
<td>Provide background information for and practical experience in grant writing. Au Qtr. 1-2 hr cl. Prereq: Permission of course directors for non-IBGP students. This course is graded S/U.</td>
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<tr>
<td>708</td>
<td>Fundamentals of Grant Writing II</td>
<td>GRAD 2</td>
<td>Provide experience and background information in reviewing NIH grants. Sp Qtr. 1-2 hr cl. Prereq: Permission of course directors for non-IBGP students. This course is graded S/U.</td>
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<tr>
<td>709</td>
<td>Statistical Aspects of Grant Writing</td>
<td>GRAD 1</td>
<td>To provide training and experience for IBGP students in preparing the statistical component of research grant proposals. Wi Qtr. 1 cl. Prereq: 707 and basic statistics course or equiv with permission of course coordinator. This course is graded S/U.</td>
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<tr>
<td>724</td>
<td>Molecular Pathogenesis</td>
<td>GRAD 5</td>
<td>In-depth presentation and discussion of the molecular and cellular mechanisms of pathogenesis, emphasizing current research in the field. Au Qtr. Prereq: Grad standing, advanced undergrads must have permission of instructor. Cross listed in Microbiology.</td>
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<tr>
<td>730</td>
<td>Biomedical Informatics I</td>
<td>GRAD 3</td>
<td>Introduces students to basic topics of bioinformatics including sequence analyses, proteomics, microarrays, regulatory networks, sequence and protein databases, etc. Au Qtr. Prereq: Cptitr 230 or equiv with permission of course director. Not open to students with credit for Biominf 730. Cross-listed in Biomedical Informatics.</td>
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<tr>
<td>731</td>
<td>Biomedical Informatics II</td>
<td>GRAD 3</td>
<td>Continuation of Biomedical Informatics I. Wi Qtr. Prereq: IBGP/Biominf 730 and/or Cptitr 230 or equiv with permission of course director. Not open to students with credit for Biominf 730. Cross-listed in Biomedical Informatics.</td>
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<tr>
<td>740</td>
<td>Selected Topics in Microbial Pathogenesis</td>
<td>GRAD 2</td>
<td>Student led discussion of classic and current literature in microbial pathogenesis. Wi Qtr. 1-2 hr cl. Prereq: Microbiol 724 or permission of instructor. Repeatable to a maximum of 6 cr hrs.</td>
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<tr>
<td>740</td>
<td>Selected Topics in Microbial Pathogenesis</td>
<td>GRAD 2</td>
<td>Student led discussion of classic and current literature in microbial pathogenesis. Wi Qtr. Prereq: Microbiol 724 or IBGP 724 or permission of instructor. Repeatable to a maximum of 6 cr hrs. Cross-listed in Microbiology.</td>
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<tr>
<td>762.01</td>
<td>Independent Studies in Medical Biochemistry</td>
<td>GRAD 3</td>
<td>Students will independently follow provided study guides to gain an understanding of the medical biochemistry essential for understanding the mechanism of human diseases. Prereq: Registration as IBGP graduate student or permission of course director.</td>
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<tr>
<td>762.02</td>
<td>Independent Studies in Human Histology</td>
<td>GRAD 2</td>
<td>Students will independently follow provided study guides to gain an understanding of the human histology essential for understanding the mechanism of human diseases. Prereq: Registration as IBGP graduate student or permission of course director.</td>
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<tr>
<td>762.03</td>
<td>Independent Studies in Human Neuroanatomy</td>
<td>GRAD 3</td>
<td>Students will independently follow provided study guides to gain an understanding of the neuroanatomy essential for understanding human neurological diseases. Prereq: Registration as IBGP graduate student or permission of course director.</td>
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<tr>
<td>762.04</td>
<td>Independent Studies in Human Neurophysiology</td>
<td>GRAD 4</td>
<td>Students will independently follow provided study guides to gain an understanding of the neurophysiology essential for understanding human neurological diseases. Prereq: Registration as IBGP graduate student or permission of course director.</td>
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<tr>
<td>762.05</td>
<td>Independent Studies in the Human Cardiovascular System</td>
<td>GRAD 2</td>
<td>Students will independently follow provided study guides to gain an understanding of the human cardiovascular system essential for understanding human cardiovascular diseases. Prereq: Registration as IBGP graduate student or permission of course director.</td>
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<tr>
<td>762.06</td>
<td>Independent Studies in the Human Respiratory System</td>
<td>GRAD 2</td>
<td>Students will independently follow provided study guides to gain an understanding of the human respiratory system essential for understanding human respiratory diseases. Prereq: Registration as IBGP graduate student or permission of course director.</td>
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<tr>
<td>762.07</td>
<td>Independent Studies in the Human Urinary System and Body Fluids</td>
<td>GRAD 2</td>
<td>Students will independently follow provided study guides to gain an understanding of the human renal system and body fluids essential for understanding human renal diseases. Prereq: Registration as IBGP graduate student or permission of course director.</td>
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<tr>
<td>762.08</td>
<td>Independent Studies in the Human Gastrointestinal System</td>
<td>GRAD 2</td>
<td>Students will independently follow provided study guides to gain an understanding of the human gastrointestinal system essential for understanding human gastrointestinal diseases. Prereq: Registration as IBGP graduate student or permission of course director.</td>
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<tr>
<td>762.09</td>
<td>Independent Studies in Human Molecular Biology and Genetics</td>
<td>GRAD 3</td>
<td>Students will independently follow provided study guides to gain an understanding of the molecular biology and genetics essential for understanding the mechanism of human diseases. Prereq: Registration as IBGP graduate student or permission of course director.</td>
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<tr>
<td>762.10</td>
<td>Independent Studies in Human Blood and Lymphatic Tissues</td>
<td>GRAD 1</td>
<td>Students will independently follow study guides to gain an understanding of human blood and lymphatic tissues essential for understanding disease mechanism in those tissues. Prereq: Registration as IBGP graduate student or permission of course director.</td>
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<tr>
<td>762.11</td>
<td>Independent Studies in Human Immunologiological Mechanisms</td>
<td>GRAD 2</td>
<td>Students will independently follow provided study guides to gain an understanding of the immunological mechanisms essential for understanding the pathogenesis of human diseases. Prereq: Registration as IBGP graduate student or permission of course director.</td>
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<tr>
<td>762.12</td>
<td>Independent Studies in Human Medical Nutrition</td>
<td>GRAD 3</td>
<td>Students will independently follow provided study guides to gain an understanding of the medical nutrition essential for understanding the mechanism of human diseases. Prereq: Registration as IBGP graduate student or permission of course director.</td>
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<tr>
<td>762.13</td>
<td>Independent Studies in Human Endocrine and Metabolic Systems</td>
<td>GRAD 2</td>
<td>Students will independently follow provided study guides to gain an understanding of human endocrine and metabolic systems essential for understanding human endocrine and metabolic diseases. Prereq: Registration as IBGP graduate student or permission of course director.</td>
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<tr>
<td>762.14</td>
<td>Independent Studies in the Human Reproductive System</td>
<td>GRAD 2</td>
<td>Students will independently follow provided study guides to gain an understanding of the human reproductive system essential for understanding human reproductive diseases. Prereq: Registration as IBGP graduate student or permission of course director.</td>
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<tr>
<td>763.01</td>
<td>Independent Studies in Human Pathologic Mechanisms</td>
<td>GRAD 3</td>
<td>Students will independently follow study guides to gain an understanding of the basic pathologic mechanisms leading to human disease. Prereq: Registration as IBGP graduate student or permission of course director.</td>
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<tr>
<td>763.02</td>
<td>Independent Studies in Human Microbial Mechanisms</td>
<td>GRAD 4</td>
<td>Students will independently follow study guides to gain an understanding of microbial mechanisms leading to human disease. Prereq: Registration as IBGP graduate student or permission of course director.</td>
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<tr>
<td>763.03</td>
<td>Independent Studies in Human Drug Mechanisms</td>
<td>GRAD 6</td>
<td>Students will independently follow study guides to gain an understanding of pharmacokinetics, pharmacodynamics, and mechanisms of action of drugs used to treat human diseases. Prereq: Registration as IBGP graduate student or permission of course director.</td>
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<tr>
<td>763.04</td>
<td>Independent Studies in Human Infectious Diseases</td>
<td>GRAD 5</td>
<td>Students will independently follow study guides to gain an understanding of human infectious diseases. Prereq: Registration as IBGP graduate student or permission of course director.</td>
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<tr>
<td>763.05</td>
<td>Independent Studies in Cardiovascular Pathobiology</td>
<td>GRAD 6</td>
<td>Students will independently follow study guides to gain an understanding of human cardiovascular pathobiology. Prereq: Registration as IBGP graduate student or permission of course director.</td>
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</tbody>
</table>
763.06 Independent Studies in Respiratory Pathobiology GRAD 2
Students will independently follow study guides to gain an understanding of human respiratory pathobiology.
Prereq: Registration as IBGP graduate student or permission of course director; 763.06 and 763.01.

763.07 Independent Studies in Renal Pathobiology GRAD 3
Students will independently follow study guides to gain an understanding of human renal pathobiology.
Prereq: Registration as IBGP student or permission of course director; 762.07 and 763.01.

763.08 Independent Studies in Endocrine Pathobiology GRAD 2
Students will independently follow study guides to gain an understanding of human endocrine pathobiology.
Prereq: Registration as IBGP graduate student or permission of course director; 762.13 and 763.01.

763.09 Independent Studies in Gastrointestinal Pathobiology GRAD 2
Students will independently follow study guides to gain an understanding of human gastrointestinal pathobiology.
Prereq: Registration as IBGP student or permission of course director; 762.08 and 763.01.

763.10 Independent Studies in Reproductive Pathobiology GRAD 2
Students will independently follow study guides to gain an understanding of human reproductive pathobiology.
Prereq: Registration as IBGP graduate student or permission of course director; 762.14 and 763.01.

763.11 Independent Studies in Human Neuro-Pathobiology GRAD 2
Students will independently follow study guides to gain an understanding of pathobiology of human neurological diseases.
Prereq: Registration as IBGP graduate student or permission of course director; 762.03, 762.04 and 763.01.

763.12 Independent Studies in Psychiatry GRAD 1
Students will independently follow study guides to gain an understanding of psychiatric disorders.
Prereq: Registration as IBGP student or permission of course director.

763.13 Independent Studies in Hematology GRAD 2
Students will independently follow study guides to gain an understanding of hematologic pathobiology.
Prereq: Registration as IBGP graduate student or permission of course director.

763.14 Independent Studies in Rheumatic and Musculoskeletal Pathobiology GRAD 1
Students will independently follow study guides to gain an understanding of the pathobiological mechanisms underlying the expression of human rheumatic and musculoskeletal diseases.
Prereq: Registration as IBGP graduate student or permission of course director.

763.15 Independent Studies in Ophthalmic-Pathobiology GRAD 1
Students will independently follow study guides to gain an understanding of the pathobiological mechanisms underlying the expression of human ophthalmological diseases.
Prereq: Registration as IBGP graduate student or permission of course director.

764 Introduction to Clinical Aspects of Translational Research GRAD 1
Students will attend lectures given to medical students that prepare them for studies in the clinical environment.
Sp Qtr. Arr. Prereq: IBGP student and permission of course director. This course is graded S/U.

765.01 Clinical Experience: Acute and Cancer Pain Therapy GRAD 2
Students will participate in inpatient or outpatient clinical activities in an area related to the student's dissertation research.
Prereq: IBGP student and permission of course director.

765.02 Clinical Experience: Alcohol and Other Drug Dependency GRAD 2
Students will participate in inpatient or outpatient clinical activities in an area related to the student's dissertation research.
Prereq: IBGP student and permission of course director.

765.03 Clinical Experience: Allergy and Clinical Immunology GRAD 2
Students will participate in inpatient or outpatient clinical activities in an area related to the student's dissertation research.
Prereq: IBGP student and permission of course director.
### Integrated Biomedical Science

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit</th>
<th>Pre-Reqs</th>
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<tbody>
<tr>
<td>765.20</td>
<td>Clinical Experience: Endocrinology and Metabolism-Clinical</td>
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<td>IBGP student and permission of course director.</td>
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<td>765.21</td>
<td>Clinical Experience: Gastroenterology</td>
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<tr>
<td>765.22</td>
<td>Clinical Experience: General Medicine</td>
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<tr>
<td>765.23</td>
<td>Clinical Experience: Geriatrics</td>
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<tr>
<td>765.24</td>
<td>Clinical Experience: Clinical Gynecology</td>
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<tr>
<td>765.25</td>
<td>Clinical Experience: Gynecologic Oncology</td>
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<tr>
<td>765.26</td>
<td>Clinical Experience: Hematology</td>
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<tr>
<td>765.27</td>
<td>Clinical Experience: Hematology/Oncology</td>
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<tr>
<td>765.28</td>
<td>Clinical Experience: Infectious Diseases</td>
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<tr>
<td>765.29</td>
<td>Clinical Experience: Long Term Care of the HIV</td>
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<tr>
<td>765.30</td>
<td>Clinical Experience: Medical Intensive Care</td>
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<tr>
<td>765.31</td>
<td>Clinical Experience: Nephrology</td>
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<tr>
<td>765.32</td>
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<tr>
<td>765.33</td>
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<td>Clinical Experience: Neuropsychiatry</td>
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<tr>
<td>765.35</td>
<td>Clinical Experience: Obstetrics High Risk</td>
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<tr>
<td>765.36</td>
<td>Clinical Experience: Obstetrics</td>
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<tr>
<td>765.37</td>
<td>Clinical Experience: Normal Labor and Delivery</td>
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<tr>
<td>765.38</td>
<td>Clinical Experience: Oncology</td>
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<td>765.39</td>
<td>Clinical Experience: Ophthalmology</td>
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<tr>
<td>765.40</td>
<td>Clinical Experience: Otolaryngology Head and Neck Surgery</td>
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<td>765.41</td>
<td>Clinical Experience: Orthopedics</td>
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<tr>
<td>765.42</td>
<td>Clinical Experience: Pediatric Cardiomyopathy</td>
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<td>765.43</td>
<td>Clinical Experience: Pediatric Cardiology</td>
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<td>765.44</td>
<td>Clinical Experience: Pediatric Cardiothoracic</td>
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<tr>
<td>765.45</td>
<td>Clinical Experience: Pediatric Clinical Gastroenterology</td>
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<td>765.46</td>
<td>Clinical Experience: Pediatric Clinical Genetics</td>
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<td>765.47</td>
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<td>765.48</td>
<td>Clinical Experience: Pediatric Developmental Disorders</td>
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<tr>
<td>765.49</td>
<td>Clinical Experience: Pediatric Emergency Medicine</td>
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<td>765.50</td>
<td>Clinical Experience: Pediatric Endocrinology</td>
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<tr>
<td>765.51</td>
<td>Clinical Experience: Pediatric Infectious Diseases</td>
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</tr>
<tr>
<td>765.52</td>
<td>Clinical Experience: Pediatric Hematology/Oncology</td>
<td>2</td>
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</tbody>
</table>
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765.53 Clinical Experience: Pediatric Intensive Care  GRAD  2
Students will participate in inpatient or outpatient clinical activities in an area related to the student's dissertation research.
Prereq: IBGP student and permission of course director.

765.54 Clinical Experience: Pediatric Nephrology  GRAD  2
Students will participate in inpatient or outpatient clinical activities in an area related to the student's dissertation research.
Prereq: IBGP student and permission of course director.

765.55 Clinical Experience: Pediatric Otolaryngology  GRAD  2
Students will participate in inpatient or outpatient clinical activities in an area related to the student's dissertation research.
Prereq: IBGP student and permission of course director.

765.56 Clinical Experience: Pediatric Pulmonology  GRAD  2
Students will participate in inpatient or outpatient clinical activities in an area related to the student's dissertation research.
Prereq: IBGP student and permission of course director.

765.57 Clinical Experience: Pediatric Surgery  GRAD  2
Students will participate in inpatient or outpatient clinical activities in an area related to the student's dissertation research.
Prereq: IBGP student and permission of course director.

765.58 Clinical Experience: Pediatric Urology  GRAD  2
Students will participate in inpatient or outpatient clinical activities in an area related to the student's dissertation research.
Prereq: IBGP student and permission of course director.

765.59 Clinical Experience: Physical Medicine and Rehabilitation  GRAD  2
Students will participate in inpatient or outpatient clinical activities in an area related to the student's dissertation research.
Prereq: IBGP student and permission of course director.

765.60 Clinical Experience: Plastic Surgery  GRAD  2
Students will participate in inpatient or outpatient clinical activities in an area related to the student's dissertation research.
Prereq: IBGP student and permission of course director.

765.61 Clinical Experience: Pulmonary  GRAD  2
Students will participate in inpatient or outpatient clinical activities in an area related to the student's dissertation research.
Prereq: IBGP student and permission of course director.

765.62 Clinical Experience: Radiation Oncology  GRAD  2
Students will participate in inpatient or outpatient clinical activities in an area related to the student's dissertation research.
Prereq: IBGP student and permission of course director.

765.63 Clinical Experience: Reproductive Endocrinology and Infertility  GRAD  2
Students will participate in inpatient or outpatient clinical activities in an area related to the student's dissertation research.
Prereq: IBGP student and permission of course director.

765.64 Clinical Experience: Rheumatology  GRAD  2
Students will participate in inpatient or outpatient clinical activities in an area related to the student's dissertation research.
Prereq: IBGP student and permission of course director.

765.65 Clinical Experience: Surgical Intensive Care  GRAD  2
Students will participate in inpatient or outpatient clinical activities in an area related to the student's dissertation research.
Prereq: IBGP student and permission of course director.

765.66 Clinical Experience: Surgical Intensive Care/Anesthesia  GRAD  2
Students will participate in inpatient or outpatient clinical activities in an area related to the student's dissertation research.
Prereq: IBGP student and permission of course director.

765.67 Clinical Experience: Surgical Oncology  GRAD  2
Students will participate in inpatient or outpatient clinical activities in an area related to the student's dissertation research.
Prereq: IBGP student and permission of course director.

765.68 Clinical Experience: Thoracic Surgery  GRAD  2
Students will participate in inpatient or outpatient clinical activities in an area related to the student's dissertation research.
Prereq: IBGP student and permission of course director.

765.69 Clinical Experience: Transfusion Medicine  GRAD  2
Blood Banking
Students will participate in inpatient or outpatient clinical activities in an area related to the student's dissertation research.
Prereq: IBGP student and permission of course director.

765.70 Clinical Experience: Transplantation Surgery  GRAD  2
Students will participate in inpatient or outpatient clinical activities in an area related to the student's dissertation research.
Prereq: IBGP student and permission of course director.

765.71 Clinical Experience: Urology  GRAD  2
Students will participate in inpatient or outpatient clinical activities in an area related to the student's dissertation research.
Prereq: IBGP student and permission of course director.

765.72 Clinical Experience: Vascular Surgery  GRAD  2
Students will participate in inpatient or outpatient clinical activities in an area related to the student's dissertation research.
Prereq: IBGP student and permission of course director.

765.73 Clinical Experience: Adult Clinical Genetics  GRAD  2
Students will participate in inpatient or outpatient clinical activities in an area related to the student's dissertation research.
Prereq: IBGP student and permission of course director.

780 Presentation Skills for Biomedical Researchers  GRAD  1
Students will learn scientific presentation skills through oral and poster presentations of biomedical research in progress given by themselves, faculty and postdocs.
Su, Au, Wi, Sp Qtrs. 1-hr cl. Prereq: Registration as graduate student or permission of course director. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

781 Animal Models of Human Disease  GRAD  1
Transgenic and knockout mouse technology and examples of models for genetic diseases with each pattern of inheritance.
Wi Qtr. 1 cl. Prereq: IBGP 701 or Mogen 701.

782 Molecular and Cellular Mechanisms of Stress-Associated Diseases in the Human
Through presentations and critical discussions of research and literature students will gain an understanding of the mechanisms underlying stress-associated diseases and methods to study these.
Su, Au, Wi, Sp Qtrs. 2-hr cl. Prereq: Registration as IBGP student or permission of course director. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

789 Immunological Research of Pediatric Diseases  GRAD  1
Trainees will prepare and give presentations on current research on immunological mechanisms of pediatric diseases.
Au, Wi, Sp Qtrs. 1-hr cl. Prereq: Permission of course director for non-IBGP students. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

790 Cancer Immunology: Critical Journal Readings  GRAD  1
Faculty, students and postdocs will give critical interpretations of research and journal readings on cancer immunology.
Su, Au, Wi, Sp Qtrs. 1-hr cl. Prereq: Registration as graduate student or permission of course director and undergraduate major advisor for undergraduates. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

791 Current Research in Human Viral Diseases  GRAD  1
Faculty, students and postdoctoral trainees will give critical interpretations of research and journal readings on human viral diseases.
Su, Au, Wi, Sp Qtrs. 1-hr cl. Prereq: Registration as IBGP graduate student or permission of course director. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

792 Translational Biomedical Research  GRAD  2
Through lectures, small group discussions and independent reading, students will learn the nature, goals, importance, basic principles and administrative requirements of translational research.
Su, Au, Wi, Sp Qtrs. 2-hr cl. Prereq: IBGP graduate student or permission of course director.

793 Individual Studies in Integrated Biomedical  GRAD  1-15
Science
A research project will be assigned by a faculty member to meet the individual student's educational goals.
Su, Au, Wi, Sp Qtrs. (1-15)-hr labs. Prereq: Permission of course coordinator for non-IBGP students. This course is graded S/U. Repeatable.

795 Host-Pathogen Interactions: Research Seminar  GRAD  1
Faculty, students and outside speakers will give research presentations on microbial-host interactions.
Su, Au, Wi, Sp Qtrs. 1-hr cl. Prereq: Registration as graduate student or permission of both course director and undergraduate major advisor for undergraduates. Repeatable to a maximum of 12 cr hrs. Cross-listed in Microbiology. This course is graded S/U.

796 Research Seminars in Heart and Lung Disease  GRAD  1
Faculty and outside speakers will give basic and clinical science research seminars in mechanisms of heart and lung disease.
Su, Au, Wi, Sp Qtrs. 1-hr cl. Prereq: Permission of course director for non-IBGP students. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

797.01 Integrated Biomedical Science Graduate Seminar
Faculty, outside speakers, and graduate students will give research presentations on topics in parallel with the course sequence Biology of Human Disease.
Au, Wi, Sp Qtrs. 1-hr cl. Prereq: Permission of course director for non-IBGP students. This course is graded S/U. Repeatable to a maximum of 20 cr hrs.
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797.02 Integrated Biomedical Science Student Seminar GRAD 1
Graduate students will give presentations on their dissertation research. Au, Wi, Sp Qtrs. 1-hr cl. Prereq: Permission of course director for non-IBGP students. Repeatable to a maximum of 30 cr hrs.

798 Seminar in Pediatric Research GRAD 1
Faculty and outside speakers will give presentations on research in biological mechanisms of pediatric diseases. Au, Wi, Sp Qtrs. 1-hr cl. Prereq: Permission of course director for non-IBGP students. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

799.01 Cancer Immunology: Research Seminar GRAD 1
Registered students attend research presentations on cancer immunology given by faculty, students and postdocs. Su, Au, Wi, Sp Qtrs. 1-hr cl. Prereq: Registration as graduate student or permission of course director. combined for IBGP 799.01 and IBGP 799.02. This course is graded S/U. Repeatable to a maximum of 12 cr hrs.

799.02 Cancer Immunology: Research Seminar Presentation GRAD 1
Faculty, students and postdocs will give research presentations on cancer immunology. Su, Au, Wi, Sp Qtrs. 1-hr cl. Prereq: Registration as graduate student or permission of course director. combined for IBGP 799.01 and IBGP 799.02. Repeatable to a maximum of 12 cr hrs.

805.01 Research Techniques and Resources GRAD 6
Survey of research techniques and resources available to investigate and solve problems in research on the biology of human disease. Su Qtr. 3 hr, 3 3-hr labs. Prereq: Registration as IBGP student or permission of course director or permission of instructor.

805.02 Lectures on Research Techniques and Resources GRAD 3
Survey lectures on research techniques used to solve problems in modern cell and molecular biology, immunology, biochemistry, microbiology, microscopy, laboratory safety, and related available resources. Su Qtr. 3 hr cl. Prereq: Registration as IBGP student, permission of course director and undergraduate major advisor for undergraduates.

851 Advanced Seminar in Integrated Biomedical Science GRAD 1
Interdisciplinary biomedical topics will be reviewed in depth with student participation in analyzing literature, and faculty and outside experts presenting their own original research. Au, Wi, Sp Qtrs. 1-1 cl. Prereq: Permission of course director for non-IBGP students. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

852 Career Discovery in the Biomedical Sciences GRAD 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. Au, Sp Qtrs. 1.5-3 cl, alternate weeks. Prereq: IBGP students only. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

880.01 Signature Program Translational Science: Curriculum-Immunology & Inflammation GRAD 3
Translational Science to understand inflammatory diseases, viral diseases, Cancer, and wound healing. Au Qtr. 2.15 hr mtgs and web-based discussions. Prereq: Professional MD or DO degree or with permission of instructor.

880.02 Signature Program Translational Science: Curriculum-Cancer Biology & Therapeutics GRAD 3
Translational Science to understand inflammatory diseases, viral diseases, Cancer, and wound healing. Wi Qtr. 2.15 hr mtgs and web-based discussions. Prereq: Professional MD or DO degree or with permission of instructor.

880.03 Signature Program Translational Science: Curriculum-Infection & Host/Pathogen Science GRAD 3
Translational Science to understand inflammatory diseases, viral diseases, Cancer, and wound healing. Sp Qtr. 2.15 hr mtgs and web-based discussions. Prereq: Professional MD or DO degree or with permission of instructor.

880.04 Signature Program Translational Science: Curriculum-Regenerative Medicine & Wound Healing GRAD 3
Translational Science to understand Inflammatory diseases, Viral diseases, Cancer, and Wound Healing. Su Qtr. 2.15 hr mtgs and web-based discussions. Prereq: Professional MD or DO degree or with permission of instructor.

891.01 Interdisciplinary Seminar on Biomedical Images GRAD 1-2
Graduate seminar for Graduate Interdisciplinary Specialization in Comprehensive Engineering and Science of Medical Images. Au, Wi, Sp Qtrs. 1 cl. Prereq: Grad standing. Cross-listed in Biomedical Engineering, Biomedical Informatics, Biophysics, Computer Science and Engineering, Electrical and Computer Engineering, Pathology, Radiology, Statistics, and Vision Science. This course is graded S/U. Repeatable to a maximum of 3 cr hrs.

999 Research in Integrated Biomedical Science GRAD 1-18
Research for dissertation purposes only. Su, Au, Wi, Sp Qtrs. (1-15-hr) lab. Repeatable. This course is graded S/U.

Internal Medicine

779 Free Radicals in Biomedicine GRAD 3
A background introductory course in free radical biology and medicine, focused on biologically relevant radicals, their physiological and pathophysiological roles and underlying physiological-chemical processes. Sp Qtr. Prereq: Graduate level biochemistry, physical chemistry and/or biophysics recommended. Undergraduates only by permission of instructor. Cross-listed in Biophysics.

779 Introduction to Gerontology GRAD 3
Provides a foundation for the further study of aging and development of improved aging services. Physiological, cognitive, and social dimensions of aging are considered. Au, Sp Qtrs. Distance Learning course as part of the SAGE program. This course is graded S/U.

793.02 Individual Studies: Cardiology GRAD 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: Cardiology. Prereq: Permission of instructor. This course is graded S/U. Repeatable to a maximum of 18 cr hrs.

793.04 Individual Studies: Endocrinology GRAD 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: Endocrinology. Prereq: Permission of instructor. This course is graded S/U. Repeatable to a maximum of 18 cr hrs.

793.08 Individual Studies: Infectious Diseases GRAD 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: Infectious Diseases. Prereq: Permission of instructor. This course is graded S/U. Repeatable to a maximum of 18 cr hrs.

793.10 Individual Studies: Pulmonary Diseases GRAD 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: Pulmonary Diseases. Prereq: Permission of instructor. This course is graded S/U. Repeatable to a maximum of 18 cr hrs.

793.12 Individual Studies: Rheumatology GRAD 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: Rheumatology. Prereq: Permission of instructor. This course is graded S/U. Repeatable to a maximum of 18 cr hrs.

794 Group Studies in Medicine GRAD 6-18
Group studies of special topics in medicine. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

795 Issues and Trends in Aging GRAD 3
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. Au Qtr. Distance Learning course as part of the SAGE program and is also approved as an elective in the Graduate Interdisciplinary Specialization in Aging. This course is graded S/U.

796 Advanced Readings in Global Health Research GRAD 1
Explores in-depth articles with an emphasis on the particular challenges in design, implementation, measurement, evaluation and interpretation of data collected in resource-constrained settings. ^ Prereq: Professional or graduate student enrolled in GIS in Global Health or permission of instructor.

797 Interdepartmental Seminars GRAD 1-5
Interdepartmental Seminars. Wi Qtr. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

850.01 Seminar: Allergy GRAD 1-3
Discussion of pertinent literature and research projects in various subspecialty areas with emphasis on basic science concepts. Prereq: Permission of instructor. Repeatable.

850.02 Seminar: Cardiology GRAD 1-3
Discussion of pertinent literature and research projects in various subspecialty areas with emphasis on basic science concepts. Prereq: Permission of instructor. This course is graded S/U. Repeatable.

850.03 Seminar: Dermatology GRAD 1-3
Discussion of pertinent literature and research projects in various subspecialty areas with emphasis on basic science concepts. Prereq: Permission of instructor. This course is graded S/U. Repeatable.
230 Introduction to Peace Studies UGRD 5
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. 201H (honors) may be available. Su, Au, Wi, Sp Qtrs. 2 2-hr cl. GEC soc sci organizations and polities and social diversity - international issues (Global) course.

210 Introduction to Western Europe UGRD 5
Introduction to Western Europe with a particular attention to its social, political, cultural and artistic development over the past several centuries. Au, Wi, Sp Qtrs. 2 2-hr cl. Honors embedded course available. GEC soc sci human, natural, and economic resources and social diversity - international issues (Western) and historical survey course.

215 Introduction to Development Studies UGRD 5
Introduction to the contemporary field of development studies through examination of the developing countries of Asia, Africa, and Latin America. 215H (honors) may be available. Su, Au, Wi, Sp Qtrs. 2 2-hr cl. GEC soc sci human, natural, and economic resources and social diversity - international issues (Global) course.

230 The Rise and Fall of the Soviet Union UGRD 5
Survey of the birth, growth, decline, and death of communism in the Soviet Union: land, people, history, politics, social institutions, and culture; conducted by members of several departments. 230H (honors) may be available. Au, Sp Qtrs. 2 2-hr cl. GEC soc sci organizations and polities and social diversity - international issues (Global) course.

230H The Rise and Fall of the Soviet Union UGRD 5
Survey of the birth, growth, decline, and death of communism in the Soviet Union: land, people, history, politics, social institutions, and culture; conducted by members of several departments. Prereq: Honors program or permission of department or instructor. GEC soc sci organizations and polities course.

231 Introduction to Eastern Europe since World War II UGRD 5
Survey of the land, people, history, politics, social institutions, literature, and arts of Eastern Europe since World War II. Wi Qtr. 2 2-hr cl. GEC soc sci organizations and polities and social diversity - international issues (Global) course.

235 Introduction to China and Japan UGRD 5
Interdepartmental survey of contemporary Asian civilization; geographic and racial background, historical and cultural heritage, social organizations, economic and political problems, and international relations. Sp Qtr. 2 2-hr cl. GEC soc sci organizations and polities and social diversity - international issues (Global) course.

240 Introduction to Latin America UGRD 5
Interdepartmental survey of Latin American societies, anthropology, economics, history, literature, geography, and agriculture. 240H (honors) may be available. Au, Sp Qtrs. 2 2-hr cl. GEC soc sci human, natural, and economic resources and social diversity - international issues (Global) course.

245 Introduction to the Modern Middle East UGRD 5
Interdepartmental survey of the land, people, history, politics, religions, philosophy, social institutions, economic development, literature, and the arts, conducted by members of several departments. Wi Qtr. 2 2-hr cl. GEC soc sci organizations and polities and social diversity - international issues (Global) course.

250 Introduction to Africa UGRD 5
Interdepartmental survey of the land, people, history, politics, social institutions, economic development, literature, and the arts, conducted by members of several departments. Sp Qtr. 2 2-hr cl. GEC soc sci organizations and polities and social diversity - international issues (Global) course.

280 Feast or Famine: The Global Business of Food UGRD 5
Global and regional trends in food consumption and production are surveyed. Trade, technological change, and other responses to food scarcity are analyzed. Wi Qtr. 2 2.5-hr cl. Not open to students with credit for AEDEcon 280 or 335. Cross-listed in Agricultural, Environmental, and Development Economics. GEC soc sci human, natural, and economic resources and social diversity - international issues (Global) course.

294 Group Studies UGRD 1-5
Groups of students are offered the opportunity to pursue the interdepartmental study of special topics. Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

300 Introduction to Homeland Security UGRD 5
Comprehensive overview of U.S. homeland security. Threats from natural disasters, terrorism, etc will be studied. Programs and technologies involved in disaster prevention and response. Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: Rank 2 or higher or permission of instructor.

350 Introduction to Intelligence UGRD 5
Provides students with a comprehensive introduction to the gathering, analysis, and use of military and political intelligence in a number of countries. 350H (honors) may be available. Su, Wi, Sp Qtrs. 2 2-hr cl.

350H Introduction to Intelligence UGRD 5
Provides students with a comprehensive introduction to the gathering, analysis, and use of military and political intelligence in a number of countries. Su, Wi, Sp Qtrs. 2 2.5-hr cl. Prereq: Honors program or permission of department or instructor.

356 Introduction to Globalization UGRD 5
Analysis of globalization in all its aspects, economic, political, cultural, environmental and technological, as well as its extent and desirability. Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: Soph standing or above, or permission of instructor. GEC soc sci individuals and groups course.

443 The Analysis and Display of Data UGRD 5
Analysis of data; introduction to the internet; introduction to techniques in the graphical presentation of data; designed for economics and international studies majors. Su, Au, Wi, Sp Qtrs. 2 2-hr cl, lab arr. Prereq: GEC data analysis course. Not open to students with credit for Econ 443. Cross-listed in Economics.

455 Bioterrorism: An Overview UGRD 5
A broad awareness course on the bioterrorism threat to our food supply, crops, animal and public health, and bioterrorist organizations. Wi Qtr. 2 2-hr cl. Prereq: Jr or sr standing, or permission of instructor. Not open to students with credit for PHPTH 455. Cross-listed in Plant Pathology.

501 Selected Problems in International Studies UGRD 5
Class discussions, with several guest speakers, informal conferences, and a reading and research program arranged to meet the special needs of those enrolled. 501H (honors) may be available. Au, Wi, Sp Qtrs. 2 2-hr cl. Open only to IntStds majors or students with equiv preparation. Repeatable to a maximum of 15 cr hrs.
264 International Studies

515 Ethnicity, Development and the State in Sub-Saharan Africa UGRD 5
Course takes a theoretical and comparative historical approach to analyzing problems of development and ethnic conflict in Sub-Saharan Africa.
Au Qtr. 2-2 hr cl. Prereq; Rank 2 or higher permission of Instructor. Not open to students with credit for AfrAmASt 515. Cross-listed with AfrAmASt 515.

525 Contemporary Religious Movements in Global Context UGRD 5
Examination of contemporary religious movements within the context of larger political, cultural, and economic processes, including post-colonialism, modernization, and globalization.
Sp Qtr. Prereq; One course in CompStd or IntStds or grad standing or permission of Instructor. Not open to students with credit for CompStd 525. Cross-listed in Comparative Studies.

530 Comparative Communism: China and Russia UGRD 5
Seeks to understand the different trajectories of the world's two great communist powers of the 20th century: China and Russia.
Wi Qtr. 2 2-hr cl. Prereq; Rank 2 or permission of Instructor.

531 The City and Culture UGRD 5
Introduction to the comparative and cross-cultural study of cities, urban culture, and urbanism.
Wi, Sp Qtr. 2 2-hr cl. Prereq; One course in CompStd or IntStds, or grad standing, or permission of Instructor. Not open to students with credit for CompStd 531. Cross-listed in Comparative Studies.

532 Food Security and Globalization UGRD 5
Examination of the causes and solutions for food insecurity. Global and local factors that affect access to food are also considered.
Au Qtr. 2 2-hr cl. Prereq; AEDEcon 200 or Econ 200 or grad standing or permission of Instructor. Not open to students with credit for 434 or AEDEcon 434, 532. Cross-listed in Agricultural, Environmental, and Development Economics.

533 Organized Crime and Corruption in Contemporary Europe UGRD 5
Organized crime and corruption in Post-Communist Europe will be studied. Trafficking in drugs, weapons, organs, people and nuclear materials will be explored.
Au, Wi, Sp Qtr. 2 2-hr cl. Prereq; Rank 2 or higher permission of instructor.

535 Economic Development Processes in Developing Countries UGRD 5
Study of major Third World problems using principles of development economics; examines poverty, inequality, unemployment, population growth, resource use and rural development.
Wi, Sp Qtr. 2-2 hr cl. Prereq; AEDEcon 200 or Econ 200. Not open to students with credit for 435 or AEDEcon 435, 535. Cross-listed in Agricultural, Environmental, and Development Economics.

536 Economic Development of Sub-Saharan Africa UGRD 5
Issues shaping economic development and stagnation in contemporary Africa such as population growth, agricultural development, industrialisation, trade, structural adjustment and environmental issues.
Au Qtr. 2 2-hr cl. Prereq; AEDEcon 200 or Econ 200. Not open to students with credit for 436 or AEDEcon 436, 536. Cross-listed in Agricultural, Environmental, and Development Economics.

537 Middle Eastern Economic Development UGRD 5
Economic conditions, problems, integrations and potentials of Middle Eastern economies using principles of economic development and growth models.
Wi, Qtr. 2 2-hr cl. Prereq; AEDEcon 200 or Econ 200. Not open to students with credit for 437, AEDEcon 437, 537 or Econ 537. Cross-listed in Agricultural, Environmental, and Development Economics and Economics.

538 Latin American Economic Development UGRD 5
Public policy and other factors influencing economic growth in Latin America are examined.
Sp Qtr. 2 2.5-hr cl. Prereq; AEDEcon 200 or Econ 200 or equiv. Not open to students with credit for 438 or AEDEcon 438, 538. Cross-listed in Agricultural, Environmental, and Development Economics.

539 China's Economic Reforms and Globalization UGRD 5
An introductory survey course of economic reforms and globalization in China with emphasis on economic and social transformation, and its integration into the global economy.
Sp Qtr. 2 2-hr cl. Prereq; AEDEcon 200 or Econ 200 or permission of instructor. Not open to students with credit for 439 or AEDEcon 439, 539. Cross-listed in Agricultural, Environmental, and Development Economics.

540 International Commerce and the World Economy UGRD 5
Application of trade theory and policies to world trade that impacts global business.
Wi, Qtr. 2 2.5-hr cl. Prereq; AEDEcon 200 or Econ 200, or permission of instructor. Not open to students with credit for AEDEcon 540. Cross-listed in Agricultural, Environmental, and Development Economics.

542 Incomplete Democracies: The (Un)Rule of Law in Latin America UGRD 5
This course explores various forms of violence including electoral violence and political assassination, organized crime, police brutality, and other human rights abuses in Latin America.
Au, Sp Qtr. Sophomore standing or higher. Not open to students with credit for PolSci 542. Cross-listed in Political Science.

550 Cultural Diplomacy UGRD 5
Cultural Diplomacy is the exchange of information, ideas, and values among nations and peoples. Public and private mechanisms for these exchanges are explored.
Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq; Soph standing or higher, or permission of instructor.

551 Intervening for Peace: Peacekeeping and Collective Security UGRD 5
Exploration of the theory and practice of international peacekeeping and collective security.
Au, Sp Qtrs. 2 2-hr cl.

552 Model United Nations UGRD 5
Interactive diplomatic simulation of the political processes of the UN system focusing on selected global problems; involves class discussions, group projects, and significant student participation.
Wi Qtr. 2 2-hr cl.

553 Terror and Terrorism UGRD 5
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.
Su, Au, Wi, Sp Qtrs. 2 2-hr cl.

554 Science, Technology and the Cold War UGRD 5
Explores how science and technology, especially computer science and arms race technologies, influenced the global conflict between America and the Soviet Union.
Wi Qtr. 2 2-hr cl.

555 The Development and Control of Weapons of Mass Destruction UGRD 5
Offers students an overview of the issues relating to atomic, biological, and chemical weapons, commonly referred to as weapons of mass destruction (WMD).
Au, Sp Qtrs. 2 2-hr cl.

556 Cooperation and Conflict in the Global Economy UGRD 5
The economic, social, and political bases for and responses to increasing global economic integration. 556H (honors) may be available.
Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq; Econ 200 and 201 or 400, or equiv. Not open to students with credit for Econ 556. Cross-listed in Economics.

557 Research in Globalization UGRD 5
Course explores aspects of globalization through the process of research. Hypothesis construction, data gathering and analysis and preparing a finished research product will be taught.
Prereq; 356 or permission of instructor, CompStds 357.

558 Global Climate Change: Economic Implications and Opportunities UGRD 5
This course examines the economic implications of climate change and climate change policies for society, including discussion of major state, federal and international legislation.
Su, Au, Wi, Sp Qtrs. 2 1.5-hr cl, 1 2-hr rec. Prereq; Sr standing. Not open to students with credit for AEDEcon 597.01. GEC contemporary world course. Cross-listed in Agricultural, Environmental, and Development Economics.

597.01 Problems and Policies in World Population, Food, and Environment UGRD 5
Problems related to world-wide population increases, food production, and associated environmental stress; policy options for lessening these problems, especially in low-income countries.
Su, Au, Wi, Sp Qtrs. 2 1.5-hr cl, 1 2-hr rec. Prereq; Sr standing. Not open to students with credit for AEDEcon 597.01. GEC contemporary world course. Cross-listed in Agricultural, Environmental, and Development Economics.

597.01H Problems and Policies in World Population, Food, and Environment: Honors UGRD 5
Problems related to world-wide population increases, food production, and associated environmental stress; policy options for lessening these problems, especially in low-income countries.
Su, Au, Wi, Sp Qtrs. 2 1.5-hr cl, 1 2-hr rec. Prereq; Sr standing; honors program or by permission of department or instructor. Not open to students with credit for AEDEcon 597.01. GEC contemporary world course. Cross-listed in Agricultural, Environmental, and Development Economics.

597.02 Antarctic Marine Ecology and Policy UGRD 5
Historical and contemporary evaluation of Antarctic resource management and its scientific basis.
Sp Qtr. 3 1.5-hr cl. Prereq; Sr standing. Not open to students with credit for EEOB or NatRes 597.02. GEC contemporary world course. Cross-listed in Evolution, Ecology, and Organismal Biology and Natural Resources.

601 Senior Seminar in Peace Studies UGRD 5
Advanced offering in the peace studies track, providing an opportunity to integrate multi-disciplinary course work and internship experience into a comprehensive overview of peace theory.
^ 2 2-hr cl. Prereq; 201, Geog 200, 25 hrs from list of courses approved for peace studies in international studies.

615 Children and War GRAD 5
Explores how children are affected by war, as forced participants, orphans and refugees. Long-term effects on society will be studied.
Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq; Soph standing or higher, or permission of instructor.
615 Children and War  UGRD 5
Explores how children are affected by war, as forced participants, orphans and refugees. Long-term effects on society will be studied.
Au, Wi, Sp Qtr. 2-2 hr cl. Prereq: Soph standing or higher, or permission of instructor.

616 Challenges to Childhood: An International Perspective  UGRD 5
Course will explore children's forced participation in war and its consequences and child poverty, labor, health, abuse and victimization in international perspective. Cross-listed in Sociology.

640 Globalization and Latin America: Multi-Disciplinary Approaches  UGRD 5
Explores current debates on globalization in Latin America and recent and interrelated transformations in the economies, politics, and cultures of the region.
Sp Qtr. 2-2 hr d. Prereq: Soph standing or higher. Not open to students with credit for Spanish 640.
Cross-listed in Spanish.

645 Contemporary Issues in the Middle East  UGRD 5
Intensive examination of contemporary issues in the Middle East by applying an interdisciplinary approach.
Sp Qtr. 2-2 hr d. Prereq: 245 or jr standing. Not open to students with credit for NELC 645.
Cross-listed in Near Eastern Languages and Cultures.

650 International Law  UGRD 5
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.
Au Qtr. 2-2 hr d. Prereq: Soph standing or higher, or permission of instructor.

670 Rebuilding Failed and Weak States  UGRD 5
Tackles the question of how to design policies and programs to rebuild failed and weak states into functioning, if not vibrant democracies.
Sp Qtr. 2-2 hr d. Prereq: Second yr standing or higher or permission of instructor. Not open to students with credit for PubPolM 670.
Cross-listed in Public Policy and Management.

689 Student Intern Program in International Studies  UGRD 4-16
Opportunity to gain knowledge of the policy process in an international or government agency.
Su, Au, Wi, Sp Qtr. Adj. Prereq: Jr or sr standing with at least a B average, and 25 cr hrs in a foreign language. Repeatable to a maximum of 15 cr hrs. Travel and subsistence costs to be borne by the student. This course is graded S/U.

693 Individual Studies  UGRD 1-10
Designed to give able students an opportunity to pursue a special course of study not otherwise available to them.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

694 Group Studies  UGRD 3-5
Designed to give groups of students an opportunity to pursue special studies not otherwise offered.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

697 Study at a Foreign Institution  UGRD 1-15
An opportunity for students to study at a foreign institution and receive credit for that work.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This course is Progress (P) graded. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

699 Undergraduate Research in International Studies  UGRD 1-15
Undergraduate research or creative activities in variable topics.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

717 Comparative Education  UGRD 3
Application of social science theories and methods to international issues of education.
Au Qtr. 1.25-2 hr cl. Prereq: Sr standing and permission of instructor. Not open to students with credit for EduPol 717.
Cross-listed in Educational Policy and Leadership.

783 Honors Research  UGRD 3-5
Informal conferences to allow full scope of the initiative of the student; a special topic is assigned to each student; the results are tested by papers and a special examination.
Su, Au, Wi, Sp Qtrs. Prereq: Sr standing and 40 cr hrs in the social sciences including 15 cr hrs in courses acceptable for a major in int stds, with a grade of A in at least half of these major courses, 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. Repeatable to a maximum of 15 cr hrs. Failure to receive a mark of S in this course is a disqualification for special honors. This course is graded S/U.

101 Elementary Italian I  UGRD 5
Introduction to Italian; development of skills in speaking, understanding, reading, and writing contemporary Italian in a cultural context.
Su, Au, Wi, Sp Qtrs. 5 cr cl. Not open 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. GEC for lang course.

102 Elementary Italian II  UGRD 5
Further development of skills in speaking, understanding, reading, and writing contemporary Italian in a cultural context.
Su, Au, Wi, Sp Qtrs. 5 cr cl. Prereq: 101. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course.

103 Intermediate Italian I  UGRD 5
Development of skills in speaking, understanding, reading, and writing contemporary Italian at a more complex level.
Su, Au, Wi, Sp Qtrs. 5 cr cl. Prereq: 102. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course.

104 Intermediate Italian II  UGRD 5
Readings of contemporary literary and nonliterary texts and continued development of speaking, listening, reading and writing skills.
Su, Au, Wi, Sp Qtrs. Prereq: 103. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course.

151 Italian Literature in Cultural Context from the Middle Ages to the Renaissance  UGRD 5
Introduction to social-cultural trends in Italy as reflected in literary texts and other materials from the beginnings to the Renaissance.
Taught in English. GEC arts and hums lit and social diversity - international issues (Western) course.

152 Italian Literature in Cultural Context from the Renaissance to the Present  UGRD 5
Introduction to social-cultural trends in Italy as reflected in literary texts and other materials from the Renaissance to the present.
Taught in English. GEC arts and hums lit and social diversity - international issues (Western) course.

202 Contemporary Italian Society  UGRD 5
Exploration of a variety of aspects of contemporary Italian society and culture while developing language skills. Special focus on reading skills.
Prereq: 104 or permission of instructor. Not open to native speakers of Italian.

206 Business Italian  UGRD 5
Four-skill study and practice of general business Italian; introduction to current Italian commerce, business practices, terminology, business-related communication skills.
Prereq: 104 or permission of instructor. Not open to native speakers of Italian.

221 Masterpieces of the Italian Cinema  UGRD 5
Survey of the Italian cinema from the beginnings to today with special emphasis on neo-realism.
Taught in English. GEC arts and hums VPA and social diversity - international issues (Western) course.

251 Dante in Translation  UGRD 5
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 110, 110.01, 110.02, or 110.03. Taught in English; GEC arts and hums lit course.

293 Individual Studies  UGRD 1-15
Individual Studies.
Prereq: Written permission of dept. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

401 Modern Italian Media  UGRD 5
Development of language skills using Italian media sources such as soap operas, internet resources, films, newspapers/magazines, etc.
Prereq: 202 or permission of instructor. Not open to native speakers of Italian. Repeatable to a maximum of 10 cr hrs.

402 The Sounds of Italian  UGRD 5
An introduction to Italian phonetics and phonology. Special focus on pronunciation.
Prereq: 202 or permission of instructor. Not open to native speakers of Italian.

420 Italian Culture Through the Ages  UGRD 5
An overview of Italian cultural history from the Medieval period to today; develops language skills through discussion of readings and film.
Prereq: 202 or permission of instructor. Not open to native speakers of Italian. Conducted in Italian.

421 Reading Italy: Italian Literature and Culture  UGRD 5
An exploration of the culture and history of different periods through selected works of Italian literature.
Prereq: 202. Not open to native speakers of Italian. Repeatable to a maximum of 10 cr hrs. Conducted in Italian.

423 The Italian Language Yesterday and Today  UGRD 5
Development of language skills while studying the evolution of Italian from its Latin origins. Special attention paid to the linguistic diversity of Italy today.
Prereq: 202 or permission of instructor. Not open to native speakers of Italian. Conducted in Italian.

425 The Regions of Italy  UGRD 5
Development of language skills while studying the histories and cultures of a variety of regions of Italy.
Prereq: 202 or permission of instructor. Not open to native speakers of Italian.
266 Italian

450 Italian Theater Workshop UGRD 5
The study, adaptation and presentation of a play in Italian.
Prereq: Any Italian 400-level class or permission of instructor. Not open to native speakers of Italian.

501 Italian for Speakers of Other Romance Languages UGRD 5
This intensive course covers the same material in Italian 101 and 102 and is designed for students with knowledge of a Romance language or Latin. Au Qtr. Prereq: French 103, Spanish 103, Portuguese 103, Latin 103 or permission of instructor. Not open to native speakers of Italian. GEC for lang course.

502 Italian for Speakers of Other Romance Languages 2 UGRD 5
This intensive course covers the same material in Italian 103 and 104 and is designed for students with knowledge of a Romance language or Latin.
Wi Qtr. Prereq: 501 or permission of instructor. Not open to native speakers of Italian. GEC for lang course.

601 Structures of the Italian Language UGRD 5
Introduction to the basic concepts of Italian linguistics; improve and refine your understanding of grammar; focus on several advanced-level structures.
Prereq: Two 400-level courses, or permission of instructor. Not open to native speakers of Italian.

602 Italian Translating UGRD 5
Translation from Italian to English and English to Italian of texts from diverse sources; analysis of prose styles and conventions in the two languages.
Prereq: 10 cr hrs of Italian beyond 104.

613 Italian Cinema UGRD 5
Examination of Italian cinema from Neorealism to the present. Discussion of contemporary society and culture with a brief introduction to film theory.
Prereq: 420, 421, 423 or permission of instructor. Conducted in Italian.

614 Survey of Italian Literature UGRD 5
Overview of selected works of Italian literature from the origins to today. Special focus on the cultural and historical contexts of the text studied.
Prereq: 420 or 421 or 423, or any course above 400-level or permission of instructor. Not open to native speakers of Italian. Conducted in Italian.

615 Italian Identities UGRD 5
Examination of the experiences and perspectives of Italians (including emigrants) through reading, film, and discussion. Topics include popular culture, Italian Americans, immigration in Italy, etc.
Prereq: 420, 421, 423, or any course above 400-level, or permission of instructor. Taught in Italian.

621 Dante UGRD 5
Introduction to the reading of the Divine Comedy; analysis of major episodes.
Prereq: 10 or hrs at the 400 level or above, or permission of instructor.

622 Petrarch and Boccaccio UGRD 5
Historical and aesthetic analysis of Petrarch's poetry; Petrarchism as a European phenomenon; literary background of Boccaccio's prose and verse; reading from the Decameron.
Prereq: 10 or hrs at the 400 level or above, or permission of instructor.

625 Italian Literature of the Renaissance UGRD 5
Readings in works of representative authors of the 15th and 16th centuries such as Leonardo, Michelangelo, Castiglione, Machiavelli, Ariosto, and Tasso.
Prereq: 10 or hrs at the 400 level or above, or permission of instructor.

626 Italian Literature of the 17th and 18th Centuries UGRD 5
Readings in selected works of authors such as Campanella, Marino, Galilei, Metastasio, Vico, Goldoni, Parini, and Alfieri.
** Prereq: 10 or hrs at the 400 level or above, or permission of instructor.

627 Modern Italian Fiction UGRD 5
Modern Italian fiction from 1800 to the present.
Prereq: 10 or hrs at the 400 level or above, or permission of instructor.

628 Modern Italian Poetry UGRD 5
Italian poetry from 1800 to the present.
* Prereq: 10 or hrs at the 400 level or above, or permission of instructor.

692 The Romance Languages UGRD 5
Examines the socio-historical factors and the linguistic processes that contributed to the formation of the Romance languages and to their divergences.
3 1.5-hr cl. Prereq: One year of a Romance language or permission of instructor. Not open to students with credit for French 692 or RomLang 692. Cross-listed in French and Romance Languages. Offered bi-annually. Taught in English. This course counts toward: the Italian major (as one of the two courses taught in English), the French major (as an elective for all the major tracks), the Linguistics major or minor, the Spanish major (as an elective and the one course taught in English permitted to count for the major).

693 Individual Studies UGRD 1-15
Individual Studies.
Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

694 Group Studies UGRD 1-15
Group Studies.
Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

697 Study at a Foreign Institution UGRD 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 45 cr hrs. This course is Progress ("P") graded. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

699 Undergraduate Research UGRD 1-15
Undergraduate research or creative activities in variable topics.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

711 History of the Italian Language: Introduction UGRD 5
Basic concepts of historical linguistics; the major factors of change in the history of the Italian language from Roman times to the present.
* Prereq: MA candidates in Italian, qualified undergrads with permission of instructor. Not open to students with credit for 811.

730 Seminar in Italian Linguistics UGRD 5
Detailed exploration of selected topics in Italian linguistics with extensive analysis of Italian language data relevant to the topic.
Prereq: MA candidates in Italian, qualified undergrads with permission of instructor. Repeatable to a maximum of 15 cr hrs. including cr hrs earned in 830.

732 Seminar in Italian Literature UGRD 5
Seminar in Italian Literature.
Prereq: MA candidates in Italian, qualified undergrads with permission of instructor. Repeatable to a maximum of 15 cr hrs. including cr hrs earned in 832.

734 Seminar in Italian Film UGRD 5
Detailed exploration and analysis of selected topics in Italian cinema. Topic varies.
Wi Qtr. Prereq: MA candidates in Italian, qualified undergrads with permission of instructor. Repeatable to a maximum of 15 cr hrs.

738H Honors Research UGRD 3-5
A program of individual study for undergraduate honors students; includes individual conferences and reports; requires presentation and oral defense of an honors thesis. Arr. Prereq: 4th yr standing with at least a 3.50 cumulative pt-hr ratio in Italian; written permission of instructor under whose supervision the work is to be completed, and of the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

792 Interdepartmental Studies in the Humanities UGRD 3-5
Two or more departments present colloquia on subjects of mutual interest; topics to be announced.
* Prereq: Grad standing or permission of instructor(s). Repeatable with permission of dept.

801 Teaching Italian at the College Level GRAD 5
Methods and techniques for teaching Italian language at the college level.
Au Qtr. Two wks intensive workshop previous to the beginning of qtr followed by a 2-hr wkly cl.
Prereq: Teaching associate in the Dept of French and Italian or permission of instructor. Not open to students with credit for EduTL 801.02. For students enrolled in this course, the minimum number of cr hrs required for graduation is increased by 5 hrs.

885 Introduction to Methods in the History and Criticism of Literature UGRD 5
Selected readings in basic literary history, criticism, and theory, with practice in the use of standard bibliographical aids to scholarship.

893 Individual Studies GRAD 1-5
Individual Studies.
Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

894 Group Studies GRAD 1-15
Investigation of minor problems in the various fields of Italian literature and language.
Prereq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.

899 Interdepartmental Seminar GRAD 3-5
Two or more departments present seminars on subjects of mutual interest; topics to be announced.
Prereq: Permission of instructor(s). Repeatable with permission of dept.

999 Research in Italian Language or Literature GRAD 1-18
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.
101.01 Level One Japanese I UGRD 5
Elements of standard colloquial Japanese grammar, with intensive oral and written exercises; introduction to the Japanese writing system (hiragana, katakana, and kanji).
Au Qtr. 5 cl. Not open to students with credit for 101, 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. GEC for lang course. FL Admin Cond courses. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

101.02 Level One Japanese I: Summer Intensive Track UGRD 5
Elements of standard colloquial Japanese grammar, with intensive oral and written exercises; introduction to the Japanese writing system (hiragana, katakana, and kanji); Summer Intensive Track.
Su Qtr. 20 cl 3 wks. Prereq: Application and admission to SPEAC program. Not open to students with credit for 101, 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. GEC for lang courses. FL Admin Cond course. Students must register for and complete 5 cr hrs during the first 3 weeks of the quarter. This course is available for EM credit.

101.51 Level One Japanese I: Individualized Track UGRD 1-5
Elements of standard colloquial Japanese grammar, with intensive oral and written exercises; introduction to the Japanese writing system (hiragana, katakana, and kanji); Individualized Track.
Su, Au, Wi, Sp Qtrs. Not open to students with credit for 101, 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. GEC for lang courses. FL Admin Cond course. Students must register for and complete 5 cr hrs during the first 3 weeks of the quarter. This course is available for EM credit.

104.01 Level Two Japanese I UGRD 5
Continuation of 103, with supplementary reading of selected graded texts; Summer Intensive Track.
Au Qtr. 5 cl. Prereq: 103.01 or 103.02 or 5 cr hrs of 103.51 or equiv with written permission of instructor. Prereq: Application and admission to SPEAC program. Not open to students with credit for 104; or to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. Students must register and complete 5 cr hrs during the first 3 weeks of the quarter. This course is available for EM credit.

104.02 Level Two Japanese I: Summer Intensive Track UGRD 5
Continuation of 103, with supplementary reading of selected graded texts; Summer Intensive Track.
Su Qtr. 20 cl 3 wks. Prereq: 103.01 or 103.02 or 5 cr hrs of 103.51 or equiv with written permission of instructor. Prereq: Application and admission to SPEAC program. Not open to students with credit for 104; or to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. Students must register and complete 5 cr hrs during the first 3 weeks of the quarter. This course is available for EM credit.

104.51 Level Two Japanese I: Individualized Track UGRD 1-5
Continuation of 103, with supplementary reading of selected graded texts; Individualized Track.
Su, Au, Wi, Sp Qtrs. Prereq: 103.01 or 103.02 or 5 cr hrs of 103.51 or equiv with written permission of instructor. Not open to students with credit for 104; or to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. Students must register and complete 5 cr hrs during the first 3 weeks of the quarter. This course is available for EM credit.

105.01 Level Two Japanese II UGRD 5
Continuation of 104 with a shift in emphasis from the spoken to the written language, reading of selected graded texts, writing, and composition; Summer Intensive Track.
Wi Qtr. 5 cl. Prereq: 104 or 104.01 or 104.02 or 5 cr hrs of 104.51 or equiv with written permission of instructor. This course is available for EM credit. Students must register for and complete 5 cr hrs during the quarter.

105.02 Level Two Japanese II: Summer Intensive Track UGRD 5
Continuation of 104 with a shift in emphasis from the spoken to the written language, reading of selected graded texts, writing, and composition: Summer Intensive Track.
Su Qtr. 20 cl 3 wks. Prereq: 104 or 104.01 or 104.02 or 5 cr hrs of 104.51 or equiv with written permission of instructor. Prereq: Application and admission to SPEAC program. This course is available for EM credit. Students must register for the course at the beginning of the quarter and complete 5 cr hrs during the second 3 weeks of the quarter.

105.03 Level Two Japanese III UGRD 5
Continuation of 105.
Su Qtr. 5 cl. Prereq: 105 or 105.01 or 105.02 or 105.03 or 105.51 or equiv with written permission of instructor; concurrent: 211. Not open to students with credit for 106,106.01,106.02,106.51,111,206.01,206.02. Students must register for and complete 5 cr hrs during the quarter.

106.01 Level Two Japanese III UGRD 5
First course in the sequence of academic year intensive Japanese courses; organized around a set of videotaped core conversations.
Au Qtr. 5 cl. Prereq: 106 or equiv. or permission of instructor; concurrent: 211. Not open to students with credit for 106,106.01,106.02,106.51,111,206.01,206.02. Students must register for 211 and 211 concurrently.

106.02 Level Two Japanese III: Intensive Track UGRD 5
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 Qtr. 5 cl. Prereq: 106 or 106.01 or 106.02 or 106.51 or equiv or permission of instructor; concurrent: 211. Not open to students with credit for 106,106.01,106.02,106.51,111,206.01,206.02. Students must register for 210 and 211 concurrently.

211 Intensive Level Two Japanese II: Spoken UGRD 5
A survey of literature, art, religion, philosophy, and social institutions of the Japanese people from the earliest to the most recent times.
Su, Au, Wi, Sp Qtrs. 5 cl. Taught in English. GEC arts and hums cultures and ideas and social diversity - international issues (Global) course.

251 Japanese Literature in Translation UGRD 5
Representative masterpieces from Japanese literature: fiction, drama, poetry, prose. Au, Wi, Sp Qtrs. 5 cl. Taught in English. GEC arts and hums lit and social diversity - international issues (Global) course.

252 Modern Japanese Literature in Translation UGRD 5
Modern Japanese literature from late 19th century Western influences to contemporary writers; selected readings in English translation with emphasis on Tanizaki, Kawabata, and Mishima. Au, Wi, Sp Qtrs. 5 cl. GEC arts and hums lit and social diversity - international issues (Global) course.

294 Group Studies UGRD 1-5
Group Studies.
Su, Au, W, Sp Qtrs. Repeatable to a maximum of 15 cr hrs.
310 Intensive Level Two-Three Japanese I: Spoken UGRD 5
Third course in the sequence of academic-year intermediate intensive Japanese courses; organized around a set of videotaped core conversations.
Wi, Qtr. 5 cl. Prereq: 104 or 104.01 or 104.02 or 104.51 and permission of instructor, or 210, concr 311. Not open to students with credit for 205. Students must register for 310 and 311 concurrently.

311 Intensive Level Two-Three Japanese II: Written UGRD 5
Fourth course in the sequence of academic-year intensive Japanese courses; organized around reading Japanese as a set of genre-specific samples of Japanese as it is written today, integrated with 310 in structure and vocabulary.
Wi Qtr. 5 cl. Prereq: 211 or equiv, or permission of instructor; concr 310. Not open to students with credit for 205 or 205.01 or 205.02. Students must register for 310 and 311 concurrently.

501 Japanese Literature in Critical Perspective UGRD 5
Au, Wi, Sp Qtr. 2 2.5-hr cl. Prereq: 251 or 252 or equiv, or permission of instructor. GEC third writing course.

507 Level Three Japanese I UGRD 5
Expansion of Strategies for communication through oral an textual media.
Au Qtr. 5 cl. Prereq: 206 or equiv with written permission of instructor.

508 Level Three Japanese II UGRD 5
Continuation of 507; supplementary readings in short stories and standard reference works.
Wi Qtr. 5 cl. Prereq: 507 or equiv with written permission of instructor.

509 Level Three Japanese III UGRD 5
Continuation of 508.
Sp Qtr. 5 cl. Prereq: 508 or equiv with written permission of instructor.

510 Intensive Level Three Japanese I: Spoken UGRD 5
Fifth course in the sequence of academic-year intermediate intensive spoken Japanese; uses audio, video, and textual materials.
Sp Qtr. 5 cl. Prereq: 310 or equiv, or permission of instructor; concr 511. Students must register for 510 and 511 concurrently.

511 Intensive Level Three Japanese II: Written UGRD 5
Sixth course in the sequence of academic-year intermediate intensive written Japanese; moves from pedagogically planned texts to genres written today for native consumption.
Sp Qtr. 5 cl. Prereq: 311 or equiv, or permission of instructor; concr 510. Students must register for 510 and 511 concurrently.

515 Japanese Language: Structure, Culture, and Communication I UGRD 5
Critical and comprehensive survey of structural, cultural, and communicative aspects of the Japanese language.
Wi Qtr. 2 2-hr cl. Prereq: 101 or permission of instructor. Taught in English. Counts as a choice on major/minor.

516 Japanese Language: Structure, Culture, and Communication II UGRD 5
Critical and comprehensive survey of structural, cultural, and communicative aspects of the Japanese language.
Sp Qtr. 2 2-hr cl. Prereq: 104, 515, or permission of instructor. Taught in English. Counts as a choice on major/minor.

600 Performance Traditions of Japan UGRD 5
Introduction to performance traditions of Japan; explores selected performance genres in their cultural contexts and examines patterns of emergence in modern times.
Au, Wi, Sp Qtr. 2 2-hr cl. Prereq: 231 or 251 or 252, or Chinese 231 or 251 or 252, or EALL 131, or Korean 231 or 251; or permission of instructor.

601 Classical Japanese I UGRD 5
Develops familiarity with grammatical categories, functions, and tools for reading early Japanese, in close reading of selected primary texts and linguistic analysis.
Au, Wi, Sp Qtr. 5 cl. Prereq: 509 or equiv or permission of instructor.

602 Classical Japanese Continued, Linguistic Focus UGRD 5
Builds on 601, through close reading of selected primary texts, with attention to linguistic issues in the history of Japanese. May follow 603.
Au, Wi, Sp Qtr. 5 cl. Prereq: 601 or equiv or permission of instructor.

603 Classical Japanese Continued, Literary Focus UGRD 5
Builds on 601 through close reading of selected primary texts, with focus on conventions of literary genres and related critical issues. 602 not a prerequisite.
Au, Wi, Sp Qtr. 5 cl. Prereq: 601 or equiv or permission of instructor.

610.01 Level Four Japanese I UGRD 5
Selected readings in modern literary, scholarly, and journalistic Japanese; essentially a language course intended to improve fluency.
Au Qtr. 5 cl. Prereq: 509 or 510 or 511 or permission of instructor. Not open to students with credit for 661.

610.02 Level Four Japanese II: Summer Intensive Track UGRD 5
Selected readings in modern literary, scholarly, and journalistic Japanese; essentially a language course intended to improve fluency. Summer Intensive Track.
Au Qtr. 5 cl. Prereq: 509 or 510 or 511 or permission of instructor. Not open to students with credit for 661.
Su Qtr. 20 cl 3 wks. Prereq: 610 or 610.01 or 610.02 or permission of instructor. Prereq: Application and admission to SPEAC program. Not open to students with credit for 662. Students must register for and complete 5 cr hrs during the first 3 weeks of the quarter.

611.01 Level Four Japanese II UGRD 5
A continuation of 610.
Wi Qtr. 5 cl. Prereq: 610 or 610.01 or 610.02 or permission of instructor. Not open to students with credit for 662.

611.02 Level Four Japanese II: Summer Intensive Track UGRD 5
A continuation of 610: Summer Intensive Track.
Su Qtr. 20 cl 3 wks. Prereq: 610 or 610.01 or 610.02 or permission of instructor. Prereq: Application and admission to SPEAC program. Not open to students with credit for 662. Students must register for the course at the beginning of the quarter and complete 5 cr hrs during the second 3 weeks of the quarter.

612.01 Classroom Track UGRD 5
Continuation of 611.
Classroom Track.
Sp Qtr. 5 cl. Prereq: 611 or 611.01 or 611.02 or permission of instructor. Not open to students with credit for 663. Students must register for and complete 5 cr hrs during the quarter.

612.02 Summer Intensive Track UGRD 5
Continuation of 611.
Summer Intensive Track.
Su Qtr. 20 cl 3 wks. Prereq: 611 or 611.01 or 611.02 or permission of instructor. Prereq: Application and admission to SPEAC program. Not open to students with credit for 663. Students must register for the course at the beginning of the quarter and complete 5 cr hrs during the third 3 weeks of the quarter.

641 The Japanese Religious Tradition UGRD 5
A survey of the Japanese tradition, including Shinto, Buddhism, Taoism, Neo-Confucianism, and folk religion from the 6th century B.C.E. to the present.
Au, Wi, Sp Qtr. 2 2-hr cl. Prereq: Permission of instructor. Not open to students with credit for CompStd or RelStds 641. Cross-listed in Comparative Studies.

654 Japanese Literature: Classical Period UGRD 5
Survey of Japanese literature from the eighth to the mid-fourteenth century: myths, court poetry tales, fiction, diaries, and miscellanies.
* Au Qtr. 5 cl. Prereq: 231 or 251 or 252, or another Japanese literature course at the 200 level or above.

655 Japanese Literature: Medieval and Edo Periods UGRD 5
Survey of Japanese literature from the mid-fourteenth to the mid-nineteenth century: popular tales, poetry, drama, and the fiction of the merchant class.
* Wi Qtr. 5 cl. Prereq: 231 or 251 or 252, or another Japanese literature course at the 200 level or above.

656 Japanese Literature: Modern Period UGRD 5
Survey of Japanese poetry, fiction, and drama from the 19th century to the present.
* Sp Qtr. 5 cl. Prereq: 231 or 251 or 252, or another Japanese literature course at the 200 level or above.

665 Studies in Japanese-American Literature UGRD 5
Critical study of modern Japanese-American literature in historical and cultural context; topics vary: literature of the internment, gender and identity politics, genre studies, women's writing.
Au, Wi, Sp Qtr. 2 2-hr cl. Prereq: 231 or 251 or 252, or another Japanese literature course at the 200 level or above.

680 Introduction to Japanese Linguistics UGRD 5
An introduction to the phonology, syntax, and lexicon of the Japanese language.
Au, Wi, Sp Qtrs. Prereq: 206 or Lingust 601; or permission of instructor.

681 History of the Japanese Language UGRD 5
A survey of the development of the Japanese language from early times to the present.
Au, Wi, Sp Qtrs. Prereq: 206 or Lingust 601; or permission of instructor.

693 Individual Studies UGRD 1-5
Requires the use of Japanese sources and the completion of a paper reflecting the student's research.
Su, Au, Wi, Sp Qtrs. Prereq: 509 or 603, and written permission of instructor. Repeatable to a maximum of 15 cr hrs. Not a substitute for regular language courses. This course is graded S/U.

694 Group Studies UGRD 1-5
Investigation of minor problems in Japanese language and literature.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. Not a substitute for regular language courses.

698.01 Study Tour: Domestic UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only.
698.02 Study Tour: Foreign UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Pre_req: Permission of instructor. Repeatable for different titled study tours only.

710.01 Level Five Japanese I GRAD 5
Designed to increase rhetorical sensitivity and skill in a variety of genres of present-day Japanese.
Au Qtr. 3 cl, 1-3 hr lab. Pre_req: 612, 612.01, 612.02 or equv and permission of instructor. Not open to students with credit for 720.

710.51 Level Five Japanese I: Individualized Track GRAD 1-5
Designed to increase rhetorical sensitivity and skill in a variety of genres of present-day Japanese: Individualized Track.
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 5 cr hrs. Pre_req: 612, 612.01, 612.02 or equv and permission of instructor. Not open to students with credit for 720. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr to the next with a demonstrated proficiency of 80% required for advancement to the next level. The lowest passing grade is B-. Distance-learning course.

711.01 Level Five Japanese II GRAD 5
Continuation of 710.
Wi Qtr. 5 cl or 3 cl, 2 hrs tutorial. Pre_req: 710.01 or 720, or 5 cr hrs of 710.51. Not open to students with credit for 721.

711.51 Level Five Japanese II: Individualized Track GRAD 1-5
Continuation of 710: Individualized Track.
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 5 cr hrs. Pre_req: 710.01 or 720, or 5 cr hrs of 710.51. Not open to students with credit for 721. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr to the next with a demonstrated proficiency of 80% required for advancement to the next level. The lowest passing grade is B-. Distance-learning course.

712.01 Level Five Japanese III GRAD 5
Continuation of 711.
Sp Qtr. 3 cl, 1.3 hr lab. Pre_req: 711.01 or 721, or 5 cr hrs of 711.51. Not open to students with credit for 722.

712.51 Level Five Japanese III: Individualized Track GRAD 1-5
Continuation of 711: Individualized Track.
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 5 cr hrs. Pre_req: 711.01 or 721, or 5 cr hrs of 711.51. Not open to students with credit for 722. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr to the next with a demonstrated proficiency of 80% required for advancement to the next level. The lowest passing grade is B-. Distance-learning course.

751 Studies in Japanese Poetry UGRD 5
Critical studies in Japanese poetry; survey of poetic forms, techniques, and aesthetics; concentration on a specific collection, poet, or cotnete; topic varies.
* Au Qtr. 5 cl, 601, 654, 655, and 656; or permission of instructor. Repeatable to a maximum of 15 cr hrs.

752 Studies in Japanese Prose Literature UGRD 5
History and critical study of myths, early tales, diaries, chronicles, setsuwa, miscellanies, medieval tales, Edo fiction, or the modern novel, topic varies.
* Wi Qtr. 5 cl, Pre_req: 601, 654, 655, and 656; or permission of instructor. Repeatable to a maximum of 15 cr hrs.

753 Studies in Japanese Drama UGRD 5
History and texts of Japan's dramatic literature; no, kyogen, kowaka-mai, bunraku, kabuki, medieval tales, Edo fiction, or the modern novel, topic varies.
* Sp Qtr. 5 cl, Pre_req: 601, 654, 655, and 656; or permission of instructor. Repeatable to a maximum of 15 cr hrs.

782 Japanese Phonology UGRD 3
An analysis of the phonological structure of present-day Japanese with a critical examination of traditional and contemporary works on Japanese phonology.
* Au, Wi, Sp Qtr. 3 cl, 601, 680, 681; or permission of instructor.

783H Honors Research UGRD 3-5
A program of reading arranged for each student, with individual conferences, reports, and honor thesis.
Au, Wi, Sp Qtrs. Pre_req: 4th yr standing; a record of A in at least half of the Japanese courses taken and an average of B in all courses; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Open only to candidates for BA in Japanese. Repeatable to a maximum of 15 hr. This course is graded S/U.

784 Japanese Syntax UGRD 5
Discussion of the grammatical structures of Japanese; presentation of syntactic rules.
Au, Wi, Sp Qtrs. 5 cl, Pre_req: 680 or permission of instructor.

786 Japanese Pragmatics UGRD 5
Discussion of the pragmatic aspects of the Japanese language.
Au, Wi, Sp Qtrs. 2 2-hr cl, Pre_req: 680 or Linguist 601 or permission of instructor.

787 Japanese Language Processing UGRD 5
Discussion of various studies on Japanese first and second language processing.
Au, Wi, Sp Qtrs. 2 2-hr cl, Pre_req: 680 or permission of instructor.
### Korean

#### 101.01 Level One Korean I UGRD 5
- Standard modern Korean: development of listening, speaking skills; basic grammar; reading and writing of the Korean script (hangul)
- Au Qtr. 5 cl. Not open 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. This course is available for EM credit. FL Admis Cond course. GEC for lang course.

#### 101.02 Level One Korean I: Summer Intensive Track UGRD 5
- Standard modern Korean: development of listening, speaking skills; basic grammar; reading and writing of the Korean script (hangul): Summer Intensive Track.
- Su Qtr. 20 cl for 3 weeks. Not open 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. This course is available for EM credit. FL Admis Cond course. GEC for lang course.

#### 101.51 Level One Korean I: Individualized Track UGRD 1-5
- Standard modern Korean: development of listening, speaking skills; basic grammar; reading and writing of the Korean script (hangul): Individualized Track.
- Su, Au, Wi, Sp Qtrs. Variable. Not open 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. This course is available for EM credit. FL Admis Cond course. GEC for lang course.

#### 102.01 Level One Korean II UGRD 5
- Continuation of 101.
- Wi Qtr. 5 cl. Prereq: 101 or 101.01 or 101.02 or 5 hrs of 101.51 or equiv. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. FL Admis Cond course. GEC for lang course.

#### 102.02 Level One Korean II: Summer Intensive Track UGRD 5
- Continuation of 101: Summer Intensive Track.
- Su Qtr. 20 cl for 3 weeks. Prereq: 101 or 101.01 or 101.02 or 5 hrs of 101.51 or equiv. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. FL Admis Cond course. GEC for lang course.

#### 102.51 Level One Korean II: Individualized Track UGRD 1-5
- Continuation of 101: Individualized Track.
- Su, Au, Wi, Sp Qtrs. Variable. Prereq: 101 or 101.01 or 101.02 or 5 hrs of 101.51 or equiv. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. FL Admis Cond course. GEC for lang course.

#### 103.01 Level One Korean III UGRD 5
- Continuation of 102.
- Sp Qtr. 5 cl. Prereq: 102 or 102.01 or 102.02 or 5 hrs of 102.51 or equiv. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course.

#### 103.02 Level One Korean III: Summer Intensive Track UGRD 5
- Continuation of 102: Summer Intensive Track.
- Su Qtr. 20 cl for 3 weeks. Prereq: 102 or 102.01 or 102.02 or 5 hrs of 102.51 or equiv. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course.

#### 103.51 Level One Korean III: Individualized Track UGRD 1-5
- Continuation of 102: Individualized Track.
- Su, Au, Wi, Sp Qtrs. Variable. Prereq: 102 or 102.01 or 102.02 or 5 hrs of 102.51 or equiv. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. Repetatable to a maximum of 5 cr hrs. GEC for lang course.

#### 104.01 Level Two Korean I UGRD 5
- Continuation of 103, with supplementary reading of selected graded texts.
- Au Qtr. 5 cl. Prereq: 103 or 103.01 or 103.02 or 5 hrs of 103.51 or equiv. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course.

#### 104.51 Level Two Korean I: Individualized Track UGRD 1-5
- Continuation of 103, with supplementary reading of selected graded texts: Individualized Track.
- Su, Au, Wi, Sp Qtrs. Variable. Prereq: 103 or 103.01 or 103.02 or 5 hrs of 103.51 or equiv. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. Repetatable up to a maximum of 5 cr hrs. GEC for lang course.
610 Level Four Korean I UGRD 5
An advanced Korean language course intended to develop the integrated language skills at an advanced level as preparation for higher-level lectures and discussions. Au Qtr. 5 cl. Prereq: 509 or equiv., or permission of instructor.

611 Level Four Korean II UGRD 5
Continuation of 610. Wi Qtr. 5 cl. Prereq: 610 or equiv., or permission of instructor.

612 Level Four Korean III UGRD 5
Continuation of 611. Sp Qtr. 5 cl. Prereq: 611 or equiv., or permission of instructor.

645 Studies in Korean-American Literature UGRD 5
Critical study of Korean-American literature and literary genres of the twentieth century, with particular attention to historical, social and cultural contexts. Au Qtr. 2-2 hr cl. Prereq: 10 cr hrs in any literature or grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs including cr hrs earned in CompStd 645 or English 681.01. Cross-listed in Comparative Studies and with English 681.01.

653 Advanced Readings in Korean UGRD 5
Advanced readings and cross-cultural analysis of authentic essays, mini-fictions, journals, and editorials in Korean. Prereq: Completion of third year Korean or permission of instructor. Taught in Korean.

654 Korean Literary Traditions UGRD 5
Analysis of the development of Korean literary traditions and their significance in the cultural and intellectual evolution of Korean society and its people. Sp Qtr. 2-2 hr cl. Prereq: 231 or 251 or equiv. No knowledge of the Korean language is required. All reading materials are in English.

655 Interdisciplinary Courses in Korean Art, Music, Film, and Theatre UGRD 5
Interdisciplinary course in the history and criticism of Korean art, music, theatre, martial art, healing art and film with reference to their implications to humanity. Repeatable to a maximum of 10 cr hrs. Taught in English. Credit counts toward Korean undergraduate major and minor, and adds to the available courses for East Asian Master's degree program.

656 Interdisciplinary Topics in Korean Politics and Society UGRD 5
Interdisciplinary Korean studies course in the areas of social science bridging Korean history, politics, gender, religion, philosophy, education, intercultural communication and international relations among others. Repeatable to a maximum of 10 cr hrs. Taught in English. Credit counts toward Korean major and minor, and adds to the available courses in East Asian master's degree program.

680 Introduction to Basic Design in Architecture UGRD 5
Introduction to basic design: problem solving techniques; language of design; exploration of space and object through graphic exercises, drawings and models. Wi Qtr. 2-2 hr cl. Prereq: 10 cr hrs in any architecture or grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

700 Landscape Architecture Survey UGRD 1
Introduction to the University, the Knowlton School of Architecture and the professions of architecture, city planning and regional planning and landscape architecture. Au, Wi, Sp Qtr. 2 cl. Cross-listed in Architecture.

151 Introduction to Basic Design in Architecture and Landscape Architecture UGRD 5
Introduction to basic design: problem solving techniques; language of design; exploration of space and object through graphic exercises, drawings and models. 8 lab hrs. Not open to students with credit for Arch 202. Cross-listed in Architecture as 202. Required for students intending to major in LArch.

200 Outlines of Architecture and Landscape Architecture UGRD 3
Introduction to the disciplines of architecture and landscape architecture with an emphasis upon the physical artifact and its formal and cultural context. Su, Au, Wi, Sp Qtr. 3 cl. Not open to students with credit for Arch 200. Cross-listed as Arch 200. VPA Admis Cond course.

201 Historical Overview of Human Design on the Land UGRD 5
Efforts of individuals and societies to control and shape the environment from earliest times to present. Au Qtr. 5 cl. SS Admis Cond course. BER/LAR course. GEC arts and hums VPA course.

204 Design of Gardens and Small Properties I UGRD 5
Design of small-scale residential projects; master planning, use of plants and architectural materials, graphics. Wi Qtr. 3 cl, 3 lab hrs. Not open to students with credit for HCS 204. Cross-listed in Horticulture and Crop Science. VPA Admis Cond course.

205 Design of Gardens and Small Properties II UGRD 5
Continuation of 204. 2 cl, 4 lab hrs. Prereq: 204.

251 Landscape Architectural Design I UGRD 5
Introduction to general ecological systems and their relationship to landscape. Au Qtr. 3 cl, 6 lab hrs. Prereq: EarthSci 121, 2,15 or 45 cr hrs and successful completion of portfolio review or permission of dept.

253 Landscape Architectural Design III UGRD 5
Development of landscape design skills in abstract and real forms; color and spatial organization. Wi Qtr. 3 cl, 6 lab hrs. Prereq: 252 and 271.

254 Landscape Architectural Design IV UGRD 5
Design based upon knowledge of human behavioral psychology. Sp Qtr. 2 cl, 8 lab hrs. Prereq: 253 and 272.

271 Landscape Architectural Design Communication I UGRD 3
Introduction to techniques of landscape architectural diagrams, plans, and sections; use of pencil, pen, and marker to express design ideas. Au Qtr. 3 cl, 3 lab hrs. Prereq: LArch major or permission of the department. VPA Admis Cond course.

272 Landscape Architectural Design Communication II UGRD 3
Continuation of 271; introduction of isometrics; use of models as design tools; introduction of color rendering. Wi Qtr. 3 cl, 3 lab hrs. Prereq: 271.

294 Group Studies in Landscape Architecture UGRD 1-15
Designed for students who desire to pursue, in a group, special studies in the discipline. Prereq: Permission of instructor or department. Repeatable to a maximum of 15 cr hrs.

301 Landscape Construction: Earthwork as Design UGRD 5
Study of techniques essential to the horizontal and vertical development of site designs; emphasis on grading as an artform. Au Qtr. 3 cl, 6 lab hrs. Prereq: 253 and 271; Math 150. Not open to students with credit for 221.

302 Landscape Construction: Layout Controls UGRD 3
Study of techniques essential to horizontal and vertical development of site designs; emphasis on layout, and circulation. Wi Qtr. 2 cl, 2 lab hrs. Prereq: 221, or 321 and Math 150.

323 Landscape Construction: Water in the Landscape UGRD 5
Integration of site systems; application of landscape construction and landscape materials detailing. Study of surface and subsurface drainage, stromwater management; pools, fountains, and water features in the landscape. Sp Qtr. 3 cl, 6 lab hrs. Prereq: 221, or 321.

355 Landscape Architectural Design V UGRD 5
Theory, principles, and vocabulary of site planning and design reflecting site analysis, social-cultural setting, programmatic requirement, conceptualization, and development-growth issues. Au Qtr. 2 cl, 9 lab hrs. Prereq: 272, 252, 253, 254.

356 Landscape Architectural Design VI UGRD 5
Macro-scale landscape planning studies involving urbanization and multi-use management of landscape resources. Sp Qtr. 2 cl, 10 lab hrs. Prereq: 323 and 355.

361 Support Computer Technologies UGRD 5
Support computer technologies critical in landscape architecture planning, design, analysis, and presentations. 3 cl, 4 lab hrs. Prereq: EnGraph 294L or grad standing. Not open to students with credit for 373

367 The Making and Meaning of the American Landscape UGRD 5
Interpretation of the contemporary American landscape as the product of many interacting physical and sociocultural forces. Au, Wi, Sp Qtr. 3 cl, 2 hr rec. Prereq: English 110 or 111 or equiv. Not open to students with credit for 202 or NatRes 307. Cross-listed in Natural Resources. VPA Admis Cond course. SEC second writing and social diversity in the US and arts and hums cultures and ideas (for BS majors only) course.
272 Landscape Architecture

424 Landscape Construction: Materials UGRD 3
Properties and production of man-made landscape building materials; material performance in exterior application; construction detailing with emphasis on wood and masonry assemblies.
Au Qtr. 3 cl, 3 lab hrs. Prereq: Math 150.

457 Urban Landscape Design UGRD 5
Project scale site planning and design within the urban fabric; special study of artistic and ecological principles to address contemporary environmental, economic, and cultural issues in the urban setting.
Au Qtr. 3 cl, 6 lab hrs. Prereq: 323 and 355.

597 Stewardship Issues in Environmental Design and Development UGRD 5
Exploration of the ecological, economic, ethical, political, and social-cultural ramifications of contemporary environmental issues; emphasis on ways the individual or group can respond effectively.
Sp Qtr. 5 cl. Prereq: Sr standing. LARC course. GEC contemporary world course.

603 Landscape Architecture Since 1850: Questions of Nature and Culture UGRD 5
Examination of the history of landscape architecture since Frederick Law Olmsted with emphasis on environmental planning and activism, town planning and the design of infrastructure, park design and garden design.
Sp Qtr. 4 cl, 2 hrs arr. Prereq: Grad standing in LArch. Not open to students with credit for 203 or 742.

620 Landscape Design Implementation I GRAD 5
Study of design implementation procedures including: grading and drainage, earthwork calculations, road alignment, staking and layout, surveying appliances.
Au Qtr. 3 cl, 6 lab hrs. Prereq: 670.

622 Landscape Design Implementation II GRAD 5
Study of stormwater management in the treatment of landscape, uses of water in ponds, pools, and fountains; irrigation systems.
Wi Qtr. 3 cl, 6 lab hrs. Prereq: 620.

624 Design Implementation: Construction Materials UGRD 3
Introduction to landscape architecture construction materials and their use in building structures.
Au Qtr. 2 cl, 4 lab hrs. Not open to students with credit for 424.

625 Design Implementation: Landscape Structures UGRD 3
Structural design of site elements typical in landscape architectural design.
Wi Qtr. 2-2 hr cl. Prereq: Physics 103 and Math 150. Not open to students with credit for 425.

626 Landscape Construction: Layout Controls GRAD 3
Basic surveying, horizontal, and vertical curve alignment for roads, and staking and layout of design elements.
Au Qtr. 2 cl, 2 lab hrs. Prereq: 1st yr grad standing or permission of instructor. Not open to students with credit for 322.

627 Landscape Architectural Design/Build UGRD 5
Introduction to the design process and construction techniques associated with the interconnected steps of designing and building small scale projects on campus.
Su Qtr. 3 cl, 2-hr cl. Prereq: 323 or 622 and permission of instructor.

633 Planting Design UGRD 5
Form and function of plant materials in design applications.
Wi Qtr. 3 cl, 3 lab hrs. Prereq: Hort 234 or HCS 234. Not open to students with credit for 333.

640 Landscape Architectural Design GRAD 5
Exploration and application of principles of design, components and characteristics of space, landscape architectural design process, and small scale design.
Au Qtr. 2 cl, 12 lab hrs. Prereq: Grad standing in LArch or permission of grad studies committee.

642 Urban Landscape Design GRAD 5
Landscape design in the urban setting; emphasis on design process, spatial structure, and design detailing of urban spaces.
Wi Qtr. 2 cl, 12 lab hrs. Prereq: 670 or permission of grad studies committee.

644 Site Planning and Design GRAD 5
Investigation of site planning and design at the project scale in the urban fringe or rural setting.
Sp Qtr. 2 cl, 12 lab hrs, arr field trips. Prereq: 642 and 672. Travel and subsistence costs for the field trips will be borne by the student.

658 Landscape Architecture Design and Construction UGRD 5
Synthesis of design development based on theory, principles and skills developed in previous design, construction, history and other related courses.
Wi Qtr. 3 cl, 9 lab hrs. Prereq: 457 or 421.

662 Terrain Analysis UGRD 5
Methods and techniques of terrain analysis using aerial photographs, exploring characteristics of landform units, and addressing development issues.
Sp Qtr. 2 cl, 1-2 hr lab. Prereq: GeolMin 121 or permission of instructor. Not open to students with credit for 362 or 610.

663 Landscape Architecture Professional Practice UGRD 5
Seminar
Development of writing skills applied to professional issues in landscape architecture.
Sp-Qtr. 2-2-hr cl, 1-hr cl. Prereq: Second writing course and sr standing, or 644. Not open to students with credit for 451. GEC course.

665 Digital Landscape Architectural Design and Documentation GRAD 5
Introduction to the design procedures appropriate to emerging technology, especially AutoCAD and related software introduction to documentation methods for construction and implementation.
Su Qtr. 3 cl, 3-2 hr labs. Prereq: 361 or equiv.

670 Graphic Techniques in Landscape Architecture GRAD 3
Graphic media, elements, and skills required in the preparation of landscape architectural presentations in plan, section, and elevation.
Au Qtr. Prereq: Grad standing in LArch or permission of grad studies committee.

672 Landscape Architectural Graphics II GRAD 3
Principles and techniques of drawing and rendering of sections, isometrics, and perspectives.
Wi Qtr. 6 lab hrs. Prereq: 670 and grad standing in LArch. Not open to students with credit for 272.

693 Individual Studies UGRD 2-5
For students in the Graduate School and those who wish to pursue special studies in landscape architecture.
Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing or permission of dept. Repeatable to a maximum of 20 or hrs. This course is graded S/U.

694 Group Studies UGRD 2-5
For students majoring in landscape architecture desiring to pursue special studies not offered in the fixed curriculum.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of the dept. Repeatable to a maximum of 15 or hrs.

697 Study at a Foreign Institution UGRD 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 or hrs. This course is Progress (P) graded. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

698.01 Study Tour: Domestic UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only.

698.02 Study Tour: Foreign UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only.

698.03H Study Tour: Honors UGRD 1-15
Honors. Repeatable.

698.04 Study Abroad Preparatory Course UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details. 698.04H (honors) may be available.
Prereq: Permission of instructor. Repeatable for different titled study tours only.

702 Landscape Architecture Presentation Graphics UGRD 4
Fundamentals of graphic technology in page and document layout design.
Su Qtr. Qtrs. 2-3 hr labs. Prereq: Rank 3 or 4 or grad standing or permission of instructor. Not open to students with credit for CRPlan 702 or undergraduate students in landscape architecture. Cross-listed in City and Regional Planning.

740 Research and Documentation in Landscape Architecture GRAD 5
Research in professional practice techniques; emphasizes all phases of design investigation and documentation.
Au, Wi, Sp Qtrs. 2-3 hr labs. Prereq: Grad standing in LArch. Repeatable to a maximum of 15 or hrs.

750 Graduate Landscape Architectural Design: Advanced Site Planning GRAD 5
Advanced professional landscape architectural project design techniques; documentation and execution of all phases from programming through detailed design and construction documents
Au, Wi, Sp Qtrs. 3 cl, 3 lab hrs. Prereq: Completion of 640 series or permission of instructor. Repeatable to a maximum of 15 or hrs.

752 Graduate Landscape Architectural Design: Land Planning GRAD 5
The relationship between humans and the macro-environment; emphasizes contemporary land use issues, relationship between limited natural resources and human use; use of GIS technology to analyze landscapes and formulate plans and policies.
3 cl, 3-3-hr labs Prereq: Completion of 640 series or permission of instructor. Repeatable to a maximum of 15 or hrs.
### Latin

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit</th>
<th>Prerequisites</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>101.01</td>
<td>Elementary Latin I</td>
<td>UGRD 5</td>
<td>101.01 or 101.55 Prereq</td>
<td>Not open to students with credit for 101-104 except by perm.</td>
</tr>
<tr>
<td>101.55</td>
<td>Elementary Latin I: Accelerated</td>
<td>UGRD 5</td>
<td>101.55 Prereq</td>
<td>Not open to students with credit for 101-104 except by perm.</td>
</tr>
<tr>
<td>102.01</td>
<td>Elementary Latin II</td>
<td>UGRD 5</td>
<td>102.01 or 102.55 Prereq</td>
<td>Not open to students with credit for 101-104 except by perm.</td>
</tr>
<tr>
<td>102.55</td>
<td>Elementary Latin II: Accelerated</td>
<td>UGRD 5</td>
<td>102.55 Prereq</td>
<td>Not open to students with credit for 101-104 except by perm.</td>
</tr>
<tr>
<td>103</td>
<td>Intermediate Latin I</td>
<td>UGRD 5</td>
<td>103.01 or 103.55 Prereq</td>
<td>Not open to students with credit for 101-104 except by perm.</td>
</tr>
<tr>
<td>104</td>
<td>Intermediate Latin II</td>
<td>UGRD 5</td>
<td>104.01 or 104.55 Prereq</td>
<td>Not open to students with credit for 101-104 except by perm.</td>
</tr>
<tr>
<td>170</td>
<td>Intensive Latin Workshop I</td>
<td>UGRD 10</td>
<td>170.01 or 170.55 Prereq</td>
<td>Not open to students with credit for 170 except by perm.</td>
</tr>
<tr>
<td>206</td>
<td>Roman Comedy</td>
<td>UGRD 5</td>
<td>206.01 or 206.55 Prereq</td>
<td>Not open to students with credit for 206 except by perm.</td>
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<tr>
<td>210</td>
<td>Cicero</td>
<td>UGRD 5</td>
<td>210.01 or 210.55 Prereq</td>
<td>Not open to students with credit for 210 except by perm.</td>
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<tr>
<td>211</td>
<td>Vergil</td>
<td>UGRD 5</td>
<td>211.01 or 211.55 Prereq</td>
<td>Not open to students with credit for 211 except by perm.</td>
</tr>
<tr>
<td>212</td>
<td>Roman Historians</td>
<td>UGRD 5</td>
<td>212.01 or 212.55 Prereq</td>
<td>Not open to students with credit for 212 except by perm.</td>
</tr>
<tr>
<td>213</td>
<td>Ovid</td>
<td>UGRD 5</td>
<td>213.01 or 213.55 Prereq</td>
<td>Not open to students with credit for 213 except by perm.</td>
</tr>
<tr>
<td>214</td>
<td>Latin Lyric</td>
<td>UGRD 5</td>
<td>214.01 or 214.55 Prereq</td>
<td>Not open to students with credit for 214 except by perm.</td>
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</tbody>
</table>

### Landscape Architecture

<table>
<thead>
<tr>
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<th>Credit</th>
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<th>Notes</th>
</tr>
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<tbody>
<tr>
<td>270</td>
<td>Intensive Latin Workshop II</td>
<td>UGRD 10</td>
<td>270.01 or 270.55 Prereq</td>
<td>Not open to students with credit for 270 except by perm.</td>
</tr>
<tr>
<td>273</td>
<td>Landscape Architecture</td>
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</tbody>
</table>

### Additional Courses

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<tr>
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<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>293</td>
<td>Individual Studies</td>
<td>UGRD 1-6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>612</td>
<td>Latin Prose Composition</td>
<td>UGRD 5</td>
<td>612.01 or 612.55 Prereq</td>
<td>Not open to students with credit for 612 except by perm.</td>
</tr>
<tr>
<td>614</td>
<td>Readings in Roman Lyric and Erotic Poetry</td>
<td>UGRD 5</td>
<td>614.01 or 614.55 Prereq</td>
<td>Not open to students with credit for 614 except by perm.</td>
</tr>
<tr>
<td>615</td>
<td>Readings in Roman Oratory and Rhetorical Theory</td>
<td>UGRD 5</td>
<td>615.01 or 615.55 Prereq</td>
<td>Not open to students with credit for 615 except by perm.</td>
</tr>
</tbody>
</table>
Latin

701 Survey of Latin Literature: The Republic
A survey of authors representative of the Republican period of Latin literature, with discussion of historical background and methods of criticism. * 2 2-hr cl. Prereq: 4 200-level courses and permission of instructor; or grad standing. Not open to students with credit for 601.

702 Survey of Latin Literature: Augustan Age
A survey of authors representative of the Augustan period of Latin literature, with discussion of historical background and methods of criticism. * 2 2-hr cl. Prereq: 4 200-level courses and permission of instructor; or grad standing. Not open to students with credit for 602.

703 Survey of Latin Literature: Imperial Period
A survey of authors representative of the Imperial period of Latin literature, with discussion of historical background and methods of criticism. * 2 2-hr cl. Prereq: 4 200-level courses and permission of instructor; or grad standing. Not open to students with credit for 603.

783H Honors Research
A program of study arranged for each student with individual conferences, reports, and an honors thesis. Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the Latin courses taken and with an average of B in the remainder; written permission of instructor under whose supervision the work is to be completed and ASC Honors Committee. At least 2 qtrs are required of candidates for the degree BA with distinction in Latin. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

801 Latin Pedagogy
Methods, techniques and pedagogical theories for teaching Latin at secondary and college leve Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the Latin courses taken and with an average of B in the remainder; written permission of instructor under whose supervision the work is to be completed and ASC Honors Committee. At least 2 qtrs are required of candidates for the degree BA with distinction in Latin. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

802 Advanced Latin Prose Composition
Study of the development and style of Latin prose; prose composition exercises; prepared and unprepared readings; conventions of prosody. * 2 cl, tutorial arr. Prereq: 612 or permission of instructor.

812 Studies in Vergil
Critical study of one or more of the works of Vergil. * 2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

814 Studies in Cicero
Selected topics in the works of Cicero. Wi Qtr. 2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

830 Studies in Roman Drama
Critical study of one or more of the Roman dramatists: Plautus, Terence, Seneca. 2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

831 Studies in the Roman Historians
Selected topics in Roman historiography: Caesar, Sallust, Livy, Tacitus. Wi Qtr. 2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

832 Studies in Latin Lyric and Elegy
Selected topics: poems of Catullus, the Odes and Epodes of Horace, or the elegies of Propertius, Tibullus, or Ovid. * Sp Qtr. 2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

833 Studies in Roman Satire and Novel
Critical study of one or more of the Roman satirists and novelists: Lucilius, Horace, Persius, Patronius, Juvenal, Apuleius. * Au Qtr. 2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

835 Studies in Roman Epic
Selected topics in the history of Roman epic exclusive of Vergil: Ennius, Lucretius, Ovid, Lucan. 2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

880 Topics in Roman Antiquity
In-depth examination of issues that are often difficult to address in courses that focus on a single Roman author. 1-3 hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

894 Group Studies
Group Studies. Repeatable to a maximum of 20 cr hrs.

993 Individual Studies
Assigned readings; supervised individual research. Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

995 Seminar I
The seminar completes a two-qr sequence (Au/Wi, Wi/Sp) begun with an 800-level intensive study of an author or genre; e.g. Cicero, Horace, Apuleius, or comedy. Sp Qtr. Repeatable to a maximum of 20 cr hrs. This course is Progress (P*) graded.

999 Research
Research for thesis or dissertation purposes only. Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.
610L Secured Transactions LAW 2-3
Creation and perfection of security interests in goods and intangibles under the Uniform Commercial Code; priorities and remedies. Not open to students with credit for 612.

611L Debtor and Creditor Law LAW 2-3
Debtor and creditor rights and remedies; emphasis on the Bankruptcy Code. Not open to students with credit for 612.

613L Employment Law LAW 2-4
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.

614L Labor Law LAW 2-5
Federal regulation of labor-management relations focusing upon employee organizational and representational rights, selection of bargaining representative, collective bargaining process, contract administration and enforcement, and internal union affairs. 2 to 5 cl. Prereq: 613. Not open to students with credit for 615 or 616.

618L Insurance Law LAW 2-3
Insurance law and practice with particular reference to fire, life, and automobile insurance; insurable interest; warranties and representation; waiver and estoppel; construction standard policies. Au, Sp terms. Repeatable to a maximum of 6 cr hrs.

619L International Law LAW 2-4
International agreements; status of states and individuals; recognition; jurisdiction; international claims; expropriation; human rights; sovereign immunity; war and peace; law of the sea; presidential congressional power.

622L State and Local Taxation LAW 2
Legal problems arising in property, excise, income, and estate-inheritance taxation; tax administration and procedure.

623L Federal Antitrust Law LAW 2-4
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.

624L Immigration Law LAW 3
Law concerning persons who want to come to the United States on a temporary or permanent basis. Repeatable to a maximum of 13 cr hrs.

625L Copyright Law LAW 2-3
Protection of literary and artistic property under the federal copyright statute, related legislation and unfair competition law.

626L Trademark LAW 2-3
An overview of issues in Trademark law. Repeatable to a maximum of 20 cr hrs.

628L Accounting for Lawyers LAW 2-3
Problems of financial information in the context of business enterprise law and tax law.

630L U.S. Legal System and Legal Traditions LAW 3
Overview of American law and the U.S. legal profession, introduction to U.S. common law and statutory law. Repeatable to a maximum of 6 cr hrs.

632L Legal Framework Supporting Advancement of Technical or Innovative Organizational Initiatives LAW 2-4
Laws, rules, policies that shape the corporate structure, employment policies, partnerships, competitive practices and dispute resolution processes for technical or innovative organizations. Not credited towards JD.

634L Juvenile Justice LAW 2-4
The law applicable to children, including a study of agency and juvenile court treatment of dependent, neglected, abused, unruly, and delinquent children. Repeatable to a maximum of 7 cr hrs.

635L Family Law LAW 3-4
Legal concerns in marital relationships, including marriage, annulment, divorce, custody, and post-divorce financial arrangements; legal concerns in quasi-marital living arrangements; communal living and homosexual relationships.

636L Disability Discrimination LAW 4
Problem-oriented analysis of interaction between labor and social science; emphasis on civil commitment, rights of disabled individuals, rights to community services (educational, residential, employement), and guardianship.

638L Adoption Law LAW 2-3
Course examines the adoption laws of the United States through their history and development. Repeatable to a maximum of 6 cr hrs.

639L White Collar Crime LAW 2-3
Advanced substantive and procedural study of the federal criminal law enforcement system including RICO (Racketeer Influenced and Corrupt Organizations), mail fraud, drug offenses, tax enforcement, bank secrecy, and civil rights. 3 cr. Prereq: L633.

640L Criminal Procedure: Investigations LAW 3
Legality of police practices to gather evidence; emphasis on interrogation and search and seizure; some reference to identification procedures and entrapment.

641L Criminal Procedure: Adjudication LAW 3
Study of the criminal justice system emphasizing the right to counsel, bail, preliminary proceedings, grand jury, speedy trial, discovery, and pleas.

642L Law and Religion LAW 2-4
Examines the intersections of law and various religious manifestations. Repeatable to a maximum of 6 cr hrs.

643L Human Rights LAW 3
International norms and procedures for the enforcement of the rights of individuals, including treaties and the activities of international agencies. Repeatable to a maximum of 6 cr hrs.

645L Real Estate Development LAW 2-4
Overview of role that a lawyer plays during the development of a commercial real estate project Repeatable to a maximum of 8 cr hrs.

652L Banking Law LAW 2-3
Study of development of banking activities, structure, and regulation; emphasis on state and federal banking laws; interinstitutional competition, and laws relating to geographic and product expansion.

655L Foster Care Law LAW 3
The legal underpinnings, judicial procedures, and the factual realities of the foster care system in the United States.

665L Wills, Trusts, Estates LAW 2-4
Gifts, wills, intestate succession, protection of spouse and other dependents, fiduciary administration, social security and other employee benefits, life insurance. 2-4 cl hrs.

669L Group Studies LAW 1-4
Group study in selected areas of the law.

670.01L Interprofessional Education: Care of Patient/Client LAW 1-2
Focus 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. Treatment of the whole person through the analysis of the interrelated problems of actual patients/clients. Repeatable to a maximum of 4 cr hrs.

670.03L Ethical Issues LAW 1-2
Focus 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. Ethical issues of concern to the professions and arising from advanced technology: euthanasia, mind control, malpractice, and social responsibility of the professions. Repeatable to a maximum of 4 cr hrs. This course is graded S/U.

701L Negotiation and Mediation Advocacy LAW 1-2
Negotiation and mediation techniques and practices.

702L Issues in Arbitration LAW 3
An introduction to the arbitration process as well as an identification of controversial legal issues that have arisen in the arbitration context. Repeatable to a maximum of 13 cr hrs.

703L Legal Negotiation and Settlement LAW 2-4
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. 2-2 hr cl. Prereq: 736.01 or professional responsibility recommended. Enrollment limited to 16 students, class attendance mandatory.

704L Trial Practice LAW 2-4
Forensic skills developed through actual trial advocacy by individual students in civil or criminal cases. Prereq: 603 or written permission of instructor.
707.01L Professional Practice: Capstone Course LAW 1-3
Courses in the Professional Practice series focus on specific lawyering skills and our taught by law faculty or distinguished adjuncts. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

707.02L Professional Practice Skills Course LAW 1-3
Courses in the Professional Practice series focus on specific lawyering skills and our taught by law faculty or distinguished adjuncts. Repeatable to a maximum of 3 cr hrs.

708L Regulation of Security Distributions LAW 2-3
Analysis of Securities Act of 1933 and its pervasive effects on the issuance and transfers of securities.

710L Federal Courts LAW 3-4
The federal judicial system; jurisdiction of the district courts, courts of appeals, and United States Supreme Court.

3-4 cr hrs.

711L Law and Medicine LAW 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.

712L Lawyering Skills Program LAW 1-4
Students may earn credit for their participation in the lawyering skills program. Repeatable to a maximum of 5 cr hrs. This course is graded S/U.

713L Appellate Practice IV LAW 1-4
Procedural and substantive aspects of appellate practice; perfection of appeals; preparation of briefs and oral argument; participation by third-year students in various aspects of Most Court Program.

1 to 4 cr hrs by arrangement with instructor. Repeatable to a maximum of 6 cr hrs. Grade given on completion of third-year Most Court Program. This course is graded S/U.

714L Herman Moot Court Competition LAW 1-4
The Herman competition is a voluntary intramural appellate advocacy competition for second year students in the J.D. program.

The Herman competition determines invitation to participate in one of the college’s traveling moot court teams.

1-4 hrs by arrangement with instructor.

715L Corporate Taxation LAW 3-4
Taxation of organizations; operations; sales and liquidations; divisions and reorganizations.

Prereq: 606.

717L International Business Arbitration LAW 3
Examines international arbitration procedures through the interaction of private contractual ordering, national law, and international treaties.

Repeatable to a maximum of 6 cr hrs.

718L Small Business and Entrepreneurial Finance LAW 2-3
The financial problems faced by new and small businesses and how they intersect with the law.

Prereq: 607.01L. Enrollment limited to law students; exceptions need approval from both their home academic program leadership and the course instructor.

719L Corporate Finance LAW 2-3
Capital formation and financial transactions.

Prereq: Enrollment limited to law students; exceptions need approval from both their home academic program leadership and the course instructor.

721L Mergers and Acquisitions LAW 2-4
Application of state law, federal securities law, accounting principles, tax law, labor law, products liability law, environmental law, ERISA, antitrust law to mergers and acquisitions.

Repeatable to a maximum of 13 cr hrs.

722L Dispute Resolution Processes: Theory & Practice LAW 3
This course is a survey of dispute resolution processes including negotiation, mediation, arbitration and a variety of court-administered and extra-judicial settlement processes.

Repeatable to a maximum of 6 cr hrs.

724L Comparative Dispute Resolution LAW 3
Examines a wide range of dispute resolution processes in use, not only in the United States but around the world.

Repeatable to a maximum of 6 cr hrs.

725L Employee Benefits LAW 3

Repeatable to a maximum of 6 cr hrs.

726L Advanced Issues in ADR LAW 3
Advanced study in the area of dispute resolution.

Repeatable to a maximum of 13 cr hrs.

728L International Transactions LAW 2-4
Legal problems in transnational context arising from doing business abroad; investments; establishment; exchange controls; trade, licensing; extra-territoriality of regulatory legislation; international agreements; European Common Market.
738.20L Study and Practicum in Legal Problems: Selected Legal Problems Practicum

LAW 1-6

Topics will change as specially scheduled in any semester. Repeatable to a maximum of 6 cr hrs.

739L Pretrial Litigation

LAW 3

Depositions and client interviews; drafting of interrogatories; case strategies. Semester 1, Semester 2. 3-3 hr cl. Prereq: Completion of first-year law.

741L Landlord Tenant

LAW 2-3

Provides a survey of residential landlord and tenant law with a primary focus on Ohio law. Repeatable to a maximum of 8 cr hrs.

743L Remedies

LAW 2-4

An integrated study of remedial theory and devices available in the context of torts, contracts and property law. Repeatable to a maximum of 6 cr hrs.

744L Employment Discrimination Law

LAW 2-4

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. 2-4 cl.

746L Internet, Law & Democracy

LAW 2-4

Course analyzes how the production, consumption, and regulation of Internet speech and digital technologies shape the Internet's democratic impacts, looking especially at the United States. Repeatable to a maximum of 8 cr hrs.

747L Civil Rights

LAW 2-3

Study topics such as discrimination, race and class. 2 or 3 d. Prereq: Completion of first yr law program. Repeatable to a maximum of 9 credit hours.

748L Opinion Writing

LAW 1

A skills-based course focused on various types of judicial opinions. Repeatable to a maximum of 4 cr hrs.

749L Jury Instructions

LAW 1

Step-by-step approach to the drafting of jury instructions. Repeatable to a maximum of 4 cr hrs.

753L Education Law

LAW 3

An examination of the legal framework and issues of public education K-12.

755L Law and Social Science

LAW 2-4

Examines how the law responds to rapid changes in scientific knowledge and technology. Repeatable to a maximum of 6 cr hrs.

756L Separation of Powers Law: Presidential Power

LAW 3

This course 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. Repeatable to a maximum of 13 cr hrs.

757L Special Education Advocacy

LAW 2-3

The law of special education as provided in the Individuals with Disabilities Education Act. Repeatable to a maximum of 6 cr hrs.

758L Sports Law

LAW 2-4

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. Repeatable to a maximum of 8 cr hrs.

760L Law of War

LAW 2-3

The lawfulness of the initiation of hostilities by nations, and the lawfulness of the methods employed in the use of armed force.

761L International Dispute Resolution

LAW 3

This course examines procedures for resolving international disputes (negotiation, mediation, arbitration, judicial settlement), how they operate in contemporary disputes, and how law governs their use. Repeatable to a maximum of 13 cr hrs.

762L International Trade

LAW 3

Public international law framework and institutions that regulate trade and economic relations between nations. Repeatable to a maximum of 6 cr hrs.

764L Commercial Leasing

LAW 3

Business and legal considerations which drive the leasing of a commercial real estate project. Repeatable to a maximum of 6 cr hrs.

766L Nonprofit Law

LAW 3

This course examines the major aspects of governance and tax law issues affecting the nonprofit sector, particularly legal counsel, directors, trustees, employees, or volunteers. Repeatable to a maximum of 6 cr hrs.

771L Lawyers and the Media

LAW 2

Legal and ethical issues involved with making public statements about litigation and legal issues.
### Law

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<tr>
<td>286</td>
<td>Analyzing the Sounds of Language</td>
<td>UGRD 5</td>
<td>The sounds that languages are used are examined. Quantitative analytical tools used in phonetic science are introduced. Small experiments are conducted to introduce students to research. 286H (honors) may be available. Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: Math Placement level R or Math 075 or equiv. Not open to students with credit for SpHr 286. Cross-listed in Speech and Hearing Science. GEC data analysis course.</td>
</tr>
<tr>
<td>294</td>
<td>Group Studies</td>
<td>UGRD 1-5</td>
<td>Introductory topics in linguistics. 294H (honors) may be available. 2-hr cl. Repeatable to a maximum of 10 cr hrs.</td>
</tr>
<tr>
<td>301</td>
<td>Language Evolution and Language Change</td>
<td>UGRD 5</td>
<td>A study of how and why languages change and evolve over time, taking into account the linguistic, historical, ideological and cultural factors involved. Su, Wi, Sp Qtrs. 2 2-hr cl. Not open to students with credit for 311, 385 or NELC 311. Cross listed in Near Eastern Languages and Cultures. GEC arts and hums cultures and ideas course.</td>
</tr>
<tr>
<td>303</td>
<td>Language, Race and Ethnicity in the U.S.</td>
<td>UGRD 5</td>
<td>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. Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: English 110 or 110.01 or 110.02 or 110.03. Not open to students with credit for 305 or AFAM 303 or 305. Cross-listed in African American and African Studies. GEC arts and hums cultures and ideas and social diversity in the US course.</td>
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</tbody>
</table>

### Linguistics

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</thead>
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<tr>
<td>170</td>
<td>Basics of Language for Language Learners</td>
<td>UGRD 5</td>
<td>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. Au, Wi, Sp Qtrs. 2 2-hr cl. GEC soc sci individuals and groups and social diversity - international issues (Global) course.</td>
</tr>
<tr>
<td>201</td>
<td>Introduction to Language in the Humanities</td>
<td>UGRD 5</td>
<td>Examination of language as a system of human communication; provides students with the tools needed for the recording, investigation, and close analysis of language. 201H (honors) may be available. Au, Wi, Sp Qtrs. 2 2hr cl. Not open to students with credit for 202 or English 271. GEC arts and hums cultures and ideas course.</td>
</tr>
<tr>
<td>270</td>
<td>Introduction to Language in the Social Sciences</td>
<td>UGRD 5</td>
<td>Examination of language as a system of human communication; provides students with a general understanding of human linguistic behavior and cognition. Au, Wi, Sp Qtrs. 2 2 hr cl. Not open to students with credit for 201 or 202 or English 271. GEC soc sci individuals and groups course.</td>
</tr>
<tr>
<td>280</td>
<td>Language and Formal Reasoning</td>
<td>UGRD 5</td>
<td>How natural and artificial languages are alike in structure and use in reasoning; how natural languages differ in principles of use by humans. 280H (honors) may be available. Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: Math 075 or equiv or Math placement R. GEC math and logical analysis course.</td>
</tr>
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</table>
489 Internship in Linguistics  
Intensive experience in linguistics as a research assistant on a faculty research project or as an intern at a linguistics-related business or organization. 
Su, Au, Wi, Sp Qtr. Prereq: 201 or 202 or 601 and at least 15 hours of course work towards the major in linguistics. Open only to linguistics majors. Repeatable to a maximum of 5 cr hrs. May be counted towards linguistics major elective hours (5 credit hours maximum). This course is graded S/U.

500 Phonetics  
UGRD 5  
Cross-linguistic survey of the sounds of the world's languages. 
Au, Wi, Sp Qtr. 2-2 hr cl. 1 hr lab. Prereq: 201 or 202 or 601 or equiv. Not open to students with credit for 600.01.

502 Syntax  
UGRD 5  
Basic elements of syntactic description and an overview of syntactic structure across languages. 502E (embedded) may be available for honors embedded experience. 
Au, Wi, Sp Qtrs. 2-2 hr cl. Prereq: 201 or 202 or 601 or equiv. Not open to students with credit for 602.01.

503 Phonology  
UGRD 5  
Introduction to phonological analysis and description, and an overview of phonological structure across languages. 
Au, Wi, Sp Qtrs. 2-2 hr cl. Prereq: 201 or 202 or 601 or equiv. Not open to students with credit for 603.01.

505 Language and the Black Experience  
UGRD 5  
Introduction to the structure, history, and use of distinctive varieties of English used by and among many African Americans in the U.S. 
Su, Au, Wi, Sp Qtrs. 2-2 hr cl. Prereq: English 110 or 110.01 or 110.02 or 110.03. Not open to students with credit for AFAm/AS 505 or English 505. Cross-listed in African American and African Studies and English.

505S Language and the Black Experience  
UGRD 5  
Introduction to the structure, history, and use of distinctive varieties of English used by and among many African Americans in the U.S. 
Sp Qtr. Prereq: Linguist 201 or Linguist 303 or Linguist 367.01 or Linguist 372 or Linguist 375. Not open to students with credit for AFAm/AS 505S or English 505S. Crosslisted in AFAm/AS and English. Service Learning course.

509 Morphology  
UGRD 5  
The grammatical and phonological analysis of words, and their significance in linguistic structure. 
Au Qtr. 1 cl. 1 lab. Prereq: 201 or 202 or 601 or equiv.

550 Introduction to Linguistic Field Methods  
UGRD 5  
Introduction to techniques for studying the grammar of an unknown language, working with a native speaker. 
Su, Au, Wi, Sp Qtrs. 2-2 hr cl. Prereq: Two 500-level (or higher) courses in linguistics (one may be concurrent), Repeatable to a maximum of 15 cr hrs. Permission of instructor required to repeat course.

597.01 Language Endangerment and Language Death  
UGRD 5  
Examines language endangerment and language death to reach an understanding of the forces threatening the survival of over half of today's 6,000 languages. 
Su, Au, Wi, Sp Qtrs. 2-2 hr cl. Prereq: Jr or sr standing. GEC contemporary world course.

597.02 Language and the Law: A Cross Cultural Perspective  
UGRD 5  
Examination of the role of interpretation of language in the law and in legal proceedings, with special consideration of issues in international law and multi-lingual jurisdictions. 
Su, Au, Wi, Sp Qtrs. 2-2 hr cl. Prereq: Jr or sr standing. GEC contemporary world course.

600.01 Phonetics: Phonetic Theory  
UGRD 5  
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: 201, 202, 601 or Sphrng 320.

600.02 Phonetics: Laboratory Phonology  
UGRD 5  
Introduction to laboratory methods and quantitative models of speech for linguistics. 
Prereq: 600.01.

601 Introduction to Linguistics  
UGRD 5  
A broad introduction to general linguistics: survey of phonological, morphological, syntactic, and semantic analysis, and of historical and comparative linguistics. Open to graduate students, declared majors or minors in linguistics, or by permission of instructor.

602.01 Syntactic Theory I  
UGRD 5  
Theories of syntax; principles of syntactic description. 
Prereq: 502, 601.

602.02 Syntactic Theory II  
UGRD 5  
Theories of syntax; principles of syntactic description. 
Prereq: 602.01.

603.01 Phonological Theory I  
UGRD 5  
Introduction to phonological analysis and the principles governing the structure, acquisition, and change of phonological systems; survey of major phonological theories. 
Prereq: 601 or permission of instructor.

603.02 Topics in Advanced Phonology  
UGRD 5  
Introduction to phonological analysis and the principles governing the structure, acquisition, and change of phonological systems; survey of major phonological theories. 
Prereq: 603.01. Repeatable to a maximum of 15 cr hrs.

605 An Introduction to African-American English  
GRAD 5  
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. 
Sp Qtr. 2-2 hr cl. Prereq: One linguistics course at 500-level or above. Not open to students will credit for AFAm/AS 605. Cross-listed in African-American and African Studies.

609 Morphological Theory  
UGRD 5  
Introduction to and comparison of current theories of morphology, with application to linguistic data and problems. 
Prereq: 601 or permission of instructor, concurrent registration in 601.

611 Introduction to Historical Linguistics  
UGRD 5  
Introduction to the methods and principles of historical linguistics. 
Prereq: 500 or 603 or 603.01 or equiv or permission of instructor.

612 Introduction to Cognitive Science  
UGRD 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 or a total of 12 cr hrs from at least two of the following areas: CQtrnl, Linguist, Philos, and Psych. Not open to students with credit for CQtrnl 612, Philos 612 or Psych 612 or 794 (Sp Qtr 1989) or 794A (Wi Qtr 1990). Cross-listed in Computer and Information Science, Philosophy, and Psychology.

615 Psycholinguistics  
UGRD 5  
An introduction to high-level language processing, including word recognition, sentence understanding, and discourse processing. 
Prereq: 601 or permission of instructor. Not open to students with credit for Psych 615 or Linguist 671.

623 Topics in Indic Linguistics  
UGRD 3-5  
Possible topics include advanced classical Sanskrit, introductory Vedic Sanskrit, Indo-Iranian or Indo-Aryan linguistics, or studies in the ancient Indian grammarians. 
Prereq: 622 or Sanskrit 622 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

650.01 Field Methods I  
UGRD 5  
Methodology for determining the phonological system of a previously unknown language through the use of a native informant. 
Prereq: two courses at the 500 level or higher or permission of instructor. Repeatable to a maximum of 40 cr hrs.

650.02 Field Methods II  
UGRD 5  
Methodology for determining the morphological and syntactic system of a previously unknown language through the use of a native informant. 
Prereq: 650.01. Repeatable to a maximum of 40 cr hrs.

661.01 Introduction to Sociolinguistics  
UGRD 5  
Survey of approaches to the study of language in its social context: sociology of language, ethnography of speaking, discourse analysis, quantitative sociolinguistics. 
Prereq: 201 or 202 or 601 or permission of instructor.

661.02 Introduction to Quantitative Sociolinguistics  
UGRD 5  
Exploration of language in its social context through the methods of quantitative analysis of linguistic variation, including the Labovian and implicational models. 
Prereq: 661.01.

672 Language Description  
UGRD 3-5  
Informant techniques and (if available) textbooks and published linguistic analyses are employed in analyzing and describing a language. 
Prereq: 601. Repeatable to a maximum of 30 cr hrs.

680 Formal Foundations of Linguistics  
UGRD 5  
Applying tools from set theory, symbolic logic, model theory, algebra and formal grammar in the foundations of formal linguistic theories and in linguistic analysis. 
Au Qtr. 1 cl. and 1 lab. Prereq: 201 or 270 or 601 or equiv.

681 Algebraic Linguistics  
UGRD 5  
Formal properties of grammar and automata; relations between linear-context-free and context-sensitive grammars and finite, pushdown-storage and linear-bounded automata; properties of transformational grammars. 
Prereq: 601 and permission of instructor.

683.01 Linguistic Semantics I  
UGRD 5  
Problems and methods in linguistic semantics, using logic and semantic model theory as analytic tools; reference, compositionality, presupposition, conversational implicature, speech acts, deixis. 
Prereq: 680 or equiv.

683.02 Linguistic Semantics II  
UGRD 5  
Montague semantics and more recent semantic theories; analysis of important problems, such as generalized quantifiers, lattice-based accounts of plurals and events, discourse representation theory. 
Prereq: 683.01 or equiv.
Prereq: 683.02. Computational Models of Grammar II UGRD 5
Computational models of semantic interpretation, and the role of pragmatic knowledge in sentence processing; implementation of current grammatical theories.
Sp Qtr. Prereq: 683.01 and 684.01.

685 Languages in Contact UGRD 5
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: One linguistics course at 500-level or above.

693 Individual Studies UGRD 1-20
Individual Studies.
Su, Au, Wi, Sp Qtrs. Prereq or conc: 601 or permission of instructor. Repeatable to a maximum of 40 or hrs. This course is graded S/U.

694 Group Studies UGRD 1-5
Study of topics not regularly scheduled for seminars in linguistics, under the direction of a faculty member.
Prereq: 601. Repeatable to a maximum of 30 or hrs.

699 Undergraduate Research Seminar in Linguistics UGRD 5
Linguistics students learn about cutting-edge research by OSU linguists and get hands-on experience conducting their own linguistic research.
Su, Au, Wi, Sp Qtrs. 2 hr. Prereq: At least one 500-level linguistics course or permission of instructor. Linguistics majors only.

737 Proseminar in Cognitive Science UGRD 2
An in-depth examination of the interdisciplinary field of cognitive science; emphasizes fundamental issues of each discipline, provides illustrations of representative research being conducted at OSU.
Prereq: CptrInf 612, Linguist 612, Psych 612, or Philos 612, or permission of instructor. Repeatable to a maximum of 4 cr hrs. Cross-listed in Computer and Information Science, Industrial Systems Engineering, Philosophy, Psychology, and Speech and Hearing Science.

780 Formal Pragmatics UGRD 5
Introduction to contemporary theories of pragmatic phenomena which build on theories of dynamic interpretation in formal semantics.
Prereq: 683.02.

783H Honors Research UGRD 3-5
Informal conferences to allow full scope to the initiative of the student, who will prepare an honors thesis in consultation with the instructor.
Prereq: 4th yr standing and the completion of departmental honors requirements with a grade of A in at least half of the linguistics courses, including approved related courses; permission of instructor under whose supervision the work is to be completed.
Prereq: 683.01 and 684.01 or equivalent. Repeatable to a maximum of 15 or hrs. This course is graded S/U.

795.01 Seminar Discussion Groups: TA Workshop UGRD 1-5
A selected group study, with emphasis on individual writing and presentation.
Prereq: 600-level or above in linguistics, or permission of instructor. Repeatable.

795.02 Seminar Discussion Groups: Syntax UGRD 1-5
A selected group study, with emphasis on individual writing and presentation.
Prereq: 600-level or above in linguistics, or permission of instructor. Repeatable.

795.03 Seminar Discussion Groups: Phonetics/Phonology UGRD 1-5
A selected group study, with emphasis on individual writing and presentation.
Prereq: 600-level or above in linguistics, or permission of instructor. Repeatable.

795.04 Seminar Discussion Groups: Computational Linguistics UGRD 1-5
A selected group study, with emphasis on individual writing and presentation.
Prereq: 600-level or above in linguistics, or permission of instructor. Repeatable.

795.10 Seminar Discussion Groups: Topics in Linguistics UGRD 1-5
A selected group study, with emphasis on individual writing and presentation.
Prereq: 600-level or above in linguistics, or permission of instructor. Repeatable.

795.14 Seminar Discussion Groups: Pragmatics UGRD 1-5
A selected group study, with emphasis on individual writing and presentation.
Prereq: 600-level or above in linguistics, or permission of instructor. Repeatable.

795.47 Seminar Discussion Groups: Language Acquisition Research Group UGRD 1-5
Weekly forum open to anyone with interest in first or second language acquisition. A varied schedule: paper reading, presentations of work in progress, general discussion. Repeatable.

795.61 Seminar Discussion Groups: Sociolinguistics/Historical Linguistics UGRD 1-5
A selected group study, with emphasis on individual writing and presentation.
Prereq: 600-level or above in linguistics, or permission of instructor. Repeatable.

795.71 Seminar Discussion Groups: Psycholinguistics UGRD 1-5
A selected group study, with emphasis on individual writing and presentation.
Prereq: 600-level or above in linguistics, or permission of instructor. Repeatable.

801 Historical Linguistics I UGRD 5
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: 601, and either 611 or written permission of instructor.

802 Historical Linguistics II UGRD 5
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: 801.

803 Topics in Indo-European UGRD 5
Study of various Indo-European languages and language families and exploration in depth of specific problems in Indo-European grammar.
Prereq: 802. Repeatable to a maximum of 30 cr hrs.

809 Seminar in Morphology UGRD 3-5
Advanced topics in morphological analysis.
Arr. Prereq: 609. Repeatable to a maximum of 30 cr hrs.

812 Seminar in Semantics UGRD 5
Accounts of semantic judgments in languages, especially within the theory of generative grammar; relationships between syntax, semantics, and language use.
Prereq: 602.02; a course in symbolic logic recommended. Repeatable to a maximum of 30 cr hrs.

814 Seminar in Pragmatics UGRD 5
An intensive examination of one or more major problems in pragmatics, such as speech acts, implicature, or presupposition.
Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

820 Seminar in Syntax UGRD 5
Advanced topics in syntactic analysis.
Prereq: 502.02. Repeatable to a maximum of 30 cr hrs.

821 Seminar in Phonology UGRD 5
Advanced topics in phonological analysis.
Prereq: 603.02. Repeatable to a maximum of 30 cr hrs.

822 Seminar in Historical Linguistics UGRD 5
Advanced topics in methods and principles of diachronic analysis.
* Prereq: 611 or permission of instructor. Repeatable to a maximum of 30 cr hrs.

825 Seminar in Advanced Phonetics UGRD 5
Study of specific problems in articulatory and acoustic phonetics at an advanced level.
Prereq: 600. Repeatable to a maximum of 30 cr hrs.

830 Teaching Introductory Linguistics UGRD 3
Designed to train instructors in the techniques and materials used to teach introductory linguistics courses.
Prereq: 601 or equiv. This course is graded S/U.

861 Seminar in Sociolinguistics UGRD 3-5
Advanced topics in sociolinguistics.
Arr. Prereq: 681. Repeatable to a maximum of 30 cr hrs.

871 Seminar in Psycholinguistics UGRD 3-5
Advanced topics in psycholinguistics.
Sp Qtr. Arr. Prereq: 671. Repeatable to a maximum of 30 cr hrs.

884 Seminar in Computational Linguistics UGRD 5
Advanced topics in computational linguistics.
Prereq: 584.01; 584.02 or CSE 732; or permission of instructor. Repeatable.

899 Interdepartmental Seminar UGRD 3-5
Two or more departments present seminars on subjects of mutual interest; topics to be announced.
Prereq: Permission of instructor(s). Repeatable to a maximum of 15 cr hrs. with permission of dept.

993 Individual Studies UGRD 1-15
Assigned reading and individual research.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

999 Research in Linguistics UGRD 1-18
Research for thesis purposes only.
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

Master of Business Administration
**Master of Business Administration**

**881 Advanced Legal and Regulatory Environment**
- Application of the law in areas of ethics, litigation, personal liability, employment and agency law for strategic level professionals.
  - Prereq: Enrollment in structured MBA program, executive track.

**883 Individual Studies**
- Individual study projects in selected areas in business not otherwise offered.
  - Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 16 or hrs. This course is graded S/U.

**884 Group Studies**
- Students are given an opportunity to pursue special studies not otherwise offered.
  - Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 16 or hrs.

**980 Strategy Formulation and Implementation I**
- Introduction to the nature of corporate strategy, development of a conceptual framework for understanding competition in industries, and the factors that shape competitive success or failure.
  - Su, Sp Qtrs. Prereq: Enrollment in structured MBA.

### Materials Science and Engineering

**194 Group Studies**
- Special topics.
  - Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 12 or hrs.

**205 Introduction to Materials Science and Engineering**
- Structure, processing, properties, and applications of metals, ceramics, polymers, and composite materials.
  - Au, Wi, Sp Qtrs. 3 1-hr lectures, 1 1-hr rec. Prereq: Math 141 or 151 or 161; Physics 131, and Chem 121 or Chem 201H.

**281 Materials Processing Laboratory**
- Introductory lab course dealing with the appearance, handling, and characteristics of several important materials.
  - Au Qtr. 1 3-hr lab. Prereq: 205 or concur.

**282 Materials Characterization Laboratory**
- Microscopy, diffraction, and chemical analyses of metallic, ceramic, semiconducting, and polymeric materials.
  - Wi Qtr. 1 1-hr cl, 1 2-hr lab. Prereq: 342 or 571.01 or concur and MatScEn major or permission of instructor. Not open to students with credit for 571.02.

**293 Individual Studies**
- Investigations in areas of advanced non-thesis research. Library and/or research investigations under the directions of instructors. Comprehensive report required.
  - Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 12 or hrs. This course is graded S/U.

**294 Group Studies**
- Special topics.
  - Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 12 or hrs.

**341 Atomic Scale Structure of Materials**
- Crystal structures in metals, ceramics and other materials, point defects in crystals, structure determination by X-ray diffraction.
  - Au Qtr. 3 1-hr cl. Prereq or concur: 205. Not open to students with credit for 541.

**342 Microstructure and Characterization of Materials**
- Introduction to dislocations, grain boundaries, surfaces and multiphase microstructures. Optical and electron microscopic characterization of microstructures.
  - Wi Qtr. 3 1-hr lec. Prereq: 205 or concur or 341 and MatScEn major or permission of instructor. Not open to students with credit for 571.01.

**361 Introduction to Mechanical Behavior of Materials**
- Macroscopic mechanical response of ceramics, metals, polymers and composite materials, with an introduction to the underlying microstructural processes during deformation.
  - Sp Qtrs. 3 1-hr cl. Prereq: 205, Math 153 and prereq or concur MechEn 420 or 440, MatScEn major or permission of instructor. Not open to students with credit for 561.

**371 Electronic Materials**
- Structure - properties relations and application of materials in electronics, magnetics and optics.
  - Sp Qtrs. 3 1-hr cl. Prereq: 205, Physics 132, Math 153, MatScEn major or permission of instructor. Not open to students with credit for 671.

**394 Group Studies**
- Special topics.
  - Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 12 or hrs.

**401 Materials Thermodynamics**
- First three laws of thermodynamics; phase equilibria; reaction equilibria; solution theory; phase diagrams.
  - Au Qtr. 3 1-hr lec, 1 2-hr rec. Prereq: 205, Physics 132, Math 254, and Chem 121, MatScEn or Weld eng major or permission of instructor.
282 Materials Science and Engineering

489 Professional Practice in Industry UGRD 2
Preparation of a comprehensive report based on employment experience in a co-op job in industry.
Su, Au, Wi, Sp. Qtrs. Arr. Prereq: Admission to co-op program. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

493 Individual Studies UGRD 1-6
Investigations in areas of advanced non-thesis research. Library and/or research investigations under the directions of instructors. Comprehensive report required.
Su, Au, Wi, Sp. Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

494 Group Studies UGRD 1-6
Special topics.

525 Phase Diagrams UGRD 3
Phase diagrams of unary, binary and ternary materials systems; thermodynamics and applications.
Wi Qtr. 3-hr cl. Prereq: 401, MatScEn or WeldEng major or permission of instructor. Not open to students with credit for 521.01 or 524.01.

526 Transport and Kinetics UGRD 3
Transport of heat, mass and momentum and kinetics as applied to materials processing.
Au Qtr. 3-hr cl. Prereq: Math 415; prereq or concur: MatScEn 341, MatScEn major or permission of instructor. Not open to students with credit for 522.01.

533 Modeling of Materials Processing Methods UGRD 3
Development and application of simple mathematical models of selected Solidification Processing methods, Solid State Processing methods, and Vapor Phase Processing methods.
Sp Qtr. 3-hr cl. Prereq: 525 and 526, MatScEn major or permission of instructor.

543 Structural Transformations UGRD 3
Principles of structural transformations in materials. Thermodynamics and kinetics of nucleation, growth, precipitation, and martensitic reactions.
Sp Qtr. 3-hr cl. Prereq: 342, 401, 525 or 542.01, MatScEn or WeldEng major or permission of instructor.

564 Mechanical Behavior and Material Microstructure
Course provides detailed understanding of how atomic-scale and micro-scale structure controls macroscopic mechanical behavior of ceramics, metals, polymers and composite materials.
Wi Qtr. 3-hr cl. Prereq: 341, 342, 361, MatScEn major or permission of instructor. Not open to students with credit for 562.01.

581.01 Materials Science Laboratory I UGRD 2
Laboratory experiments related to material properties and processes. Introduction to experimental techniques in materials science. Development technical writing skills.
Au Qtr. Prereq: 205 and 3rd yr engineering standing, MatScEn major or permission of instructor. Not open to students with credit for 521.02. GEC course.

581.02 Materials Science Laboratory II UGRD 2
Laboratory experiments related to material properties and processes. Introduction to experimental techniques in materials science. Development technical writing skills.
Wi Qtr. Prereq: 205 and 3rd yr engineering standing, MatScEn major or permission of instructor. Not open to students with credit for 524.02. GEC course.

581.03 Materials Science Laboratory III UGRD 2
Laboratory experiments related to material properties and processes. Introduction to experimental techniques in materials science. Development technical writing skills.
Sp Qtr. Prereq: 205 and 3rd yr engineering standing, MatScEn major or permission of instructor. Not open to students with credit for 522.02. GEC course.

581.04 Materials Science and Engineering Laboratory UGRD 2
for Welding Engineering
Laboratory experiments related to materials characterization and properties for Welding Engineering students. Introduction to experimental techniques in materials science. Development technical writing skills.
Wi Qtr. Prereq: 205 and 3rd yr engineering standing, MatScEn major or permission of instructor. Prereq or concur: 525. Not open to MatScEn majors without approval.

594 Group Studies UGRD 1-6
Special topics.

595.01 Junior Seminar I UGRD 1
Public speaking, lab safety, and Senior Design project.
* Au Qtr. Prereq: Jr standing in MatScEn. This course is graded S/U.

595.02 Junior Seminar II UGRD 1
Seminars on Industrial Experience and on Graduate School by outside invited speakers.
Prereq: Jr standing in MatScEn. This course is graded S/U.

595.03 Junior Seminar III UGRD 1
Seminars and participation in senior design projects.
Sp Qtr. Prereq: Jr standing in MatScEn. This course is graded S/U.

600 Materials Selection and Performance I UGRD 3
Integration of structure, properties, processing, and performance principles to formulate and implement solutions to materials engineering problems.
Wi Qtr. 3-hr cl. Prereq: Sr standing in MatScEn or CeramEn or MetaEn or permission of the instructor.

601 Materials Selection and Performance II UGRD 3
Integration of structure, properties, processing and performance principles to formulate and implement solutions to materials engineering problems.
Sp Qtr. 3-hr cl. Prereq: 600, MatScEn major or permission of instructor. Not open to students with credit for 685.

602 Analysis of Die Casting Processes UGRD 3
Fundamental principles underlying the die casting process; integration of cast component design, process requirements and economics.
* Wi Qtr. 2.15-hr cl. Prereq: Grad or sr standing in Engineering or the physical sciences. Offered even-numbered academic years. Cross-listed in Industrial and Systems Engineering.

605 Principles of Materials Science UGRD 4
A quantitative survey of processing, structure, and properties relationships in engineering materials. A quantitative introduction for students with non-MatScEn technical backgrounds.
Au Qtr. 2-hr cl. Prereq: Physics 132, Math 254, Chem 121, and MatScEn 205, or permission of instructor. Not open to MetalEn/CeramEn/MatScEn majors.

612 Structure and Defects of Crystalline Ceramics UGRD 3
Structure of ceramic crystals, point defects and non-stoichiometric structures.
Au Qtr. 3-hr cl. Prereq: 205, 341, MatScEn major or permission of instructor.

614 Electrical, Optical and Magnetic Properties of Ceramic Materials UGRD 3
Ceramic conductors, sensors, varistors; dielectric materials; electro-optic ceramics, fiber optics and magnetic materials.

615 Chemical Processing of Ceramics UGRD 3
Chemical methods for making ceramic powders, the colloidial behavior of ceramic particulate suspensions and the multicomponent, multiphase equilibria found in thermomechanically processed ceramics.
Au Qtr. 3-hr cl. Prereq: 525, MatScEn major or permission of instructor. Not open to students with credit for 623.

616 Ceramic Forming Processes UGRD 3
Principles of ceramic forming processes and raw materials.
Wi Qtr. 3-hr cl. Prereq: Sr or grad standing in MatScEn or permission of instructor. Not open to students with credit for 624.

617 Thermal Processing of Ceramics UGRD 3
Ceramic drying and firing processes. Emphasis is on microstructure development: calcining, solid state sintering, liquid phase sintering, grain growth, hot pressing and reaction bonding.
Sp Qtr. 3-hr cl. Prereq: 616, MatScEn major or permission of instructor. Not open to students with credit for 625.

618 Structure, Properties and Processing of Glass UGRD 3
Processing, structure and properties of glasses and basic glass manufacturing operations.
Sp Qtr. 3-hr cl. Prereq: 341, MatScEn major or permission of instructor. Not open to students with credit for 632.

619 Ceramic Processing Laboratory UGRD 1
Processing and properties of ceramic materials.
Wi Qtr. 1-3 hr lab. Prereq or concur: 615 or 616, MatScEn major or permission of instructor. Not open to students with credit for 653.

642 Structure and Properties of Solid Polymers UGRD 3
Principles of polymer science and engineering and the important concepts that distinguish plastics from inorganic materials. Structure/property relationships that drive new applications.
Au Qtr. Prereq: Physics 132, Math 254, Chem 121, MatScEn major or permission of instructor.

643 Molecular Aspects of Polymer Properties UGRD 3
An introduction to the physical properties of polymeric materials, integrating polymeric structure with physical properties, and the application of these properties.
Wi Qtr. Prereq: 642 or permission of instructor.

644 Structure and Properties of Composite Materials UGRD 3
Structure and properties of polymer matrix, metal matrix, and ceramic matrix composites. Tailoring of properties by composite design.
Wi Qtr. 3-hr cl. Prereq: 341, 361, MatScEn major or permission of instructor. Not open to students with credit for 684.

645 Materials in Medicine I UGRD 3
The science and engineering of materials having medical applications.
Wi Qtr. 3-hr cl. Prereq: 642, MatScEn major or permission of instructor.

646 Materials in Medicine II UGRD 3
How materials can be modified to meet the needs of specific medical applications.
Sp Qtr. 3-hr cl. Prereq: 645 and ECEB 415, MatScEn major or permission of instructor.

649 Biomaterials Processing Lab UGRD 1
Processing and properties of biomaterials; forming processes used with biomaterials.
Wi Qtr. 1-3 hr lab. Prereq: 205, 642 or CHBE 773, or permission of instructor.
Materials Science and Engineering

661 Ferrous Metallurgy UGRD 3
Physical metallurgy of plain carbon and alloy steels.
Au Qtr. 3 1-hr cl. Prereq: 543, MatScEn major or permission of instructor. Not open to students with credit for 651.01.

662 Corrosion UGRD 3
Principles of corrosion engineering; definitions, types of corrosive attack and methods of minimization and prevention.
Au Qtr. 2 1-hr cl, 1 2-hr lab. Prereq: Sr or grad standing in engineering or permission of instructor. Not open to students with credit for 681.

663 Non-Ferrous Metallurgy UGRD 3
Physical metallurgy of important non-ferrous alloys; their properties and applications.
Au Qtr. 2 1.5-hr cl. Prereq: 543, 564, MatScEn major or permission of instructor. Not open to students with credit for 665.

666 Deformation Processing UGRD 3
Continuum behavior of metals; analysis of common forming operations; slab calculations, ideal work methods, upper bound analysis, other numerical methods.
Wi Qtr. 1 3-hr cl. Prereq: MechEn 420 or 440, MatScEn major or permission of instructor.

667 Casting and Powder Metallurgy UGRD 3
Near net shape manufacturing via solidification and powder metallurgy methods.
Sp Qtr. 2 1-hr d, 1 2-hr lab. Prereq: 526, 543, MatScEn major or permission of instructor. Not open to students with credit for 611.

668 Process Metallurgy UGRD 3
Thermodynamics, reaction kinetics, and fluid, heat and mass transfer principles applied to metallurgical processes including their analysis and process design.
Sp Qtr. 3 1-hr cl. Prereq: 526, MatScEn major or permission of instructor. Not open to students with credit for 630.

669 Metallic Materials Lab UGRD 1
Heat treatment, microstructure, phase transformations and mechanical properties of steels. Microstructure control for mechanical property optimization.
Wi Qtr. 1 3-hr lab. Prereq: 661 or 663, MatScEn major or permission of instructor. Not open to students with credit for 651.02.

673 Electroceramics: Chemical Sensors, Thin-films, and Nano-structures UGRD 3
Principles of chemical sensing, catalysis, nano-materials/nano-structures and thin-films; includes laboratory group projects.
Wi Qtr. Prereq: Sr, MatScEn major or grad standing in engineering or math and physical sciences, or permission of instructor. Not open to students with credit for 659H or Physics 659H.

676 Processing Electronic Materials UGRD 3
Introduction to microfabrication with emphasis on processing, structure and stability of materials in microelectronics.
Wi Qtr. 3 1-hr cl. Prereq: 371, 543, MatScEn major or permission of instructor. Not open to students with credit for 621.01.

679 Electronic Materials Lab UGRD 1
Laboratory experience in microelectronics processing.
Wi Qtr. 5-hr lecture and 2.5-hr lab. Prereq or concur: 676, MatScEn major or permission of instructor. Not open to students with credit for 621.02.

693 Individual Studies UGRD 1-6
Investigations in areas of advanced non-thesis research. Library and/or research investigations are under the close direction of instructors. Comprehensive report required.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 12 or hrs. This course is graded S/U.

694 Group Studies UGRD 1-6
Special topics.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 12 or hrs.

711 Solidification Science GRAD 3
Thermodynamics of undercooing, local equilibrium, and interface non-equilibrium. Macroanalysis of solidification dynamics; microanalysis of microstructure formation.
2 1.5-hr cl. Prereq: Grad standing in MatScEn or permission of instructor.

730 Thermodynamics of Corrosion UGRD 4
Thermodynamics of mixtures and phase equilibria relevant to metallurgy and materials science.
2 2-hr cl. Prereq: Grad standing or permission of instructor.

731 Physical Properties of Glass UGRD 3
Viscosity, chemical durability and thermal, electrical, optical, and mechanical properties of commercial glasses. Effects of thermal history and composition.
3 1-hr cl. Prereq: 632 or grad standing in MatScEn or permission of instructor.

735 Advanced Corrosion UGRD 3
Theories and mechanisms of corrosion.
3 1-hr cl. Prereq: Grad standing in MatScEn or permission of instructor.

736 High Temperature Corrosion UGRD 3
Corrosion of metals and alloys in high-temperature gases and salts.
3 1-hr cl. Prereq: Grad standing in MatScEn or permission of instructor.

747 Structure and Defects in Materials GRAD 4
Structure and defects in crystalline and amorphous solids.
Au Qtr. 2 2-hr cl. Prereq: Grad standing in MatScEn or permission of instructor. Not open to students with credit for 725. Cross-listed in Nuclear Engineering.

756 Computational Materials Modeling GRAD 3
Introduction to common computer modeling methods including hands-on work with emphasis on the atomic and nano-scales.
Au Qtr. 2 1.5-hr cl. Prereq: Permission of instructor.

765 Mechanical Behavior of Materials GRAD 3
Mechanical response of materials to loads and deformation.
2 1.5-hr cl. Prereq: Grad standing in MatScEn or permission of instructor.

774 Polymer Membranes UGRD 3
In-depth study of membrane separation mechanisms, transport models, membrane permeability/computations/measurements, membrane materials/types/modulus and membrane reactions.
Prereq: CHBE 509 or standing in MatScEn or grad standing. Not open to students with credit for CHBE 774. Cross-listed in Chemical and Bio molecular Engineering.

777 Electronic Properties of Materials GRAD 3
In-depth analysis of the structure - property relationships and application of materials in electronics, optics and magnetics.
Wi Qtr. Prereq: Graduate standing in Engineering or Science or permission of instructor.

783H Honors Research UGRD 1-3
Honors level analysis of design problem, formulation of approach to solve problem, and execution of design project with written and oral reports.
Su, Au, Sp Qtrs. Arr. Prereq: Sr standing in MatScEn. Repeatable to a maximum of 3 or hrs. Must be scheduled in first two quarters of academic year of projected graduation.

793 Individual Studies GRAD 1-6
Individual Studies.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. This course is graded S/U.

794 Group Studies UGRD 1-6
Special advanced topics.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 12 or hrs.

795 Graduate Seminar and Colloquium GRAD 1
Discussion of current thesis problems, outstanding current literature and related topics in Materials Science and Engineering.
Au, Wi, Sp Qtrs. Repeatable to a maximum of 30 cr hrs. Required of all grad students in MatScEn each quarter (Su excluded). Up to 6 hrs may be applied toward a masters degree and up to 12 hrs may be applied toward a doctorate degree. This course is graded S/U.
284 Materials Science and Engineering

835 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.
3 1-hr cl. Prereq: 730 or permission of instructor.

845 Solid Surfaces and Interfaces
Thermodynamics and structure of surfaces and interfaces.
3 1-hr cl. Prereq: 730, 732, 745.

850 Structural Transformations
Structural transformations in materials with emphasis on basic phenomena. Selected topics will be developed based on classical approaches and recent advances.
2 1.5-hr lec. Prereq: 730, 750.

855 Electron Diffraction
2 1.5-hr cl. Prereq: 715.

861 Plasticity
Continuum and micromechanisms of plastic deformation.
2 1.5-hr cl. Prereq or concur: 765, or permission of instructor.

862 Microstructural Elasticity
Interaction of elastic defects in crystalline and continuum solids.
2 1.5-hr cl. Prereq or concur: 765, or permission of instructor.

863 Elevated Temperature Deformation
Micromechanics of elevated temperature deformation.
2 1.5-hr cl. Prereq or concur: 765, or permission of instructor.

864 Fatigue of Materials
An overview of the mechanics and mechanisms of fatigue in metals and non-metals. Will include state-of-the-art fatigue concepts and applications of fatigue theory to structural life prediction.
3 1-hr cl. Prereq: Undergraduate courses in mechanical and materials science.

881 Advanced Topics in Corrosion Science
In-depth understanding of the critical issues in the corrosion of metals, and methods for prevention, control, and experimentation.
2 1.5-hr cl. Prereq: 735 or permission of instructor.

893 Individual Studies
Individual studies.
3 1-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs.

950 Precalculus Mathematics I
Arithmetic of fractions and decimals, basic algebra, graphing equations, geometry, exponents, applications of exponents, lines and slopes, area.
Su, Au, Wi, Sp Qtrs. 5 cl. Not open to students with credit for any higher numbered math course. Credit will not count toward graduation in any degree program.

75 Precalculus Mathematics II
Factoring, rational expressions and equations, graphs, systems of linear equations and inequalities, problem solving, roots and radicals, quadratic equations, complex numbers.
Su, Au, Wi, Sp Qtrs. 4 cl. Prereq: 50 or satisfactory score on Ohio State Math Placement Test.
Not open to students with credit for any math course except 50. Credit will not count toward graduation in any degree program. GEC basic computational skills course.

76 Reentry Precalculus Mathematics
Systems of equations, arithmetic of polynomials, factoring, fractional equations, variation, quadratic equations, functions, graphs, and right angle trig.
^ Wi Qtr. 4 cl. Prereq: At least one yr of high school algebra, but not enough for 5 or more yrs at time of university enrollment, no formal training in math in the past 5 yrs, and written permission of Dept of Mathematics. Not open to students with a mark in any Ohio State math course within the past 5 yrs. Credit will not count toward graduation in any degree program. GEC basic computational skills course.

103 Enrichment of Basic College Mathematics
Supplement to Math 104 using small group interaction and active learning to enhance the development of skills necessary to succeed in 104 and subsequent courses.
^ Au Qtr. 2 cl. Prereq: New first quarter freshman, no math admission condition, and Math Placement T or S; concur: 104. This course is not repeatable under any circumstances (not through audit, repeating a D, repeating an E or NP, Fresh Start, Freshman Forgiveness, transfer credit, or any other means). Credit may not count toward graduation in some degree programs.

104 Basic College Mathematics
Systems of equations, arithmetic of polynomials, rational expressions, factoring, fractional equations, inequalities, exponents, quadratic equations, absolute values, functions, and graphs.
Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 50 or satisfactory score on Ohio State Math Placement Test or permission of dept. Not open to students with credit for 130, 148, or 150, or 151 or 151.xx. Credit may not count toward graduation in some degree programs. GEC basic computational skills course.

105 Fundamental Mathematics Concepts for Teachers I
Development of basic ideas of arithmetic, algebra and geometry as appropriate for school teachers.
Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 75 or 76 or satisfactory score on Ohio State Math Placement Test.

106 Fundamental Mathematics Concepts for Teachers II
Continuation of 105.
Wi, Sp Qtrs. 5 cl. Prereq: 105 or written permission of dept.

107 Topics in Mathematics for Elementary Teachers
Further topics in mathematics selected by the instructors to broaden the mathematical perspectives of elementary teachers.
Au, Sp Qtrs. 5 cl. Prereq: 106 or written permission of dept.

108 Number and Algebraic Structures for Middle School Teachers
Concepts of arithmetic, including number systems, binary operations, combinatorial counting, and number theory. Generalized algebraic structures developed through number systems, matrices, and modulo arithmetic.
Au Qtr. 5 cl. Prereq: 150 or higher, or Math Placement Level L. Open only to middle childhood majors (Major Codes 283 and 187). Partially fulfills OSU mathematics requirements for middle school mathematics concentration.

109 Geometry and Measurement for Middle School Teachers
Geometrical concepts of definitions, postulates, congruence, similarity, coordinate geometry, transformations, and non-Euclidean geometry. Measurement concepts of units, conversion, irregular shapes, Pythagorean Theorem, and Cavalier’s Principle.
Su Qtr. 5 cl. Prereq: 108. Open only to middle childhood majors (Major Codes 283 and 187). Partially fulfills OSU mathematics requirements for middle school mathematics concentration.

110 Elements of Mathematical Modeling for Middle School Teachers
Mathematical modeling, tools, and applications of variables, functions and other relations, methods of solving equations, randomness, expected value, simulations, and binomial and geometric probabilities.
Au Qtr. 5 cl. Prereq: 109, Stat 145. Open only to middle childhood majors (Major Codes 283 and 187). Partially fulfills OSU mathematics requirements for middle school mathematics concentration.

Mathematics
111 Concepts of Calculus for Middle School UGRD 5

Teachers

Language, representations, informal and formal calculations, and applications of instantaneous rates and accumulation through derivatives and integrals.

Wi Qtr. 5 cl. Prereq: 150 or higher, or Math Placement Level L. Open only to middle childhood majors (Major Codes 283 and 187). Not open to students with credit for 117 or for 152 or 152.xx or higher. Partially fulfills OSU mathematics requirements for middle school mathematics concentration.

116 Excursions in Mathematics UGRD 5

Critical thinking and problem solving, with relevant topics met in everyday life; appropriate for non-physical sciences.

Su, Wi, Sр Qtrs. 5 cl. Prereq: 75 or 76 or 104 or satisfactory score on mathematics placement test. Not open to students with credit for 153 or 153.xx.

117 Survey of Calculus UGRD 5

An introduction to differential and integral calculus.

Au, Wi, Sр Qtrs. 5 cl. Prereq: 150 or Level L on Ohio State Math Skills Assessment or permission of dept. Not open to students with credit for 132 or 151 or 151.xx. This course is not designated for students pursuing majors in business or the sciences.

130 Mathematical Analysis for Business I UGRD 4

Equations, inequalities, absolute value, polynomial functions, matrices, applications to business

Su, Au, Wi, Sр Qtrs. 4 cl. Prereq: 104 or placement M or N on the OSU Math placement test, or written permission of department. Not open to students with credit for 150 or higher numbered mathematics course. This course is available for EM credit.

131 Mathematical Analysis for Business II UGRD 4

Differential calculus, limits, definition of derivative, calculation of derivatives, curve sketching, applications.

Su, Au, Wi, Sр Qtrs. 4 cl. Prereq: 130 or 148 or 150 or Math Placement Course Code L. Not open to students with credit for 151 or 151.xx or higher.

132 Mathematical Analysis for Business III UGRD 5

Integral calculus, indefinite integration, area and definite integrals, improper integrals, functions of several variables, maxima, minima

Su, Au, Wi, Sр Qtrs. 5 cl. Prereq: 131 or 151 or 151.xx. Not open to students with credit for 152 or 152.xx or higher.

140 Calculus with Review I UGRD 5

Review of polynomial and rational functions, difference quotients, limits, continuity, derivatives, chain rule, higher order derivatives, implicit differentiation, related rates.

Au, Wi, Sр Qtrs. 5 cl. Prereq: Course Code N placement and 4 or more units of college prep math including trigonometry, or written permission of dept. Not open to students with credit for 151 or 151.xx. The first part of a two-part sequence that consolidates the material of Math 148, 150, 151 or 151.xx. The follow up course is Math 141. Students who do not succeed in this course must go back to Math 148.

141 Calculus with Review II UGRD 5

Trigonometric review, differentiation of the trigonometric functions, review of exponential and logarithmic functions, mean value theorem, applications to curve sketching, applied maxima and minima problems.

Wi Qtr. 5 cl. Prereq: Grade of C- or better in 140. Not open to students with credit for 151 or 151.xx. The second of a two-part sequence that consolidates the material from 148, 150 and 151 or 151.xx. It introduces two courses and prepares students for 152 or 152.xx.

148 Algebra and Trigonometry and Their Applications UGRD 5

Applications from chemistry, physics and biology involving integer and rational exponents, solving and graphing linear and quadratic equations, systems of equations, trigonometry of acute angles, vectors and exponential equations.

Su, Au, Wi, Sр Qtrs. 4 cl. Prereq: 104 or satisfactory score on Ohio State Math Placement Test. Not open to students with credit for 150 or higher numbered mathematics course.

150 Elementary Functions UGRD 5

Inverse functions, logarithmic, exponential and trigonometric functions, and their graphs; complex numbers.

Su, Au, Wi, Sр Qtrs. 5 cl. Prereq: 148 or satisfactory score on Ohio State Math Placement Test or permission of dept. Not open to students with credit for 151, 151.xx, 161, 161.xx, 161.01H, or 193H. This course is available for EM credit.

151.01 Calculus and Analytic Geometry I UGRD 5

Limits, continuity, derivatives, Mean Value Theorem, extrema, curve sketching, related rates, differentiation of the trig, log, and exp functions.

Su, Wi, Sр Qtrs. 5 cl. Prereq: C- or better in 150 or satisfactory score on Ohio State Math Placement Test. Not open to students with credit for any version of 151 or 152 or 151.xx or 152.xx or higher; use of the Freshman Forgiveness Rule is restricted by this exclusion. GEC math and logical analysis course. This course is available for EM credit. Standard course.

151.02 Calculus and Analytic Geometry I UGRD 5

Limits, continuity, derivatives, Mean Value Theorem, extrema, curve sketching, related rates, differentiation of the trig, log, and exp functions.

Au Qtr. 5 cl. Prereq: C- or better in 150 or satisfactory score on Ohio State Math Placement Test. Not open to students with credit for any version of 151 or 152 or 151.xx or 152.xx or higher; use of the Freshman Forgiveness Rule is restricted by this exclusion. GEC math and logical analysis course. This course is available for EM credit. Reformed calculus emphasizing applications and group work.
161.01 Accelerated Calculus with Analytic Geometry I UGRD 5
Functions, limits and continuity, derivatives, applications of the derivative, the integral, inverse functions, techniques of integration, applications of integration. 161.01H (honors) may be available.
Au Qtr. 5 cl. Prereq: Course Code L placement and high school calculus experience or permission of dept. The sequence 161-162-263.xx covers calculus at an accelerated pace for students with superior algebraic and geometric skills, and with previous calculus experience. 161.01 assumes mastery of the computational aspects of polynomial and trigonometric differentiation and will concentrate on integral calculus. Standard course.

161.01H Accelerated Calculus with Analytic Geometry I UGRD 5
Functions, limits and continuity, derivatives, applications of the derivative, the integral, inverse functions, techniques of integration, applications of integration. 
Au Qtr. 5 cl. Prereq: Math 151.xx; honors program or permission of department or instructor. The sequence 161-162-263.xx covers calculus at an accelerated pace for students with superior algebraic and geometric skills, and with previous calculus experience. 161.01H assumes mastery of the computational aspects of polynomial and trigonometric differentiation and will concentrate on integral calculus. Standard course.

161.02 Accelerated Calculus with Analytic Geometry I UGRD 5
Functions, limits and continuity, derivatives, applications of the derivative, the integral, inverse functions, techniques of integration, applications of integration. 
Au Qtr. 5 cl. Prereq: Course Code L placement and high school calculus experience or permission of dept. Not open to students with credit for 161.xx or 152.xx. The sequence 161-162-263.xx covers calculus at an accelerated pace for students with superior algebraic and geometric skills, and with previous calculus experience. 161.02 assumes mastery of the computational aspects of polynomial and trigonometric differentiation and will concentrate on integral calculus. Open only to College of Engineering students.

162.01 Accelerated Calculus with Analytic Geometry II UGRD 5
Improper integrals; polynomial approximations and Taylor's theorem; infinite sequences and series; tests for convergence, vectors, lines and planes. 162.01H (honors) may be available.
Wi Qtr. 5 cl. Prereq: 161 or 161.xx or written permission of Math Counseling Office. Not open to students with credit for 153 or 153.xx or higher or 162 or 162.xx or higher. Standard course.

162.01H Accelerated Calculus with Analytic Geometry II UGRD 5
Improper integrals; polynomial approximations and Taylor's theorem; infinite sequences and series; tests for convergence, vectors, lines and planes. 
Wi Qtr. 5 cl. Prereq: Honors program; 161 or 161.xx or written permission of Math Counseling Office. Not open to students with credit for 153 or 153.xx or higher or 162 or 162.xx or higher. Standard course.

162.02 Accelerated Calculus with Analytic Geometry II UGRD 5
Improper integrals; polynomial approximations and Taylor's theorem; infinite sequences and series; tests for convergence, vectors, lines and planes. 
Au, Wi Qtr. 5 cl. Prereq: 161 or 161.xx or written permission of Math Counseling Office. Not open to students with credit for 153 or 153.xx or higher or 162 or 162.xx or higher. Only open to College of Engineering students.

187.01 Topics in Mathematics UGRD 2-5
An enrichment course for interested and capable students. 187.01H (honors) may be available.
Au Qtr. Prereq: Permission of dept. This course is graded S/U. Repeatable to a maximum of 10 cr hrs. 187.01H Topics in Mathematics UGRD 2-5
An enrichment course for interested and capable students.
Au Qtr. Prereq: Honors program or permission of department or instructor. Repeatable to a maximum of 10 or hrs. This course is graded S/U.

187.04 Topics in Mathematics UGRD 2-5
An enrichment course for interested and capable students. Calculus using computer algebra system either in designated lab and/or remote computer hook-up.
Au Qtr. Prereq: Permission of dept. Repeatable to a maximum of 10 or hrs. This course is graded S/U.

188 Invitation to Actuarial Science UGRD 1
Introduction to some basic ideas of life, health, and property and casualty insurance; presentations by practicing actuaries on aspects of the actuarial profession.
^ Sp Qtr. 1-2 cr. Prereq: 151, 151.xx, 161, 161.xx, 161.01H or, 190H; or permission of instructor. This course is graded S/U.

190H Elementary Analysis I UGRD 5
The first of an enriched honors calculus sequence designed to introduce students to the mathematical underpinnings of analysis.
Au Qtr. 5 cl. Prereq: Honors program or permission of department or instructor. 190H, 191H, and 264H substitute for 151, 151.xx, 152, 152.xx, 153, 153.xx, 254, 254.xx, and 151.

191H Elementary Analysis II UGRD 5
Continuation of 190H.
Wi Qtr. 5 cl. Prereq: 190H with a grade of C or better or written permission of Honors Committee chairperson.

212 History of Mathematics for Middle School Teachers UGRD 5
Historical development of concepts appropriate to middle childhood mathematics. A capstone course to bring together topics discussed in 108, 109, 110, 111 and Statistics 145. Sp Qtr. 5 cl. Prereq: 110, 111. Open only to middle childhood majors (Major Codes 283 and 187). Partially fulfills OSU mathematics requirements for middle school mathematics concentration.

254.01 Calculus and Analytic Geometry IV UGRD 5
Partial differentiation, Lagrange multipliers, multiple integrals, line integrals, and Green's theorem.
Su, Au, Wi, Sp Qtr. 5 cl. Prereq: 153 or 153.xx. Not open to students with credit for 254 or 254.xx or higher or 255 or 255.xx or higher; use of the Freshman Forgiveness Rule is restricted by this exclusion. This course is available for EM credit. Standard course.

254.02 Calculus and Analytic Geometry IV UGRD 5
Partial differentiation, Lagrange multipliers, multiple integrals, line integrals, and Green's theorem.
Au, Wi, Sp Qtr. 5 cl. Prereq: 153 or 153.xx. Not open to students with credit for 254 or 254.xx or higher or 255 or 255.xx or higher; use of the Freshman Forgiveness Rule is restricted by this exclusion. This course is available for EM credit. Reformulated calculus emphasizing applications and group work.

254.04 Calculus and Analytic Geometry IV UGRD 5
Partial differentiation, Lagrange multipliers, multiple integrals, line integrals, and Green's theorem.
Au, Wi, Sp Qtr. 5 cl. Prereq: 153 or 153.xx. Not open to students with credit for 254 or 254.xx or higher or 255 or 255.xx or higher; use of the Freshman Forgiveness Rule is restricted by this exclusion. This course is available for EM credit. Calculus using computer algebra system either in designated lab and/or remote computer hook-up.

255.01 Differential Equations and Their Applications UGRD 5
Basic concepts and methods in solving ordinary differential equations, first and second order, linear differential equations, series solutions, numerical methods, Laplace transforms, physical applications.
Su, Au, Wi, Sp Qtr. 5 cl. Prereq: 254 or 254.xx. Not open to students with credit for 255 or 255.xx or 415 or 415.xx.

255.04 Differential Equations and Their Applications UGRD 5
Basic concepts and methods in solving ordinary differential equations, first and second order, linear differential equations, series solutions, numerical methods, Laplace transforms, physical applications.
Wi, Sp Qtr. 5 cl. Prereq: 254 or 254.xx. Not open to students with credit for 255 or 255.xx or 415 or 415.xx.

263.01 Accelerated Calculus with Analytic Geometry III UGRD 5
Multivariable calculus (vector approach), line and surface integrals, vector differential operators. 263.01H (honors) may be available.
Sp Qtr. 5 cl. Prereq: 162 or 162.xx or written permission of Math Counseling Office. Not open to students with 263 or 263.xx.

263.02 Accelerated Calculus with Analytic Geometry III UGRD 5
Multivariable calculus (vector approach), line and surface integrals, vector differential operators. 
Sp Qtr. 5 cl. Prereq: 162 or 162.xx or written permission of Math Counseling Office. Not open to students with 263 or 263.xx.

264H Elementary Analysis III UGRD 5
Continuation of 191H; a rigorous treatment of multivariable calculus including gradients, multiple integrals, line and surface integrals, Green's theorem, the divergence theorem, and Stokes' theorem.
Sp Qtr. 5 cl. Prereq: 191H with a grade of C or better or written permission of Honors Committee chairperson.

283.01 Lectures in Number Theory UGRD 3-6
An intensive introduction to mathematics as problem-solving; experimentation, conjecture and proof; divisibility, quadratic fields, geometry of numbers. Lectures in Number Theory.
^ 5 for 8 wks. Repeatable to a maximum of 6 or hrs. Prereq: Written permission of instructor and performance on a take-home problem set.
294 Special Topics in Mathematics\hfill UGRD 2-5
Designed to give groups of able students an opportunity to pursue special studies not otherwise offered. 294H (honors) may be available.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 10 cr hrs.

345 Foundations of Higher Mathematics\hfill UGRD 4
Designed to prepare students for higher mathematics; an introduction to logic, proof techniques set theory, number theory, integers, real numbers. 
Au, Sp Qtrs. 4 cl. Prereq: 254 or 254.xx or equiv, or with written permission of dept. Intended primarily for math majors.

350 Introduction to Mathematical Biology\hfill UGRD 3
Introduction to quantitative and qualitative analysis of several mathematical models for biological problems.
Sp Qtr. 3 cl. Prereq: 255 or 255.xx or 415 or 415.xx or permission of instructor.

366 Discrete Mathematical Structures I\hfill UGRD 3
Mathematical formalization and reasoning, logic, and Boolean algebra; sets, functions, relations, recursive definitions, and mathematical induction; and elementary counting principles. 
Su (1st term), Au, Wi, Sp Qtrs. 3 cl. Prereq: 132 or 152.xx or permission of dept.

414 Differential Equations for Engineering\hfill UGRD 3
Applications
Introduction to the basic methods for solving ordinary and partial differential equations, and some applications.
* Sp Qtr. 3 cl. Prereq: 254 or 254.xx; concour: AeroEng 414; or permission of instructor. Not open to students with credit for 255 or 255.xx or 415 or 415.xx. This course is linked to AeroEng 414 where significant engineering applications will be presented. Students enrolled in this course must be simultaneously enrolled in AeroEng 414.

415.01 Ordinary and Partial Differential Equations\hfill UGRD 4
Ordinary, partial, linear, and nonlinear differential equations; Fourier series; boundary value problems; and Bessel functions.
Su, Au, Wi, Sp Qtrs. 4 cl. Prereq: 254 or 254.xx. Not open to students with credit for 255 or 255.xx or 415 or 415.xx. Standard course.

415.02 Ordinary and Partial Differential Equations\hfill UGRD 4
Ordinary, partial, linear, and nonlinear differential equations; Fourier series; boundary value problems; and Bessel functions. 
Au, Sp Qtrs. 4 cl. Prereq: 254 or 254.xx. Not open to students with credit for 255 or 255.xx or 415 or 415.xx. Only open to College of Engineering students.

415.04 Ordinary and Partial Differential Equations\hfill UGRD 4
Ordinary, partial, linear, and nonlinear differential equations; Fourier series; boundary value problems; and Bessel functions.
Wi, Sp Qtrs. 4 cl. Preq: 254 or 254.xx. Not open to students with credit for 255 or 255.xx or 415 or 415.xx.

487 Advanced Problem Solving\hfill UGRD 2
An advanced enrichment course for interested and capable students.
Au Qtr. 2 cl. Prereq: Permission of dept. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

504 History of Mathematics\hfill UGRD 5
Development of mathematics from primitive origins to present form; topics include: development of arithmetic, algebra, geometry, trigonometry, and calculus.
Su, Sp Qtrs. 5 cl. Prereq: Math major or grad standing in E&M/TL; and 507, 520H, 568, 571, or 580; or equiv with written permission of dept.

507 Advanced Geometry\hfill UGRD 5
Advanced topics from Euclidean Geometry.
Au, Wi Qtrs. 5 cl. Preq: 264H or 345 or grad standing.

512 Partial Differential Equations and Boundary Value Problems\hfill UGRD 3
Fourier series, orthogonality relations, vibrating string, steady state heat, Laplace transform, and applications. 
Su (1st term), Au, Wi, Sp Qtrs. 3 cl. Prereq: 255 or 255.xx or 415 or 415.xx or equiv with written permission of dept.

513 Vector Analysis for Engineers\hfill UGRD 3
Vector algebra, vector operators, line integrals, vector integral theorems, curvilinear coordinates; applications.
Au, Wi Qtrs. 3 cl. Preq: 254 or 254.xx. Not open to students with credit for 551.

514 Complex Variables for Engineers\hfill UGRD 3
Introduction to complex variables, analytic functions, complex integral theorems, power series, residues, conformal mapping.
Sp Qtr. 3 cl. Preq: 254 or 254.xx or equiv with written permission of dept. Not open to students with credit for 552 or 564.

520H Linear Algebra\hfill UGRD 5
Au Qtr. 5 cl. Preq: 263H with a grade of C or better, or 264H with a grade of C or better, or written permission of Honors Committee chairperson.

521H Differential Equations\hfill UGRD 5
Ordinary, linear and nonlinear differential equations, existence and uniqueness theorems, Fourier series, boundary value problems, systems, Laplace transforms, phase space, stability, and periodic orbits.
Wi Qtr. 5 cl. Preq: 520H with a grade of C or better or written permission of Honors Committee chairperson.

522H Complex Analysis\hfill UGRD 5
Analytic functions, Cauchy integral theory, residue calculus, series representations, and conformal mapping.
Sp Qtr. 5 cl. Preq: 521H with a grade of C or better or written permission of Honors Committee chairperson. The sequence 520H-521H replaces 522H for 558; 255 or 255.xx or 415 or 415.xx: 514 or 552.

530 Probability\hfill UGRD 3
Combinatorial probability, random variables, independence, expectations, variance.
Au Qtr. 3 cl. Preq: 254 or 254.xx.

531H Rigorous Probability\hfill UGRD 5
A rigorous honors course on probability theory with special attention to the history of the subject and continuing connections with other areas of mathematics.
Au Qtr. 3 1.5-hr cl. Preq: 264H or permission of instructor.

532 Mathematical Foundations of Actuarial Science\hfill UGRD 3
Problem workshop for applications of calculus and probability to actuarial science and risk management.
Sp Qtr. 2 1.25-hr cl. Preq: 530 or Stat 420 or 520, or permission of instructor.

540H Geometry and Calculus in Euclidean Spaces and on Manifolds I\hfill UGRD 5
The topology of n-dimensional Euclidean space, differentiation of vector-valued functions, inverse and implicit function theorems, Riemann and Lebesgue integration in n-dimensional Euclidean space.
Wi Qtr. 5 cl. Preq: 520H, or 263H and 568, or permission of instructor. Offered in odd-numbered years only.

541H Geometry and Calculus in Euclidean Spaces and on Manifolds II\hfill UGRD 5
Curves and line integrals in n-dimensional Euclidean space, tensor and exterior algebras, differential forms, integration on manifolds, divergence and Stokes' theorems, and applications.
Sp Qtr. 5 cl. Preq: 540H or permission of instructor. Offered in odd-numbered years only.

547 Introductory Analysis I\hfill UGRD 3
547-548-549 is an integrated sequence in advanced calculus covering sequences, limits, continuous functions, differentiation, Riemann integral; infinite series, sequences and series of functions, Taylor series, improper integrals.
Au, Wi Qtrs. 3 cl. Preq: 345 or 345H with written permission of dept.

548 Introductory Analysis II\hfill UGRD 3
Continuation of 547.
Wi, Sp Qtrs. 3 cl. Preq: 547 or equiv with written permission of dept.

549 Introductory Analysis III\hfill UGRD 3
Continuation of 548; the Riemann-Stieljes integral; an introduction to the calculus of several variables.
Au, Sp Qtrs. 3 cl. Preq: 548 or equiv with written permission of dept.

551 Vector Analysis\hfill UGRD 5
Vector operations in three dimensions, vector operators, surface area, the theorems of Green and Stokes, the divergence theorem; applications.
Sp Qtr. 5 cl. Preq: 254 or 254.xx. Not open to students with credit for 513.

552 Introduction to the Theory of Functions of a Complex Variable\hfill UGRD 5
Topics discussed include power series expansions, the formula of Cauchy, residues, conformal mappings, and elementary functions in the complex domain.
* Su Qtr. 5 cl. Preq: 254 or 254.xx. Not open to students with credit for 514.

556 Differential Equations I\hfill UGRD 3
Systems of linear, first-order differential equations, existence and uniqueness theorems, numerical methods, qualitative theory (phase plane analysis, linearization, stability, limit cycles), and physical applications.
Wi Qtr. 3 cl. Preq: 265, preq or concour 572.

566 Discrete Mathematical Structures II\hfill UGRD 3
(Su term), Wi, Sp Qtrs. 3 cl. Preq: 366 or permission of dept.

568 Introductory Linear Algebra\hfill UGRD 3
The n-dimensional Euclidean space and its subspaces; matrices as mappings; matrix algebra; systems of equations; determinants; dot product; geometric interpretations.
Su (1st term), Au, Wi, Sp Qtrs. 3 cl. Preq: 254 or 254.xx or equiv with written permission of dept. Not open to students with credit for 571.
288 Mathematics

571 Linear Algebra for Applications I UGRD 3
Linear systems of equations; vector spaces, matrices, linear operators; inner products, projections and least squares, approximations or eigenvalue problems; applications. Su (1st term), Au, Wi, Sp Qtr. 3 cl. Prereq: 254 or 254.xx. Not open to students with credit for 601.

572 Linear Algebra for Applications II UGRD 3
The eigenvalue problem or inner product spaces, projections and least squares approximation; classification of operators and quadratic forms; applications. Su (2nd term), Wi, Qtrs. 3 cl. Prereq: 571 or written permission of dept. Not open to students with credit for 601.

573 Elementary Number Theory UGRD 5
Utilization of concrete examples to introduce concepts of modern algebra: prime numbers, congruences, Diophantine equations, elementary combinatory analysis. Sp Qtr. 5 cl. Prereq: 264H or 345 or grad standing or permission of dept. Offered in odd-numbered years only.

575 Combinatorial Mathematics and Graph Theory UGRD 5
Some classical puzzles of recreational mathematics; matching theory, graph theory, network flows, and optimization; enumeration techniques; combinatorial designs and coding theory. Wi, Sp Qtrs. 5 cl. Prereq: 568, 571, 520H, or written permission of dept. Offered SP even years only.

576H Number Theory through History I UGRD 5
The integrated honors sequence 576H-577H includes elementary analytic and algebraic number theory and traces its unifying role in development of mathematics through history. Wi Qtr. 3 80-min cl. Prereq: 19H AND 520H, or permission of dept. Offered in even-numbered years only.

577H Number Theory through History II UGRD 5
Continuation of 576H. Sp Qtr. 3 80-min cl. Prereq: 576H or permission of dept. Offered in even-numbered years only.

578 Discrete Mathematical Models UGRD 5
Analysis and solution of various applied problems using discrete mathematical models; methods used include graph theory, linear optimization, Markov chains and queues. Sp Qtr. 5 cl. Prereq: 530, Stat 420, 427, 520, or equiv; 568 or 571 or 520H; CSE 201, 202 or 221 or EnGraph 167.

580 Algebra I UGRD 3
The integrated algebra sequence 580-581-582 includes elementary number theory, group theory, vector spaces, and linear transformations, field theory. Au, Wi Qtrs. 3 cl. Prereq: 345 and (568 or 571 or 520H), or permission of dept. Not open to students with credit for 590H or 670.

581 Algebra II UGRD 3
Continuation of 580. Wi, Qtrs. 3 cl. Prereq: 580.

582 Algebra III UGRD 3

585 Introduction to Coding Theory and Design Theory UGRD 3
Introduction to error-correcting codes and block designs, and their applications. Au Qtr. 3 cl. Prereq or concur: 582 or 592H or permission of instructor.

588 Practicum in Actuarial Science UGRD 4
Presentations by practicing actuaries on topics drawn from their fields of expertise; oral presentations by students on selected topics in actuarial science. Sp Qtr. 5 cl. Prereq: 3rd yr standing and completion of second writing course. Open only to actuarial science majors.

589 Introduction to Mathematical Finance UGRD 3
Introduces students to the basic mathematics used in financial asset pricing. Wi, Qtrs. 2 1.5-hr cls. Prereq: 345; 530 or Stat 420; or permission of instructor.

590H Algebraic Structures I UGRD 5
Integers, congruence relations, structure preserving maps, topics from groups, rings, modules, vector spaces, fields. Au Qtr. 5 cl. Prereq: 522H with a grade of C or better or written permission of Honors Committee chairperson. The sequence 590H-591H-592H substitutes for the sequence 580-581-582.

591H Algebraic Structures II UGRD 5
A continuation of 590H. Wi Qtr. 5 cl. Prereq: 590H with a grade of C or better or written permission of Honors Committee chairperson.

592H Algebraic Structures III UGRD 5
Continuation of 591H; further topics in group and field theory and their interrelation; Galois theory. Sp Qtr. 5 cl. Prereq: 591H with a grade of C or better or written permission of Honors Committee chairperson.

593 Individual Studies UGRD 2-5
Individual Studies. Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

594 Group Studies UGRD 2-5
Designed to give groups of advanced undergraduate students an opportunity to pursue special studies not otherwise offered. 594H (honors) may be available. Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

601 Mathematical Principles in Science I UGRD 3
Linear algebra in finite dimensions, abstract vector spaces, linear transformations, fundamental subspaces; complex inner product spaces. Au Qtr. 3 cl. Prereq: 568 or 571 or equiv.

602 Mathematical Principles in Science II UGRD 3

603.01 Mathematical Principles in Science III, A UGRD 3
An introduction to partial differential equations (pdes) that arise in the mathematical and engineering sciences. General properties and methods of solution of hyperbolic, parabolic, and elliptic pdes that arise in science and engineering. ^ Prereq: 415 or 415.xx or equiv, and 602.

603.02 Mathematical Principles in Science III, B UGRD 3
An introduction to partial differential equations (pdes) that arise in the mathematical and engineering sciences. Mathematical principles and methods in the physical and engineering sciences including Fourier theory, Green's function theory, study of pdes illustrated mainly by the Helmholtz equation. Prereq: 415 or 415.xx or equiv, and 602.

606 Introduction to Numerical Analysis of Partial Differential Equations UGRD 3
Classification of partial differential equations; finite difference methods for elliptic, parabolic and hyperbolic PDE's; stability, convergence, error estimates; introduction to finite elements. Sp Qtr. 3 cl. Prereq: 512 and 572 or equiv with permission of instructor.

607 Essentials of Numerical Analysis UGRD 5
Standard problems of numerical analysis, error analysis, and actual computational algorithms. Wi Qtr. 3 2-hr cl. Prereq: (568 or 571 or 520H) and (255 or 255.xx or 415 or 415.xx or 521H), or permission of the Department.

609 Applications of Mathematical Software UGRD 3
Familiarize mathematicians majors with some mathematical software encountered in a university setting: Matlab, Maple or Mathematica and LaTex. Su Qtr. 3 cl. Prereq: 255 or 255.xx or 415 or 415.xx or 521H, and 568 or 571 or 520H, and grad standing or permission of instructor. Open only to math majors.

610.01 Topics in Math for Teachers: Geometry UGRD 1-5
Special topics in mathematics for teachers at the secondary level: Geometry. ^ Prereq: 1 yr teaching experience or permission of instructor. Designed for in-service teachers. Repeatable to a maximum of 10 cr hrs.

610.02 Topics in Math for Teachers: Algebra UGRD 1-5
Special topics in mathematics for teachers at the secondary level: Algebra. ^ Prereq: 1 yr teaching experience or permission of instructor. Designed for in-service teachers. Repeatable to a maximum of 10 cr hrs.

610.03 Topics in Math for Teachers: Approximation Methods UGRD 1-5
Special topics in mathematics for teachers at the secondary level: Approximation Methods. ^ Prereq: 1 yr teaching experience or permission of instructor. Designed for in-service teachers. Repeatable to a maximum of 10 cr hrs.

610.04 Topics in Math for Teachers: Probability UGRD 1-5
Special topics in mathematics for teachers at the secondary level: Probability. ^ Prereq: 1 yr teaching experience or permission of instructor. Designed for in-service teachers. Repeatable to a maximum of 10 cr hrs.

610.25 Topics in Math for Teachers: Special Projects UGRD 1
Special topics in mathematics for teachers at the secondary level: Special Projects. ^ Prereq: 1 yr teaching experience or permission of instructor. Prereq: Enrollment in mathematics MA specialization or written permission of dept. Designed for in-service teachers. This course is graded S/U.

615 Applied Differential Equations I UGRD 3
Modeling by differential equations of physical and biological processes. Topics include explicit solutions, existence and uniqueness, n-dimensional linear ODE systems, geometric theory, and bifurcation analysis. Au Qtr. 3 cl. Prereq: 255 and 568 or permission of instructor.

616 Applied Differential Equations II UGRD 3
Introduction to the basic types of partial differential equations and their solutions with applications to physical and biological processes; methods of separation of variables and Fourier transform. Wi Qtr. 3 cl. Prereq: 615 or permission of instructor.

617 Applied Differential Equations III UGRD 3
Topics in applied ODEs and PDEs. Possible topics include solution of the Dirichlet problem in general domains, integral equations, nonlinear PDEs, chaotic dynamics, singular perturbations. Sp Qtr. 5 cl. Prereq: 816 or permission of instructor.
618 Theory of Interest UGRD 4
Mathematical techniques of use in analyzing financial transactions involving interest: measurement of interest, force of interest, annuities-certain, applications to actuarial science.
Au Qtr. 2 2-hr cl. Prereq: 624 or 263.xx or 263.01H or 264H or permission of Math Department. Open only to Actuarial Science majors or Mathematics majors.

630 Actuarial Mathematics I UGRD 4
Problem workshop for applications of economics, finance, and theory of interest to actuarial science.
Au Qtr. 2 2-hr cl. Prereq: 530 or Stat 420 or 520; preq or concur: Math 618. Open only to Actuarial Majors or Mathematics Majors.

631 Actuarial Mathematics II UGRD 4
Actuarial models and their application to insurance and other financial risks.
Wi Qtr. 2 2-hr cl. Prereq: 630 or permission of Department. Open only to Actuarial Science or Mathematics majors.

632 Actuarial Mathematics III UGRD 4
Actuarial models and their application to insurance and other financial risks.
Sp Qtr. 2 2-hr cl. Prereq: 618 or permission of Department. Open only to Actuarial Science or Mathematics majors.

640 General Topology GRAD 3
Open, closed sets; interior, closure; boundaries of sets; continuity; product, quotient, subspace topologies; metric spaces; connectedness; compactness; separability axioms; countability axioms; metrization theorems; Tychonoff theorem.
Au Qtr. 3 cl. Prereq: Math grad status or permission of instructor with 547 and equiv. Not open to students with credit for 655.

641 Elementary Low-Dimensional Topology GRAD 3
Knot projections; Reidemeister moves; classification of surfaces; Seifert surfaces and matrices; Knot invariants; genus, colorings, group labelings, determinant, signature, Alexander polynomial, braid index, Jones polynomial.
Wi Qtr. Prereq: Mathematics grad status or permission of instructor with Math 568 or equivalent

642 Geometry of Curves and Surfaces GRAD 3
Parametrized curves, surfaces in R2, R3; curvature of curves; rotation number; UmIlaufzatz; Meusnier theorem; hypersurfaces; curvature types; Gauss frame, Gauss-Codazzi-Mainardi equations; Theorema Egregium.
Sp Qtr. Prereq: Math grad status or permission of instructor with Math 254 and (Math 547 or Math 190H).

647 Set Theory GRAD 3
Axiomatic set theory, transfinite induction and theory of ordinals, order type of characterizations cardinal arithmetic and structure, and principles of choice.
Au Qtr. 3 cl. Prereq: 547 or 580 or equiv with permission of dept.

648 Mathematical Logic I GRAD 3
The syntax and semantics of sentential logic and first order logic; completeness and compactness theorems for first order logic.
Wi Qtr. 3 cl.

649 Mathematical Logic II GRAD 3
Continuation of 648; decidability and undecidability of systems and structures for number theory; Godel's incompleteness theorems and recursive functions; second order logic.
Sp Qtr. 3 cl. Prereq: 648 or permission of instructor.

650 Principles of Mathematical Analysis GRAD 5
Riemann-Stieljes integral; uniform convergence and interchange of limit processes, special functions, Fourier series. ^ Su Qtr. 5 cl. Prereq: 547 or permission of Graduate Advising Committee.

651 Introduction to Real Analysis I GRAD 5
Real numbers, infinite sequences, and series.
Au Qtr. 5 cl. Prereq: permission of dept.

652 Introduction to Real Analysis II GRAD 5
Continuous functions, differentiable functions and functions of bounded variation; Riemann-Stieljes integral.
Wi Qtr. 5 cl. Prereq: 651.

653 Introduction to Real Analysis III GRAD 5
Measurable sets and functions, elementary theory of the Lebesgue integral.
Sp Qtr. 5 cl. Prereq: 652.

654 Complex Variables GRAD 3
Complex arithmetic, geometry, conformal mapping, analytic functions, and residues.
Su Qtr. 3 cl. Prereq: Permission of dept. Not open to students with credit for 514 or 552. Recommended primarily for grad students in science and engineering.

655 Elementary Topology I GRAD 5
Continuity, compactness, product spaces, quotient spaces, connectedness in metric and general topological spaces, surface manifolds, cell complexes.
Au Qtr. 5 cl. Prereq: Permission of dept.

656 Elementary Topology II GRAD 5
Continuation of 655; the fundamental group and covering spaces.
Wi Qtr. 5 cl. Prereq: 655.

657 Elementary Topology III GRAD 5
Continuation of 655; homology.
Sp Qtr. 5 cl. Prereq: 656.

660 Introductory Complex Analysis GRAD 5
A beginning graduate course in complex analysis for doctoral students in the Department of Mathematics.
Su Qtr. 5 cl. Prereq: 548 or equiv or math grad status. Not open to students with credit for 654. Designed primarily for math graduate students, emphasizing rigorous proofs.

665 Modern Mathematical Methods in Relativity GRAD 4
Theory I
Geometry in Minkowski space-time; physical interpretations; tensors; exterior calculus; manifolds; Lie derivatives; parallel transport; torsion; curvature; Cartan's two structural equations; Einstein Field equations.
Wi Qtr. 4 cl. Prereq: 254 or 254.xx and Physics 133 or equiv with permission of dept.

666 Modern Mathematical Methods in Relativity GRAD 4
Theory II
Fluid dynamics, Hamilton-Jacobi theory in curved geometries; geometry and dynamics of homogeneous cosmologies; black holes; local-global properties; entropy; gravitational collapse; space-time symmetries.
Sp Qtr. 4 cl. Prereq: 665 or equiv.

667 Introduction to the Mathematics of Cryptography GRAD 3
Introduction to cryptography including public key and RSA, discrete logarithms, Diffie-Hellman, ElGamal; elliptic curve methods, and signature schemes.
^ Su Qtr. 8 weeks, 3-40 minute classes. Prereq: 582 or 592H or permission of instructor.

669 Introduction to Number Theory GRAD 5
Basic concepts of divisibility, congruence, reciprocity, and prime roots as introduction to algebra with emphasis on techniques of proof.
Su Qtr. 5 cl. Prereq: 254 or 254.xx or equiv.

670 Algebra I GRAD 5
Elementary theory of groups, permutation groups, Polya theory of counting, rings and ideals, polynomials.
Au Qtr. 5 cl. Prereq: Permission of dept.

671 Algebra II GRAD 5
Continuation of 670; vector spaces, linear transformations, canonical forms for matrices, linear programming, orthogonality.
Wi Qtr. 5 cl. Prereq: 670 or permission of dept.

672 Algebra III GRAD 5
Continuation of 671; quadratic forms, finite fields, various applications.
Sp Qtr. 5 cl. Prereq: 671 or permission of dept.

674 Survey of Combinatorial Mathematics GRAD 4
Enumeration, equivalence relations, generating functions, graph theory, optimization, and combinatorial designs.
Su Qtr. 4 cl. Prereq: 568 or 571 or grad standing.

683 Topics in Number Theory and Algebra GRAD 4
Joint creative problem activity through daily problem solving sets in number theory.
Su Qtr. 4 cl. Prereq: Permission of instructor.

693 Individual Studies GRAD 1-5
Individual conferences, assigned readings, and reports on minor investigations.
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 20 or hrs. This course is graded S/U.

694 Group Studies GRAD 2-5
Designed to give groups of students an opportunity to pursue special studies not otherwise offered.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 or hrs.

701 Mathematical Methods in Science GRAD 5
Introduction to tensor analysis with applications to geometry; elements of the calculus of variations with applications to physical problems.
Sp Qtr. 3 1.5-hr cl. Prereq: 601 or equiv or permission of dept.

705 Special Functions GRAD 3
Power series developments, asymptotic expansion, gamma functions, cylindrical functions, spherical harmonics, orthogonal polynomials, hypergeometric functions, theta functions, elliptic functions and integrals, numerical techniques.
Wi Qtr. 3 cl. Prereq: 601 and 602.

707 Numerical Methods in Scientific Computing I GRAD 3
Numerical solution of dynamical systems and evolution equations, linear and nonlinear systems, boundary value problems, bifurcation diagrams, form fit of data, interpolation, and approximation theory.
Au Qtr. 3 cl. Prereq: 255 or 255.xx or 415 or 415.xx, 572 or equiv and working knowledge of Fortran, or written permission of instructor.

708 Numerical Methods in Scientific Computing II GRAD 3
Continuation of 707; numerical quadrature, integral equations, iterative procedures, multi-grid techniques, computation of eigenvalues and eigenvectors, Hopf bifurcation, and optimization.
Wi Qtr. 3 cl. Prereq: 707.
290 Mathematics

709 Numerical Methods in Scientific Computing III GRAD 3
Numerical solution of ordinary differential equations, consistency, stability and convergence, reaction-diffusion equations, phase diagrams, domains of attraction, strange attractors, and chaos.
Sp Qtr. 3 cl. Prereq: 708.

712 Applied Functional Analysis I GRAD 3
Advanced linear algebra; introduction to normed and Hilbert spaces; projections and bounded operators; emphasis on matrix and function space applications.
Au Qtr. 3 cl. Prereq: 653 and 671, or 601 and 602, or permission of instructor. Not open to students with credit for 857

713 Applied Functional Analysis II GRAD 3
Dual spaces, bilinear functionals, compact operators; Sobolev norms, applications to finite elements and integral equations.
Wi Qtr. 3 cl. Prereq: 712 or permission of instructor. Not open to students with credit for 857

714 Applied Functional Analysis III GRAD 3
Spectral theory of linear operators, distribution theory, and applications.
Sp Qtr. 3 cl. Prereq: 713 or permission of instructor. Not open to students with credit for 857

715 Differential Equations I GRAD 3
Linear and non-linear systems of ordinary differential equations; phase plane analysis; stability, bifurcation, and chaos.
Au Qtr. 3 cl. Prereq: 255 or 255.xx, 572, and 652; or permission of instructor.

716 Differential Equations II GRAD 3
Partial differential equations of mathematical physics, classification, characteristics; Sturm-Liouville theory, separation of variables.
Wi Qtr. Prereq: 514, 653, and 715; or permission of instructor.

717 Differential Equations III GRAD 3
Eigenfunction expansions, special functions, Green’s functions, Fourier and Laplace transforms.
Sp Qtr. 3 cl. Prereq: 514 and 716, or permission of instructor.

722 Theory of Probability I GRAD 4
Measure and integration; random variables; independence; convergence in probability, almost everywhere, and in the mean; conditional probability and expectation.
Au Qtr. 3 cl. Prereq: 653. Not open to students with credit for Stat 722. Cross-listed in Statistics

723 Theory of Probability II GRAD 4
Weak convergence; characteristic functions; central limit theorems; random walks; introduction to martingales.

724 Theory of Probability III GRAD 4
Continuation of 723.
Sp Qtr. 4 cl. Prereq: 723.

727 Scientific Computing Laboratory I GRAD 1
Designed to teach the computational tools required to write and use numerical codes to study physical systems.
Au Qtr. 1-2 hr cl. Prereq: A good working knowledge of FORTRAN (or another high-level language); concour: 707.

728 Scientific Computing Laboratory II GRAD 1
Designed to teach the computational tools required to write and use numerical codes to study physical systems.
Wi Qtr. 1-2 hr cl. Prereq: 727; concour: 708.

729 Scientific Computing Laboratory III GRAD 1
Designed to teach the computational tools required to write and use numerical codes to study physical systems.
Sp Qtr. 1-2 hr cl. Prereq: 728; concour: 709.

735 Seminar in Teaching College Mathematics for International Graduate Students GRAD 3
Preparation of international graduate students for the teaching of college level mathematics courses.
Su Qtr. 3-2 hr cl. Prereq: Permission of Graduate Advising Committee. This course is graded S/U.

736 Seminar in Teaching College Mathematics for Domestic Graduate Students GRAD 1-3
Preparation for teaching lower-division mathematics courses.
Su Qtr. 3-2 hr cl. Prereq: Permission of Graduate Advising Committee. This course is graded S/U.

745 Advanced Mathematical Logic I GRAD 3
Basic proof theory and model theory; completeness, interpolation and definability theorems, elimination of quantifiers, compactness, Lowenheim-Skolem Theorems, elementary extensions, and categoricity.
Au Qtr. 3 cl. Prereq: 649 or permission of instructor.

746 Advanced Mathematical Logic II GRAD 3
Incompleteness and undecidability; basic recursion theory; Turing machines, Church’s thesis, recursive and recursively enumerable sets, Turing degrees, and the arithmetical hierarchy.
Wi Qtr. 3 cl. Prereq: 745 or permission of instructor.

747 Advanced Mathematical Logic III GRAD 3
Basic axiomatic set theory; Zermelo-Frankel set theory, the cumulative hierarchy, ordinals and cardinals, constructibility, and forcing.
Sp Qtr. 3 cl. Prereq: 746 or permission of instructor.

750 Real Analysis I GRAD 5
Relative extremes in partial orders; additive and countable additive set functions; extensions of set functions; integration, differentiation, applications.
Au Qtr. 5 cl. Prereq: 653.

751 Real Analysis II GRAD 5
Continuation of 750.
Wi Qtr. 5 cl. Prereq: 750.

752 Real Analysis III GRAD 5
Continuation of 751.
Sp Qtr. 5 cl. Prereq: 751.

753 Complex Analysis I GRAD 5
Families of holomorphic and meromorphic functions, geometrical methods of the theory of functions, conformal transformations; including the Cauchy integral theorem, Riemann’s theorem, and Riemann mapping theorem.
Au Qtr. 5 cl. Prereq: Math 653, and Math 660 or equivalent.

754 Complex Analysis II GRAD 5
Analytic continuation, general analytic functions, algebraic, entire, elliptic, the gamma and zeta function, Dirichlet’s series, Picard’s theorems, Mittag-Leffler’s theorem, Stirling’s formula.
Wi Qtr. 5 cl. Prereq: 753.

756 Introductory Algebraic Topology GRAD 4
CW-complexes; simplicial complexes; manifolds; homotopy type; ENRs; operations on spaces; fundamental group; circle group; applications; van Kampen theorem; universal covering spaces; classification; Deck transformations.
Au Qtr. Prereq: Math graduate status or permission of instructor with (Math 640 or equivalent) and (Math 680, Math 550H Math 670 or equivalent). Not open to student with credit for 656.

757 Algebraic Topology I: Homology Theory GRAD 4
Simplicial homology; singular homology; long exact sequence of pairs; naturality properties; Excision; Mayer-Vietoris; applications; cellular homology; axioms and equivalences; Euler characteristic; Hurewicz map.
Wi Qtr. Prereq: Math 756 and Math 656. Not open to students with credit for Math 657.

758 Algebraic Topology II: Cohomology Theory GRAD 4
Cochain complexes, Ext functor, universal coefficient theorems, cup, cap, and cross products; cohomology rings; naturality; Kunneth formulae; manifolds; local orientations; Poncare, Lefschetz, and Alexander duality.
Sp Qtr. Prereq: Math 757 or equivalent. Not open to students with credit for Math 860.

765 Differentiable Manifolds GRAD 4
Smooth manifolds; vector bundles; vector fields; flows; differential operators; Lie and exterior derivative; Poincare Lemma; Darboux theorem; foliations; forms; Frobenius theorem; Lie groups; Stoke’s theorem.
Wi Qtr. Prereq: Math 756 or equivalent.

766 Introductory Riemannian Geometry GRAD 4
Riemannian metric; covariant derivatives; Levi-Civita connection; parallel transport; geodesics; exponential map; Gauss Lemma; curvature; Jacobi fields; Bonnet-Myers; Synge-Weinstein; Hopf-Rinow; Rauch comparison.
Sp Qtr. Prereq: Math 765 or equivalent.

767 Introduction to the Theory of Approximation I GRAD 4
Approximation by polynomials and trigonometric polynomials, Chebyshev’s theory of best approximation and its generalizations; interpolation processes and mechanical quadrature; orthogonal polynomials and elements of harmonic analysis.
Au Qtr. 4 cl. Prereq: 653 or equiv with permission of dept.

768 Introduction to the Theory of Approximation II GRAD 4
A continuation of 767.
Wi Qtr. 4 cl. Prereq: 767 or equiv with permission of dept.

770 Abstract Algebra I GRAD 5
Permutation groups, solvable groups, composition series, polynomial rings, unique factorization domains, canonical forms, bilinear forms, free modules, tensor products, Galois theory, algebraic closure, transcendental extensions.
Au Qtr. 5 cl. Prereq: 672 or equiv with permission of instructor.

771 Abstract Algebra II GRAD 5
A continuation of 770.
Wi Qtr. 5 cl. Prereq: 770 or equiv with permission of dept.

772 Abstract Algebra III GRAD 5
A continuation of 771.
Sp Qtr. 5 cl. Prereq: 771 or equiv with permission of dept.

775 Combinatorics and Graph Theory I GRAD 5
Transversal theory, network flows, matroids, linear programming, Ramsey theory.
Au Qtr. 5 cl. Prereq: 762.
776 Combinatorics and Graph Theory II GRAD 5
Combinatorial designs and geometries, difference sets, orthogonal Latin squares, coding theory, enumeration theory including Mobius inversion, Polya theory, and generating functions.
Wi Qtr. 2 cl. Prereq: 775.

777 Combinatorics and Graph Theory III GRAD 5
Planar graphs and embeddings in surfaces, graph connectivity, algebraic graph theory.
Sp Qtr. 5 cl. Prereq: 778.

780 Number Theory I GRAD 3
Algebraic number theory.
Au Qtr. 3 cl. Prereq: 772.

781 Number Theory II GRAD 3
Diophantine equations.
Wi Qtr. 3 cl. Prereq: 780.

782 Number Theory III GRAD 3
Analytic number theory.
Sp Qtr. 3 cl. Prereq: 781.

783H Honors Research UGRD 3-5
A program of reading and research for each student with individual conferences, reports, and honors thesis.
Su, Au, Wi, Sp Qtrs. arr cl. Prereq: 4th yr standing with a cumulative pt/hr ratio of 3.50 in math; permission of instructor under whose supervision the work is to be completed and of the ASC Honors Committee. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

787.01 Graduate Problem Seminars: Problems in Abstract Algebra GRAD 1-3
Topics helpful in problem solving in fundamental areas of mathematics; practice with problems in a specific area of mathematics: Problems in Abstract Algebra.
Su Qtr. Prereq; Permission of Graduate Advising Committee. Repeatable to a maximum of 9 cr hrs.

787.03 Graduate Problem Seminars: Problems in Real Analysis GRAD 3
Topics helpful in problem solving in fundamental areas of mathematics; practice with problems in a specific area of mathematics: Problems in Real Analysis.
Au Qtr. Prereq; Permission of Graduate Advising Committee. Repeatable to a maximum of 9 cr hrs.

804 Applied Complex Variables and Asymptotics I GRAD 3
Methods of complex variables.
Au Qtr. 3 cl. Prereq: 653, 654, and 717; or permission of instructor.

805 Applied Complex Variables and Asymptotics II GRAD 3
Asymptotic methods and their application to ordinary differential equations.
Wi Qtr. 3 cl. Prereq: 804.

806 Applied Complex Variables and Asymptotics III GRAD 3
Asymptotic and complex variable methods applied to linear and nonlinear partial differential equations.
Sp Qtr. 3 cl. Prereq: 805.

807 Numerical Solution of Partial Differential Equations I GRAD 3
Finite difference methods for parabolic and hyperbolic partial differential equations.
Au Qtr. 3 cl. Prereq: 602 or 717, 709, and Fortran experience; or permission of instructor.

808 Numerical Solution of Partial Differential Equations II GRAD 3
Continuation of 807.
Wi Qtr. 3 cl. Prereq: 807.

809 Numerical Solution of Partial Differential Equations III GRAD 3
Special topics in the numerical solution of partial differential equations.
Sp Qtr. 3 cl. Prereq: 808.

820 Ordinary Differential Equations I GRAD 3
Modern theory of ordinary differential equations; stability, asymptotic analysis, Lyapunov exponents, stable manifolds, perturbation methods, and bifurcation theory.
Au Qtr. 3 cl. Prereq: 715 or permission of instructor.

821 Ordinary Differential Equations II GRAD 3
Continuation of 820; differential equations on manifolds, structural stability, integrable and nonintegrable systems, chaos and strange attractors, applications.
Wi Qtr. 3 cl. Prereq: 820.

822 Ordinary Differential Equations III GRAD 3
Continuation of 821.
Sp Qtr. 3 cl. Prereq: 821 or permission of instructor.

835 Partial Differential Equations I GRAD 3
First order PDE's, theory of characteristics, second order PDE's, classifications, standard methods of solution; nonlinear equations.
Wi Qtr. 3 cl. Prereq: 717 or permission of instructor.

836 Partial Differential Equations II GRAD 3
Continuation of 835.
Sp Qtr. 3 cl. Prereq: 835 or permission of instructor.

840 Algebraic Geometry I GRAD 3
Varieties over algebraically closed fields.
Au Qtr. 2 72-min cl. Prereq: 772.

841 Algebraic Geometry II GRAD 3
Schemes, sheaves, and cohomology.
Wi Qtr. 2 72-min cl. Prereq: 840.

842 Algebraic Geometry III GRAD 3
Curves and surfaces.
Sp Qtr. 2 72-min cl. Prereq: 841.

846 Topics in Discrete Mathematics GRAD 2-5
Topics in Discrete Mathematics.
Su, Au, Wi, Sp Qtrs. 2-5 cl. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.

851 Differential Geometry I GRAD 3
Curves, surfaces, fundamental forms, tensors, and connections.
Au Qtr. 3 cl. Prereq: 655, 751, and 771.

852 Differential Geometry II GRAD 3
Continuation of 851.
Wi Qtr. 3 cl. Prereq: 851.

854 Lie Groups I GRAD 3
Integration on manifolds, Lie groups, classical groups, homogeneous spaces.
Wi Qtr. 3 cl. Prereq: 651, 751, and 771.

855 Lie Groups II GRAD 3
Continuation of 854.
Sp Qtr. 3 cl. Prereq: 854.

857 Introduction to Functional Analysis GRAD 3
Au Qtr. 3 cl. Prereq: 552 and 751.

860 Algebraic Topology I GRAD 3
Singular homology theory.
Au Qtr. 3 cl. Prereq: 657.

861 Algebraic Topology II GRAD 3
Continuation of 860; general cohomology theories.
Wi Qtr. 3 cl. Prereq: 860.

862 Algebraic Topology III GRAD 3
Continuation of 860 and 861; fibrations and homotopy theory.
Sp Qtr. 3 cl. Prereq: 861.

863 Potential Theory GRAD 3
Newtonian potentials, boundary value problems; logarithmic potential, elliptic partial differential equations.
Sp Qtr. 3 cl. Prereq: 552 and permission of dept.

865 Topics in Applied Mathematics GRAD 2-5
Topics in Applied Mathematics.
Au, Wi, Sp Qtrs. 2-5 cl. Prereq: Written permission of dept. Repeatable to a maximum of 20 cr hrs.

866 Differential Topology I GRAD 3
Differential manifolds and differential maps, tangent bundles, vector bundles and transversality.
Au Qtr. 3 cl. Prereq: 657 or permission of instructor.

867 Differential Topology II GRAD 3
Singular homology and cohomology, Poincare duality, intersection numbers, cobordism theory.
Wi Qtr. 3 cl. Prereq: 868 or permission of instructor.

868 Differential Topology III GRAD 3
Characteristic classes and the theory of fibre bundles.
Sp Qtr. 3 cl. Prereq: 867 or permission of instructor.

870 Topics in Graph Theory GRAD 2-5
Topics of current research interest.
Au, Wi, Sp Qtrs. Prereq: 777 and permission of dept. Repeatable to a maximum of 15 cr hrs.

872 Group Theory I GRAD 4
Properties of groups, extensions, transfer, generators and defining relations, representation theory, permutation groups.
Au Qtr. 4 cl. Prereq: 872 or 772.

873 Group Theory II GRAD 4
Continuation of 872.
Wi Qtr. 4 cl. Prereq: 872.

874 Group Theory III GRAD 4
Continuation of 873.
Sp Qtr. 4 cl. Prereq: 873.

875 Combinatorics Seminar GRAD 2-5
Recent research articles in combinatorics are read and presented by the students.
Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 15 cr hrs.


292 Mathematics

893 Individual Studies  GRAD  1-5
Indivdual assigned readings and reports on research investigations.
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

894 Group Studies  GRAD  1-5
When need is sufficient, the department will offer under this number a course on some phase of mathematics not covered in its regular offerings.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 30 cr hrs.

931 Ergodic Theory I  GRAD  3
Measurable transformations, mixing and ergodicity, existence of invariant measures, contraction operations on function spaces, ergodic theorems.
Au Qtr. 3 cl. Prereq: 751.

932 Ergodic Theory II  GRAD  3
Continuation of 931.
Wi Qtr. 3 cl. Prereq: 931.

939 Topics in Probability Theory  GRAD  2-5
Various advanced topics in probability theory.
Au, Wi Qtr. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.

949 Topics in Logic  GRAD  2-5
Topics in Logic.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.

950 Topics in Real Analysis  GRAD  2-5
Topics in Real Analysis.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.

951 Topics in Complex Analysis  GRAD  2-5
Topics in Complex Analysis.
Su, Au, Wi, Sp Qtrs. 2-5 cl. Prereq: 754. Repeatable to a maximum of 20 cr hrs.

953 Topics in Topology  GRAD  2-5
Topics in Topology.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 45 cr hrs.

957 Topics in Differential Geometry  GRAD  2-5
Topics in Differential Geometry.
Wi, Sp Qtr. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.

961 Topics in Functional Analysis  GRAD  2-5
Topics to be chosen from current research papers.
Su, Au, Wi, Sp Qtrs. 2-5 cl. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.

970 Topics in Representation Theory  GRAD  2-5
Topics in the representation theory of various algebraic structures.
Au, Wi, Sp Qtrs. 2-5 cl. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.

974 Topics in Homological Algebra  GRAD  2-5
Topics selected from current research articles.
Au, Wi, Sp Qtrs. 2-5 cl. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.

975 Topics in Geometry  GRAD  2-5
Topics to be chosen from current research papers.
Wi Qtr. 2-5 cl. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.

978 Topics in Ring Theory  GRAD  2-5
Topics selected from current research papers.
Su, Au, Wi, Sp Qtrs. 2-5 cl. Prereq: 772. Repeatable to a maximum of 20 cr hrs.

981 Topics in the Theory of Groups  GRAD  2-5
Topics in the Theory of Groups.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.

982 Topics in Algebra  GRAD  2-5
Topics selected from current research papers.
Su, Au, Wi, Sp Qtrs. 2-5 cl. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.

983 Topics in Number Theory  GRAD  2-5
Topics in Number Theory.
Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.

984 Seminar on Actuarial Science  GRAD  2-5
Current topics in actuarial science.
Arr. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

985 Seminar in Group Theory  GRAD  2-5
Seminar in Group Theory.
Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

986 Seminar on Algebra  GRAD  2-5
Seminar on Algebra.
Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

988 Seminar on Number Theory  GRAD  2-5
Seminar on Number Theory.
Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

990 Seminar on Geometry  GRAD  2-5
Seminar on Geometry.
Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

991 Seminar in Probability Theory  GRAD  2-5
Topics selected from current research papers.
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

992 Seminar in Applied Mathematics  GRAD  2-5
Seminar in Applied Mathematics.
Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

995 Seminar in Ergodic Theory  GRAD  2-5
Topics selected from current research papers.
Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

996 Seminar in Analysis  GRAD  2-5
Seminar in Analysis.
Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

997 Seminar in Topology  GRAD  2-5
Seminar in Topology.
Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

999 Research  GRAD  1-18
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

Mathematics & Physical Sciences, College of

100 Mathematical and Physical Sciences Survey  UGRD  1
Academic requirements, University procedures, grading system, resources; student rights and responsibilities; overview of Mathematical and Physical Sciences areas of study, Arts and Sciences services. 100H (honors) may be available.
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

299 Introduction to Undergraduate Research  UGRD  1-15
Introduction to undergraduate research or creative activities on various topics.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

Mechanical Engineering

210H Honors Statics  UGRD  4
Vector concepts of static equilibrium for isolated and connected body force systems. Analysis techniques of trusses, frames and machines. Construction of shear and moment diagrams.
Au, Su, Wi, Sp Qtrs. 3 64-min cl, 1 1-hr recitation. Prereq: EngMech 182 or 183 or 192H or EnGraph 167H and Math 254 or equiv. Not open to students with credit for 410, or EngMech 410, 220, 293, or 400. This course is part of the Freshman Engineering Honors Program.

250 Numerical Methods and Analysis in Mechanical Engineering  UGRD  4
Numerical methods for nonlinear equations, interpolation, and ordinary differential equations applied to mechanical engineering problems.
Su, Au, Wi, Sp Qtrs. 2-2 hr-cl, 1 1-hr recitation. Prereq: Math 415 or 255; and enrollment in Engineering.

294 Group Studies in Mechanical Engineering  UGRD  1-6
Special topics in mechanical engineering; the particular topic, credit hours, and the instructor will be announced in the quarter previous to the one in which the course is offered.
Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable.

410 Statics  UGRD  4
Vector concepts of static equilibrium for isolated and connected bodies, centroids, inertia, truss, frame and machine analysis, shear force and bending moment diagrams, and friction.
Au, Wi, Sp Qtrs. 3 64-min cl, 1 1-hr recitation. Prereq: EngMech 182 or 183 or 192H or EnGraph 167H or CptrInf 201 or CptrInf 202, and Physics 131, and Math 254 (precon or concur). CPHR 2.00 or above recommended. Not open to students with credit for 210H or 400.

420 Introduction Strength of Materials  UGRD  4
Stress and strain analysis of structural components subjected to unidirectional and combined loads; pressure vessels; beam deflections, Mohr's Circle, and columns.
Au, Wi, Sp Qtrs. 3 64-min cl, 1 1-hr recitation. Prereq: 210H or 410, or EngMech 210H, or permission of instructor. Not open to students with credit for 440 or EngMech 440.

430 Dynamics  UGRD  4
Dynamics of particles and rigid bodies; linear and angular motion; work and energy; and single degree of freedom vibration analysis.
Au, Wi, Sp Qtrs. 3 64-min cl, 1 1-hr recitation. Prereq: 210H or 400 or 410, or EngMech 210H or 220 or 400. Not open to students with credit for EngMech 430.
481 System Dynamics and Vibrations UGRD 3
Modeling of mechanical and electrical systems; first and second order systems; and analytical, computer, and experimental solution methods.
Au, Wi, Sp Qtrs. 2 1.5-hr cl, 1 1-hr recitation. Prereq: 250 and ElecEng 300 or permission of the dept.

482 System Dynamics and Electromechanics UGRD 4
Dynamics of general linear systems, thermofluid system dynamics, and electromechanics with emphasis on applications in mechanical engineering.
Au, Wi, Sp Qtrs. 2 1.5-hr cl, 2-1/2 hr lab. Prereq: 481 and prereq or concour: 504.

489 Professional Practice in Industry UGRD 2
Actual employment in a co-op program job in industry and the preparation of a comprehensive report based on a pre-assigned outline.
Su, Au, Wi, Sp Qtrs. Prereq: Admission to Co-op program in MechEng. Repeatable to a maximum of 8 cr hrs. This course may only be counted as a free elective. This course is graded S/U.

494 Group Studies in Mechanical Engineering UGRD 1-4
Short term project organization, design, construction, marketing and budgeting.

500 Engineering Thermal Sciences UGRD 4
Introduction to thermodynamics, fluid mechanics and heat transfer with engineering applications.
Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: Math 255 or 415, Physics 132, Chem 121 or permission of dept. Not open to students majoring in MechEng. Open to students enrolled in College of Engineering only.

501 Thermodynamics I UGRD 4
A study of basic engineering thermodynamics.
Au, Wi, Sp Qtrs. 2 2-hr cl, 1 1-hr recitation. Prereq: 430, Chem 121, Math 255 or 415; and enrollment as a Mechanical Engineering major or Food, Agricultural, and Biological Engineering major, or permission of instructor.

502 Thermodynamics II UGRD 3
Continuation of 501.
Au, Wi, Sp Qtrs. 2 1.5-hr cl, 1 1-hr recitation. Prereq: 250 and 501.

503 Fluid Dynamics I UGRD 3
A study of the basic concepts, fundamental equations, and applications of fluid mechanics to engineering problems.
Au, Wi, Sp Qtrs. 2 1.5-hr cl, 1 1-hr recitation. Prereq: 250 and 501.

504 Fluid Dynamics II UGRD 3
Continuation of 503.
Au, Wi, Sp Qtrs. 2 1.5-hr cl. Prereq: 502 and 503.

505 Introduction to Nuclear Science and Engineering UGRD 3
Discussion of nuclear energy and nuclear radiation; sources, methods of utilization, and projections for future engineering uses.
Au, Sp Qtrs. 2 1.5-hr cl. Prereq: Math 255 or 415 and Physics 133, or permission of instructor. Not open to students with credit for NuclEng 505. Cross-listed in Nuclear Engineering.

510 Heat Transfer UGRD 3
A study of the fundamentals of conduction, convection, and thermal radiation energy transfer with engineering applications.
Au, Wi, Sp Qtrs. 2 1.5-hr cl. Prereq: 501, and 504 or CivilEn 413.

512 Fluid Mechanics and Heat Transfer Laboratory UGRD 2
Experiments in fluid mechanics and heat transfer.
Au, Wi, Sp Qtrs. 1 4-hr lab. Prereq: 510 or permission of department. This course represents the labs formerly included in MechEng 504 and 510.

553 Kinematics and Dynamics of Machinery UGRD 4
Motion and force analysis in mechanisms such as plane linkages and cams; introduction to the synthesis of plane linkages and simple cam systems.
Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 430 or EngMech 430 or Physics 263, MechEng 250, 561, and enrollment in an engineering major or permission of the MechEng dept.

561 Failure Modes, Stress Analysis, and Failure UGRD 5
Prevention Principles
A study of the application of the general principles and empiricisms of mechanics of solids to the creative design of mechanical equipment.
Au, Wi, Sp Qtrs. 2 2-hr cl, 1 2-hr lab, 1 1-hr recitation. Prereq: 420 or equiv and MathEn 205 or equiv.

562 Design of Selected Machine Elements I UGRD 3
Continuation of 561.
Au, Wi, Sp Qtrs. 2 1.5-hr cl Prereq: 561.

563 Design of Selected Machine Elements II UGRD 3
Continuation of 562.
Au, Wi, Sp Qtrs. 2 1.5-hr cl. Prereq: 562 and 553.

564 Senior Design Group Project UGRD 4
Methodology of intermediate design and practice in the design of a specific system which may utilize principles of any engineering discipline; written assignments and oral presentation.
Au, Wi, Sp Qtrs. 3 2-hr lab. Prereq: 510; a second writing course and prereq or concour: 563. Offered in cooperation with Nuclear Engineering. GEC course.

565.01 Mechanical Engineering Design UGRD 3
First course in a three quarter integrated design sequence constituting a capstone mechanical design experience including technical communications.
Au Qtr. Prereq: 562 and 2nd writing course, 3.4 or higher GPA or permission of instructor. Not open to students with credit for 564 or 581. This course is Progress (P) graded. These courses will integrate design and engineering practice with a focus on real mechanical engineering design problems provided by industrial sponsors. A "P" mark as defined by the University may be assigned until completion of the three course sequence.

565.02 Mechanical Engineering Design UGRD 3
Second course in a three quarter integrated design sequence constituting a capstone mechanical design experience including technical communications.
Wi, Sp Qtrs. Prereq: 565.01. Not open to students with credit for 564 or 581. This course is Progress (P) graded. These courses will integrate design and engineering practice with a focus on real mechanical engineering design problems provided by industrial sponsors. A "P" mark as defined by the University may be assigned until completion of the three course sequence.

565.03 Mechanical Engineering Design UGRD 3
Final course in a three quarter integrated design sequence constituting a capstone mechanical design experience including technical communications.
Su, Sp Qtrs. Prereq: 565.02. Not open to students with credit for 564 or 581. This course is Progress (P) graded. These courses will integrate design and engineering practice with a focus on real mechanical engineering design problems provided by industrial sponsors.

570 Mechanical Engineering Measurements UGRD 5
A theoretical and experimental study of the principles of operation and performance characteristics of measuring instruments used in mechanical engineering; written assignments and oral presentation.
Au, Wi, Sp Qtrs. 2 cl, 1 1-hr lab. Prereq: 482 or equiv. ElecEng 320 or ECE 320, a second writing course. GEC course.

571 Principles of Automatic Control UGRD 4
A theoretical and experimental study of the principles of operation of feedback control systems, including servomechanisms and process control.
Au, Wi, Sp Qtrs. 2 1.5-hr cl, 1 2-hr lab. Prereq: 482 or AgrEng 525 or FABEng 525.

578 Senior Program Review UGRD 0
An interactive assessment of graduating seniors' overall achievements in Mechanical Engineering and their assessment of the program.
Su, Au, Wi Qtrs. Arr. Prereq: Enrolled in quarter of graduation. This course is graded S/U.

580.01 Special Topics: High Performance Vehicle UGRD 2
Development
Topics of special interest in vehicle development. Studies include analysis, design, fabrication and testing of vehicles. Topics are announced in quarter prior to quarter offered. Prereq: Jr standing in Engineering or written permission of instructor. Repeatable to a maximum of 8 cr hrs.

580.02 Special Topics: All Terrain Vehicle Development UGRD 2
Topics of special interest in vehicle development. Studies include analysis, design, fabrication and testing of vehicles. Topics are announced in quarter prior to quarter offered. Prereq: Jr standing in Engineering or written permission of instructor. Repeatable to a maximum of 8 cr hrs.

580.03 Special Topics: Flight Vehicle Development UGRD 2
Topics of special interest in vehicle development. Studies include analysis, design, fabrication and testing of vehicles. Topics are announced in quarter prior to quarter offered. Prereq: Jr standing in Engineering or written permission of instructor. Repeatable to a maximum of 8 cr hrs.

580.04 Special Topics: Analysis, Design, Fabrication and Testing of Non-Conventional Vehicles UGRD 2
Topics of special interest in vehicle development. Studies include analysis, design, fabrication and testing of vehicles. Topics are announced in quarter prior to quarter offered. Prereq: Jr standing in Engineering or written permission of instructor. Repeatable to a maximum of 8 cr hrs.

581 Mechanical Engineering Laboratory UGRD 4
The study and application of methods of experimental analysis.
Au, Wi, Sp Qtrs. 2.2 hr lab and 5 hrs lab planning and report writing. Prereq: 570. Offered in cooperation with Nuclear Engineering. GEC course.

593 Individual Studies in Mechanical Engineering UGRD 1-5
Provides the opportunity to pursue special studies in mechanical engineering not otherwise covered.
Su, Au, Wi Qtrs. Prereq: Permission of Instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

610H Direct Energy Conversion UGRD 5
Introduction to principles and operation of devices that convert thermal, chemical, and electromagnetic energy directly into electricity. Lectures are complemented by hands-on laboratory experience.
Wi Qtr. 2.24 hr lec, 2 2-hr labs. Prereq: Physics 133 or equiv, precore or concur: MechEng 500; or permission of instructor.

612 Principles of Heat Exchangers UGRD 3
A study of principles of heat and mass transfer as applied to the design of heat exchangers.
Au Qtr. 2 1.5-hr cl. Prereq: 510 or grad standing in MechEng or permission of instructor.
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621 Introduction to Parametric Design UGRD 3
Design of components, assemblies, molds and dies using parametric and feature-based design principles.
Au, Wi Qtrs. 2.15-hr cl. Prereq: 561 or ISE 520 or WeldEng 600 or grad standing in ISE, MechEng or graduate interdisciplinary specialization in Manufacturing Science and Engineering (GISM); or permission of instructor. Not open to students with credit for IndEng 621 or ISE 683. Cross-listed in Industrial and Systems Engineering.

622 Tool Engineering UGRD 4
Design of tools, jigs and fixtures. Basic elements of fixture design, such as form, locating points, clamping devices, and the use of standardized parts.
Sp Qtr. 2.15-hr cl, 1.3-hr lab. Prereq: IndEng 311 or ISE 350; prereq or conc: IndEng/MechEng 621 or ISE 683. Not open to students with credit for IndEng 622 or ISE 690.2. Cross-listed in Industrial and Systems Engineering.

623 Machine Tool Control and Programming UGRD 4
Provides an introduction to numerically controlled machine tools including principles of operation, programming systems, computer-assisted programming; performance characteristics, and applications.
Au, Wi Qtrs. 2.15-hr cl, 2-3 hr labs. Not open to students with credit for IndEng 605 or IndEng 623 or ISE 651.04. Cross-listed in Industrial and Systems Engineering.

627 Introduction to Turbomachinery UGRD 4
An introduction to the design and analysis of turbomachinery.
Sp Qtr. 2.15-hr cl, 1.2-hr lab. Prereq: 503 and 504 or equiv. Not open to students with credit for 527.

628 Experimental Methods in Mechanics UGRD 3
Static and dynamic strain analysis by electrical gauges; grid techniques; brittle coatings; analogies, relative photoelasticity in normal and oblique incidence; motion measurements.
Sp Qtr. 2 cl, 2 lab hrs. Prereq: 420 or 440 or EngMech 440 or equiv. Not open to students with credit for EngMech 627.

630 Energy Conversion in Internal Combustion Engines UGRD 3
A study of combustion chambers, valve mechanisms, and the dynamic balance of internal combustion engines.
Au Qtr. 2.15-hr cl. Prereq: 502 or 500 or equiv, or grad standing in MechEng, or permission of instructor.

631 Automotive Powertrain Laboratory UGRD 3
Focuses on aspects of the internal combustion engine, and is for engineering undergraduate and graduate students who are interested in the field of automotive powertrains.
Wi Qtr. 1.25-hr lab. Prereq: 502 or 630 or permission of instructor. Introduction to the experimental components of the current courses offered in the area of automotive powertrains.

634 Gas Turbine Power Plants UGRD 3
A study of the principles, performance, and design of gas turbine power plants.
Wi Qtr. 2.15-hr cl. Prereq: 510 or grad standing in MechEng or permission of instructor.

638 Introduction to Ultrasonics UGRD 4
Ultrasonic waves in solids and fluids; ultrasonic generators and systems; physical ultrasonics; applications of ultrasonics.
Au Qtr. 4 cl, 4 hr of Prereq: 420 or 440 or EngMech 440; Math 255 or 415. Not open to students with credit for EngMech 634, WeldEng 634 or 638. Cross-listed in Welding Engineering.

639 Applied Finite Element Method UGRD 4
Overview of finite element method, description of finite element software, modeling requirements and techniques, analysis using general purpose software, case studies.
Au Qtr. 2 cl, 2 hr recitation. Prereq: 420 or 440 or EngMech 440 or equiv. Not open to students with credit for EngMach 639.

641 Heating, Ventilating, and Air Conditioning UGRD 3
Design techniques, practices, and components in heating, ventilating, and air-conditioning.
Sp Qtr. 2.15-hr cl. Prereq: 500 or 501 and prereq or conc 510, or grad standing in MechEng.

650 Vibration of Mechanical Systems UGRD 3
Techniques for the analysis of vibratory mechanical systems - free and forced response, damping, multiple degree of freedom systems, vibration design and experimental vibration methods.
Wi Qtr. 2.15-hr cl. Prereq: 482 or permission of instructor.

650.01 FIRST Design Concepts UGRD 1
Design, analysis, and construction of a remote control robot that plays a sport with other robots. Fundamental principles for FIRST robot design, analysis, and construction.
Au Qtr. 1 cl. Prereq: Active participation in FIRST. CPRHR of 2.00 or above is recommended. Not open for MechEng graduate credit. Not open to students who have exceeded the credit limit for 552. Repeatable to a maximum of 3 hrs.

652.02 FIRST Robot Construction UGRD 1-3
Design, analysis, and construction of a remote control robot that plays a sport with other robots. Non-food, analysis, and construction of a remote control robot that plays a sport against other robots.
Wi Qtr. Arr. Prereq: Active participation in FIRST. CPRHR of 2.00 or above is recommended. Not open for MechEng graduate credit. Not open to students who have exceeded the credit limit for 552. Repeatable to a maximum of 9 or cr hrs.

652.02 FIRST Robot Construction UGRD 3
Study of the principles and design methodology of automotive vehicles; design and analysis of suspension and braking systems.
Sp Qtr. 2.15-hr cl. Prereq: 492 and 562 or equiv, or grad standing in MechEng or permission of instructor.

654 Land Vehicle Dynamics UGRD 3
Study of the fundamentals of automotive composite structures including governing constituent equations, strength and stiffness advantages and failure envelopes.
Au Qtr. 4 cl. Prereq: 420 or 440 or EngMech 440 or equiv, or permission of instructor. Not open to students with credit for CivilEn 662 or EngMech 682. Cross-listed in Civil Engineering.

656 Acoustic Problems in Engineering UGRD 3
A study of the fundamentals of acoustics and noise control including design criteria based on hearing damage and other human responses to sound.
Wi Qtr. 2.15-hr cl. Prereq: 3rd yr or grad standing in science or Eng or permission of instructor.

672 Control Systems Design UGRD 3
A study of the theoretical procedures involved in the analysis and design of feedback control systems including servomechanisms and process control.
Sp Qtr. 2.15-hr cl. Prereq: 571 or grad standing in MechEng or permission of instructor.

674 Introduction to Mechatronics UGRD 3
Introduction to multi-domain systems. Mechanical, thermal, fluid, electrical, electronic, electromechanical system dynamics. Emphasis on modeling and simulation of hybrid systems using modern computer-aided tools.
Au Qtr. 2.15-hr lec. Prereq: 482 or ElecEng 320 or equiv, or permission of instructor.

680H Digital Data Acquisition and Signal Processing UGRD 3
Methodology and practice of computer-aided experimentation and signal processing techniques: frequency analysis, diagnostics, system identification, and random data processing.
Sp Qtr. 2 cl, 1.2-hr lab. Prereq or conc: 481, 1 hr standing in dept or equiv. 3.40 cumulative GPA, ratio, and permission of dept. Not available for audit. Open to Honors and combined BS/MS students only.

682 Product Design Fundamentals UGRD 4
Principles of concurrent engineering, design for manufacture and assembly, and lean manufacturing; integration of design and manufacturing; design prototyping.
Au, Wi, Sp Qtrs. 2.15-hr cl, 1.2 hr lab. Prereq: 561 or IndEng 523 or ISE 521 or grad standing. Not open to students with credit for IndEng 682 or ISE 682. Cross-listed in Industrial and Systems Engineering.

683 CAD/CAM Laboratory for Rapid Design UGRD 3
Prototyping
Rapid design prototyping using engineering workstations, CAD/CAM software, tabletop CNC milling machines, and rapid prototyping machines.
Wi Qtr. 1.2-hr cl, 1.3-hr lab. Prereq: MechEng or IndEng 623; and 561 or IndEng 523 or grad standing in MechEng or IndEng. Not open to students with credit for IndEng 683. Cross-listed in Industrial and Systems Engineering.

687 Introduction to Musculoskeletal Biomechanics UGRD 3
Au Qtr. 2.15-hr cl. Prereq: 561 and 481 or grad standing in engineering or permission of instructor.

693 Individual Studies in Mechanical Engineering UGRD 2-10
Designed to give the advanced student opportunity to pursue special studies not otherwise offered; work undertaken will be selected from automotive and internal combustion machinery, combustion and fuels, heat transfer, heating, ventilating, air conditioning, industrial hydraulics, machine design, refrigeration, steam power plants, and thermodynamics.
Su, Au, Wi, Sp Qtrs. Prereq. Permission of instructor. Repeatable to a maximum of 24 or hrs. This course is graded S/U.

694 Group Studies in Mechanical Engineering UGRD 1-6
Special topics in mechanical engineering. The particular topic, credit hours, and the instructor will be announced in the quarter previous to the one in which the course is offered.
Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 12 or cr hrs.

697 Study at a Foreign Institution UGRD 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 or hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

701 Gas Dynamics UGRD 3
An analytical study of one and two dimensional steady flows and one dimensional unsteady flow.
Au Qtr. 2.15-hr cl. Prereq: 504 and Math 415 or grad standing in MechEng or permission of instructor.

702 Advanced Engineering Thermodynamics UGRD 3
A study of the fundamentals of thermodynamics from the classical viewpoint with emphasis on the use of the first and second laws for the analysis of thermal systems.
Sp Qtr. 2.15-hr cl. Prereq: 502 and Math 415 or written permission of course supervisor.
Mechanical Engineering 295

705 Fundamental Concepts in Fluid Mechanics GRAD 3
In-depth derivation of equations and principles governing fluid flow with an emphasis on formulation of problems.
Au Qtr. 2 1.5-hr cl. Prereq: Grad standing in MechEng or permission of instructor.

707 Numerical Methods in Particle Diffusion, Heat Transfer, and Radiation Transport GRAD 3
Computer solution of neutron diffusion, heat conduction, and radiation transport based on finite difference methods using marching, iterative, and direct-solution schemes. Wi Qtr. 2 1.5-hr cl. Preq: 510 or Mat 512 or NuclEn 660, Cprinf 541, and EnGraph 167. Not open to students with credit for NuclEn 707 or 767. Cross-listed in Nuclear Engineering.

710 Fundamental Concepts in Heat and Mass Transfer GRAD 3
In-depth derivation of equations and principles governing heat and mass transfer with an emphasis on formulation of problems.
Au Qtr. 2 1.5-hr cl. Preq: Grad standing in MechEng or permission of instructor.

712 Energy Principles in Mechanics GRAD 3
Theoretical development of energy principles in mechanics; strain energy and complementary energy with related minimal principles; applications to problems in elasticity, dynamics, and vibrations.
Au Qtr. 3 cl. Preq: 420 or 440 or EngMech 400 and Mat 255, or equiv. Not open to students with credit for EngMech 712. Offered even numbered years.

715 Introduction to Micro and Nano Fluidics GRAD 3
Introduction to basic principles of incompressible fluid mechanics appropriate to micro and nano fluidics.
Au Qtr. 1 1.5-hr cl. Preq: 504 or permission of instructor. Not open to students with credit for BiomedEn 763. Cross-listed with BiomedEn 763.

726 Introduction to Combustion GRAD 3
Introduction to thermodynamics and kinetics of combustion and to the role of diffusion in combustion systems; applications to evaporation of fuel droplets, catalytic conversion, and coal combustion.
Wi Qtr. 2 1.5-hr cl. Preq: 504; preq or conc: 510.

727 Applications of Jet Propulsion UGRD 4
Characteristics and performance of air breathing flight vehicle power plants and their components.
Au Qtr. 2 2-hr cl. Preq: 510 or permission of instructor. Distance Learning version may be available/developed at a later date.

730 Internal Combustion Engine Modeling GRAD 3
Comprehensive coverage of spark-ignited internal combustion engine modeling (fluid dynamics, thermodynamics and combustion). Au Qtr. 4 cl. Preq: 430 or EngMech 430 and Mat 255 or 415, or grad standing in Engineering. Not open to students with credit for EngMech 730.

731 Vibrations of Discrete Systems UGRD 4
Free and forced vibrations of mechanical systems having lumped mass and elasticity; multiple degrees of freedom; dissipative systems; random vibrations; engineering applications.
Au Qtr. 3 cl. Preq: 420 or EngMech 420 and Mat 255 or 415, or grad standing in Engineering. Not open to students with credit for EngMech 731.

733 Advanced Engineering Dynamics GRAD 3
Three-dimensional dynamics of particles and rigid bodies; rotating reference frames; rigid body kinematics; rotation transformations; Euler angles; engineering applications.
Au Qtr. 2 1.5-hr cl. Preq: EngEng 630 or permission of instructor. Specifically targeted to grad students and selected undergrads working in the area of internal combustion engine development, modeling and control. Offered odd numbered years.

734 Vibrations of Continuous Systems GRAD 3
Equations of motion for strings, membranes, prismatical bars, and plates for various boundary conditions; approximate methods for complicated shapes; wave propagation in elastic media.
Wi Qtr. 3 cl. Preq: 430 or EngMech 430 and Mat 255, or equiv. Not open to students with credit for EngMech 734.

735 Analytical Dynamics GRAD 3
Analytical dynamics of particles, rigid bodies, and continua; elements of variational calculus; constraints; virtual work, Hamilton's principle, and Lagrange's equations; computational methods; engineering applications.
Au Qtr. 2 1.5-hr cl. Preq: 430 and Mat 255 or equiv; or grad standing in Engineering. Offered odd numbered years.

736 Nuclear Power Plants UGRD 3
A study of thermal and mechanical design aspects and economics of nuclear power plants and processes. The thermodynamics of operating nuclear power plants (BWR's and PWR's) are emphasized.
Wi Qtr. 2 1.5-hr cl. Preq: NuclEn 505 and 501 or 500 with permission of instructor. Not open to students with credit for 636 or NuclEn 636 or 736. Cross-listed in Nuclear Engineering.

737 Heat Transfer Applications in Nuclear Reactor Systems GRAD 3
The heat transfer applications in nuclear reactor systems include but are not limited to: heat transfer in PWR and BWR fuel rods, coolant, and reactor internals. Sp Qtr. 2 1.5-hr cl. Preq: MechEng 510 or 500 with permission of instructor. Not open to students with credit for MechEng 637, or NuclEn 637, or 737. Cross-listed in Nuclear Engineering.

738 Introduction to Two-Phase Flow and Heat Transfer GRAD 3
Introduction to two-phase flow and heat transfer in mechanical and nuclear engineering applications. Students learn analytical tools for system design and performance evaluation.
Au Qtr. 2 1.5-hr cl. Preq: 510 or CEHE 521 or equiv or permission of instructor. Not open to students with credit for NuclEn 738. Cross-listed in Nuclear Engineering. Introduction to gaseous two-phase flow phenomena.

740 Elasticity UGRD 4
Classical problems in elasticity, St-Venant torsion and bending theory; plane problems in rectangular and polar coordinates; axisymmetric problems.
Wi Qtr. 4 cl. Preq: 420 or EngMech 440 or equiv, and preq or conc: Mat 512. Not open to students with credit for EngMech 740.

743 Introduction to Continuum Mechanics UGRD 4
Continuum mechanics in Cartesian coordinates, analysis of deformation and stress, balance principles, constitutive equations; introductory concepts in viscoelasticity and plasticity.
Wi Qtr. 4 cl. Preq: 420 or EngMech 440 and Mat 255, or equiv, or grad standing in Eng. Not open to students with credit for EngMech 743.

744 Engineering Fracture Mechanics UGRD 3
Fracture and fatigue; stress intensity factors; the stability of cracks; compliance and energy role analysis; plane stress, plane strain; crack propagation and arrest.
Wi Qtr. 3 cl. Preq: 420 or EngMech 440 and Mat 512 or equiv. Not open to students with credit for 644 or EngMech 644.

751 Application of Computer Graphics to Kinematic Synthesis and Analysis UGRD 4
Application of interactive computer graphics techniques to the kinematic synthesis of linkages; extensive use of the RCGL computer graphics facility.
Wi Qtr. 3 cl. 1 2-hr lab. Preq: 553 and EnGraph 167 or equiv. Not open to students with credit for 651.

752 Mechanical Design of Manipulators and Robots UGRD 3
Principles of hardware and software design of industrial robots and related devices; includes use of actual industrial robot programming procedures.
Au Qtr. 2 1.5-hr cl. Preq: EngMech 430 and Mat 508, or permission of instructor.

753 Elastic Stability UGRD 3
Buckling of struts, rings, arches, and plates; torsional instability; stability criteria, exact and approximate methods.
Au Qtr. 3 cl. Preq: 420 or EngMech 440 and Mat 255, or equiv. Not open to students with credit for EngMech 751. Offered even numbered years.

754 Land Vehicle Dynamics Lab UGRD 1
Lab and field tests of an action vehicle to measure vehicle inertia, geometric, suspension and steering characteristics in order to generate parameters for computer simulations. Sp Qtr. 1 2-hr lab. Preq or conc: 564. Existing software packages such as ADAMS, VDANL and MATLAB will be used in solving vehicle dynamic problems using principles of multi-body system analysis.

755 Plates and Shells UGRD 4
Basic equations; classical solutions and approximate methods in the theory of thin plates; Membrane theory of shells of revolution.
Sp Qtr. 4 cl. Preq: 420 or 440 or EngMech 440 or equiv, and preq or conc: Mat 512. Not open to students with credit for EngMech 754. Offered even numbered years.

760 Form Synthesis and Applied Stress Analysis of Machinery UGRD 3
A study of concepts, principles, and procedures related to stresses and strains for the design and analysis of machine parts.
Wi Qtr. 1 1.5-hr cl. Preq: 562 and 563 or grad standing in engineering. Not open to students with credit for 861. This class is one of the core courses in the M.S. program in Mechanical Engineering.

761 Optimization in Mechanical Design UGRD 3
Application of analytical optimization methods to the solution of deterministic and probabilistic mechanical design problems; introduction to interactive optimization using RCGL computer graphics facilities.
Sp Qtr. 2 1.5-hr cl. Preq: 562 or 563 or permission of instructor. Not open to students with credit for 661.

762 Structural Composites UGRD 3
An introduction to the analysis and design synthesis of beams, columns, rods, plates, and panels made of structural composites.
Wi Qtr. 3 cl. Preq: 662, or CivilEn 662 or EngMech 662 or permission of instructor. Not open to students with credit for CivilEn 762 or EngMech 762. Cross-listed in Civil Engineering.

763 Advanced Strength of Materials for Design UGRD 4
Mohr's circle for strain; curved beams; bending of non-symmetrical sections; non-circular torsion; beams on elastic foundations; load-deflection relations by energy methods; applications to design.
Au Qtr. 2 1.5-hr cl. Preq: 420 or 440 or EngMech 440 or equiv, and Mat 255 or 415 or grad standing in EngMech. Not open to students with credit for 620 or EngMech 622.

764 Advanced Gear Design UGRD 3
A survey of advanced computer techniques to design spur and helical gears. Techniques will be taught in form of several small and one large capstone project.
Wi Qtr. 4 1-hr cl. Preq: 562, 563 or permission of instructor. Offered odd numbered years.
Principles of Tribology UGRD 3
Mechanisms of friction, wear, and lubrication that govern interfacial behavior; applications of basic theories to solutions of friction and wear problems.
Au Qtr. 2 1.5-hr cl, Prereq: standing or permission of instructor.

Engineering Acoustics UGRD 3
A course in engineering acoustics covering the phenomenon by which acoustic energy is generated and transmitted, with applications to mechanical machinery.
Wi Qtr. 2 1.5-hr cl, Preq: 668 or permission of instructor. Offered odd numbered years.

Fluid Film Lubrication UGRD 3
Hydrodynamic lubrication applied to journal and thrust bearings; elastohydrodynamic lubrication applied to rolling-element bearings and gears.
Sp Qtr. 2 1.5-hr cl, Preq: 561 or permission of instructor.

Introduction to the Finite Element Method UGRD 4
Basic concepts, formulation, and application of finite element techniques for numerical solution of problems in structural and continuum mechanics, geotechnical engineering, and water resources engineering.
Au, Wi Qtrs. 4 cl, Preq: EnGraph 167 or equiv, and CivilEn 406 or Math 568 or equiv. Not open to students with credit for CivilEn 763 or 768 or EngMech 763. Cross-listed in Civil Engineering.

Measurement System Application and Design UGRD 4
A theoretical and experimental study of measurement instrumentation; emphasis on both principles of operation and analysis and design techniques for measurement systems of a mechanical and electromechanical nature.
Wi Qtr. 2 1.5-hr cl, 1.2-hr lab, Preq: 570 or grad standing in MechEn or permission of instructor. Not open to students with credit for EGR 671.

Control Systems Design Laboratory UGRD 1
A study of experimental procedures involved in the analysis and design of feedback control systems including servomechanisms and process control.
Sp Qtr. 2 1-hr lab, Preq: or concour: 672.

Applied Digital Control UGRD 4
Theory and application of digital control system design techniques to the control of physical systems; lab sessions deal with implementation of controllers using personal computer.
Wi, Qtr. 2 1.5-hr cl, 1.2-hr lab, Preq: 571 or equiv. Not open to students with credit for MechEn 673.

Smart Materials and Intelligent Systems UGRD 3
Macromechanical modeling and control of smart structures to include piezoceramics, piezopolymer,
shape memory alloys, electro-rheological structures.
Sp Qtr. 2 1.5-hr cl, Preq: 482 or grad standing in engineering.

Reliability Engineering I UGRD 4
Engineering system reliability modeling and prediction; reliability of programmable devices and human reliability; reliability and risk management of engineering systems.
Au Qtr. 2 2-hr cl, Preq: 481 or ElecEng 351 or IndEng 509 or ISRE 510 or grad standing. Cross listed in Electrical Engineering, and Industrial and Systems Engineering. Repeatable for different titled topics only of 776.xx. Field experience at the site of Honda in Marysville.

Reliability Engineering II UGRD 4
Reliability of mechanical and electrical devices, systems, and engineering processes.
Wi Qtr. 2 2-hr cl, Preq: 776.01 or ElecEng 776.01 or IndEng 776.01 or ISRE 715.02 or permission of instructor. Cross-listed in Electrical Engineering, and Industrial and Systems Engineering. Repeatable for different titled topics only of 776.xx. Field experience at the site of Honda in Marysville.

Reliability Engineering Applications UGRD 1
Study and design of a complete reliability program for a selected engineering system.
Au Qtr. 1 cl, Preq: 776.02 or ElecEng 776.02 or IndEng 776.02 or ISRE 715.02 or permission of instructor. Cross-listed in Electrical Engineering, and Industrial and Systems Engineering. Repeatable for different titled topics only of 776.xx. Field experience at the site of Honda in Marysville.

Automotive Noise, Vibration, and Harshness UGRD 3-4
Control I
An integrated study of acoustics, shock and vibration, and dynamic design issues with emphasis on automotive case studies and problem solving methodology.
Au Qtr. 2 1.5-hr cl (3 or option); 4th cr for project work, arr. Prq: Grad standing in MechEn, ElecEng, or permission of instructor. Offered odd numbered years. Part of a sequence emphasizing automotive systems engineering designed for MS degree students and practicing engineers.

Automotive Noise, Vibration, and Harshness UGRD 3-4
Control II
Continuation of 777 with focus on source-path-receiver identification, modal analysis, passive/active control, and machinery diagnostics.
Wi Qtr. 2 1.5-hr cl (3 or option); 4th cr for project work, time arr. Preq: 777 or permission of instructor. Offered even numbered years. Part of a sequence emphasizing automotive systems engineering designed for MS degree students and practicing engineers.

Automotive Noise, Vibration, and Harshness UGRD 3-4
Control III
Continuation of 778 with focus on advanced modeling and experimental methods, structural-acoustic interactions, and flow-induced noise and vibration.
Sp Qtr. 2 1.5-hr cl (3 or option); 4th cr for project work, time arr. Preq: 778. Offered even numbered years. Part of a sequence emphasizing automotive systems engineering designed for MS degree students and practicing engineers.

Automotive Noise, Vibration, and Harshness UGRD 3-4
Control III
Lumped Parameter System Analysis UGRD 3
Lumped parameter system analysis of mechanical, thermal, hydraulic, pneumatic, and electromechanical systems; system response to periodic, transient, and random excitation; computer and physical system demonstrations.
Au Qtr. 2 1.5-hr cl, Preq: Math 415 or permission of instructor. Not open to students with credit for MechEn 880.

Powertrain Dynamics GRAD 4
Overview of the major dynamic phenomena that characterize powertrain behavior. Emphasis or interaction between subsystems. The predominant natural frequencies of the powertrain will be described.
Au Qtr. 4 lec, Preq: Grad standing or permission of instructor. Offered even numbered years. Distance learning version available.

Powertrain Control GRAD 4
Classical and modern control methods applied to automotive powertrains; overview of production hardware; sensors and actuators; modeling for control.
Wi Qtr. 4 lec, Preq: ECE 551 or grad standing. Not open to students with credit for ECE 755.01. Offered odd numbered years. Offered only as distance learning course.

Honors Program Research UGRD 1-3
Honors program students are offered the opportunity to pursue independent project/research. Student presentations and thesis writing included.
Su, Au, Wi, Sp Qtrs. Arr. Preq: Sr standing in MechEng (or equiv). Students must have a GPA of at least 3.4 or permission of instructor. Repeatable to a maximum of 6 cr hrs.

Energy Modeling of Hybrid-Electric Vehicles GRAD 4
Energy conversion, storage, utilization and optimization of complete road vehicle systems (conventional or hybrid-electric).
Au Qtr. 2 2-hr cl, Preq: 784 or permission of instructor. Offered even numbered years. This is the second course in a series of two courses.

Modeling, Simulation and Control of Hybrid-Vehicles UGRD 4
Mathematical modeling, computer simulation and control design with application to hybrid-electric vehicles.
Wi Qtr. 2 2-hr cl, Preq: 784 or permission of instructor. Offered even numbered years. This is the second course in a series of two courses.

Gas Turbine Combustion GRAD 3
Introduction to gas turbine combustion and related design considerations covering basic combustion phenomena, gas turbine combustor configurations, fuels, sprays, ignition and emissions.
Au Qtr. Preq: Graduate standing in Engineering or 726 or permission of instructor.

Neuromuscular Biomechanics UGRD 3
Wi Qtr. 2 1.5-hr cl, Preq: 687 or permission of instructor.

Fuel Cell Systems for Automotive Applications GRAD 4
Description, energy analysis, system modeling, optimization and control of PEM fuel cell systems for automotive applications.
Sp Qtr. Preq: Graduate standing in Engineering or MechEng 726 or permission of instructor.

Group Studies in Mechanical Engineering UGRD 1-5
Special topics in mechanical engineering. The particular topic, credit hours, and the instructor will be announced in the quarter previous to the one in which the course is offered.
Au, Wi, Sp Qtrs. Arr. Preq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs.

Methods of Engineering Analysis GRAD 3
Solution of boundary value, eigenvalue, and initial value problems arising in mechanics by approximate methods; weighted residual and stationary functional methods.
Au Qtr. 3 cl, Preq: 10 cr hrs of 700-level courses in EngMech or MechEng and Math 512 or equiv. Not open to students with credit for EngMech 803.

Fundamentals of Thermodynamics II GRAD 3
Introduction to the fundamentals of thermodynamics from the microscopic viewpoint.
Au Qtr. 2 1.5-hr cl, Preq: 702. Offered odd numbered years.

Fluid Physics GRAD 3
The physics of chemically reacting thermodynamically nonequilibrium flowing fluids, with applications to energy conversion systems, propulsion, plasma processors, high speed flows, and gas lasers.
Wi Qtr. Preq: 803 or equiv or permission of instructor. This course is part of a sequence of graduate instruction in the fluid and thermal science area of the Dept of Mechanical Engineering, which treat modern engineering systems for which understanding molecular-scale process is critical. Offered even numbered years.
805 Electrical Gas Discharges  
Introduction to the physics of low-temperature plasmas involving electrical discharges in gases. Plasma chemistry and solid-state plasmas are also considered.  
Sp Qtr. 2 1.5-hr cl. Prereq: 803 or 804 or equiv or permission of instructor. Offered even numbered years.

806 Viscous Flow of Fluids  
Theory of viscous flows; exact solutions of the Navier Stokes equations, creeping flows, and boundary layers.  
Wi Qtr. 2 1.5-hr cl. Prereq: Pore. 504. Offered even numbered years.

807 Conduction Heat Transfer  
A study of the general heat transfer equations and their application to heat transfer in solids.  
Sp Qtr. 2 1.5-hr cl. Prereq: 510. Offered even numbered years.

808 Laminar Convection Heat Transfer  
Laminar forced convection in pipes; laminar thermal boundary layers and entrance effects; stagnation point heat transfer; free convection boundary layers and plumes.  
Wi Qtr. 2 1.5-hr cl. Prereq: 806 and 807. Offered odd numbered years.

809 Thermal Radiation Heat Transfer  
Black body radiation, gray body approximation, radiation surface properties, radiation exchange in non-participating media, conduction-radiation interaction, convection-radiation interaction, and introduction to radiation in participating media.  
Au Qtr. 2 1.5-hr cl. Prereq: 807. Offered even numbered years.

810 Inviscid Flows  
Kinematics of inviscid flows; circulation and vorticity; the structure of vortices; two and three dimensional vortex flows; the Euler equations and the effect of compressibility.  
Wi Qtr. 2 1.5-hr cl. Prereq: 705 or equiv. Offered odd numbered years.

811 Computational Methods for Incompressible Flows  
Advanced numerical methods for solving the incompressible (low mach number) Navier-Stokes equations using pressure-based techniques.  
Sp Qtr. 2 2-hr cl. Prereq: 707 or AeroEng 615. Offered odd numbered years.

813 Turbulent Flow and Heat Transfer  
Study of turbulent flows, with emphasis on the calculation of heat transfer in turbulent internal and external flows.  
Sp Qtr. 3 cl. Prereq: 705 and 710. Offered even numbered years.

814 Optical Techniques in Reacting and Nonreacting Flows  
Measurements and visualizations based on elastic and inelastic scattering and laser-induced fluorescence and background materials on optics, quantum mechanics, lasers, and detectors.  
Wi Qtr. 2 1.5-hr cl. Prereq: Grad standing in engineering science. Offered even numbered years.

815 Multiphase Flow, Heat, and Mass Transfer in Porous Media  
Current theories on flow, heat, and mass transfer in porous media and an understanding of the mechanisms involved in multiphase transport in porous media.  
Sp Qtr. 2 1.5-hr cl. Prereq: 806 or permission of instructor. Offered odd numbered years.

818 Advanced Analytical Methods in Mechanical Engineering  
Transform and Green's function methods for solution of problems arising in heat conduction, vibration of continuous bodies, and mechanics of fluids; asymptotic evaluation of integral representations of these solutions.  
Au Qtr. 2 1.5-hr cl. Prereq: 807 or 850 or equiv. Not open to students with credit for 881. Offered odd numbered years.

820 Wave Dynamics in Fluids  
Small and finite amplitude wave propagation and attenuation in fluids, nonlinear flow-acoustic coupling.  
Sp Qtr. 2 1.5-hr cl. Prereq: 1.2-hr lab. Prereq: 705 or permission of instructor. Offered odd numbered years.

826 Combustion  
A study of chemical thermodynamics and kinetics, the basic equations of change, and application of fundamentals to combustion in engineering systems.  
Sp Qtr. 2 1.5-hr cl. Prereq: 726 or permission of instructor. Offered odd numbered years.

827 Advanced Propulsion Problems  
Course will emphasize a detailed discussion of current problems in the field of air breathing propulsion. Major emphasis on technical papers from current archival literature.  
Wi Qtr. Prereq: 727 or AeroEng 751 or permission of instructor. Cross-listed in AeroEng 851.

832 Nonlinear Vibrations  
Vibration of undamped and damped nonlinear systems, perturbation techniques, self-excited oscillations, forced vibrations, bifurcations, time-varying systems, Poincare maps, chaos.  
Sp Qtr. 3 cl. Prereq: 731 or equiv or permission of instructor. Offered even numbered years.

833 Elastic Wave Propagation  
Dispersion and group velocity; waves in extended media; propagation and reflection in half space; Lamb problem; waves in plates and rods by exact theory scattering of waves.  
Sp Qtr. 3 cl. Prereq: 731 or 734 or EngMech 731 or 734. Not open to students with credit for EngMech 833. Offered odd numbered years.

834 Advanced Methods of Vibration Analysis  
Analytical methods for the formulation, solution, and physical understanding of conservative and non-conservative vibratory systems. Gyroscopic and damped systems. Approximate methods.  
Sp Qtr. 2 1.5-hr cl. Prereq: 731 or equiv. Offered odd numbered years.

835 Random Vibrations  
Description of random processes; statistical properties of the response of mechanical systems; optimization of systems subjected to random inputs; instrumentation.  
Au Qtr. 3 cl. Prereq: 731 or EngMech 731. Not open to students with credit for EngMech 835.

837 Advanced Topics in Tribology  
Current and advanced research topics in friction, wear, and lubrication vital to the successful operation of machine elements.  
Wi Qtr. 2 1.5-hr cl. Prereq: 765 and 767 or permission of instructor. Offered even numbered years.

838 Advanced Topics in Finite Element Methods  
Introduces state-of-the-art advances in finite element methods including element stability, hourglass control, time integration methods, adaptive methods, mixed and hybrid element technology.  
Sp Qtr. Prereq: MechEng/CivilEng 768 or equivalent.

839 Finite Element Method in Engineering Science  
Approximation of boundary value and initial value problems; variational methods, hybrid and mixed method; convergence and accuracy of finite element approximations; recent developments, advanced applications.  
Sp Qtr. 5 cl. Prereq: 763 or 768 or CivilEng 763 or 768 or EngMech 763, and Math 601 or equiv. Not open to students with credit for CivilEng 839 or EngMech 839. Cross-listed in Civil Engineering.

840 Theory of Continuous Media  
Equilibrium, compatibility, and strain displacement relationships for a general continuum; constitutive equations for problems of elasticity, fluid dynamics, and inelasticity.  
Sp Qtr. 3 cl. Prereq: 740 or EngMech 740. Not open to students with credit for EngMech 840. Offered even numbered years.

842 Computational Mechanics for Nonlinear Deformation  
Addresses development in computational mechanics for problems with geometric and material nonlinearities, e.g. elastoplasticity, viscoelasticity, contact-friction. Applications like metal-forming, composites will be discussed.  
Sp Qtr. Prereq: 788 and 743.

843 Advanced Elasticity  
Complex variable methods; anisotropic elasticity; three-dimensional elasticity; mixed boundary value problems; variational methods.  
Wi Qtr. 3 cl. Prereq: 740. Offered even numbered years.

844 Advanced Fracture Mechanics  
Treatment of advanced topics in fracture mechanics; elastic-plastic fracture, dynamic crack propagation and arrest, time dependent fracture, fracture of composites, and fatigue crack growth.  
Sp Qtr. 3 cl. Prereq: 744 or EngMech 844 or permission of instructor. Not open to students with credit for EngMech 844. Offered even numbered years.

847 Theory of Plasticity  
Plastic range stress-strain relations; elastoplastic behavior of beams and trusses; torsion of prismatic bars; plane strain; shear lines; limit analysis.  
Wi Qtr. 3 cl. Prereq: 740 or EngMech 740 and Math 512. Not open to students with credit for EngMech 847. Offered odd numbered years.

851 Kinematic Geometry of Mechanisms  
Kinematics and statics of spatial mechanisms including robotic mechanisms.  
Sp Qtr. 2 1.5-hr cl. Prereq: 752 or permission of instructor. Offered odd numbered years.

859 Sliding Mode Control in Electro-Mechanical Systems  
Sliding mode control for decoupling of the design procedure and low sensitivity with respect to uncertainties, and application to control of electromechanical systems.  
Au Qtr. 3 1-hr cl. Prereq: 571 or ElecEng 551. Cross-listed in Electrical Engineering. Offered odd numbered years.

864 Theory of Viscoelasticity  
Basic concepts of time dependent inelastic behavior; viscoelastic constitutive laws; correspondence principles; quasi-static and dynamic problems.  
Sp Qtr. 3 cl. Prereq: 740 or EngMech 740. Not open to students with credit for EngMech 884. Offered odd numbered years.

870 Digital Signal Analysis of Mechanical Systems  
Conceptual, measurement, and numerical aspects of digital data acquisition and signal processing, random data analysis, and system identification and diagnostic techniques used for mechanical systems.  
Sp Qtr. 2 1.5-hr cl. Prereq: permission of instructor. Offered odd numbered years.

873 State Space Methods for Dynamic Systems  
Application of state-space methods to the analysis and synthesis of dynamic systems with emphasis on control applications.  
Sp Qtr. 2 1.5 cl. Prereq: Math 568 or equiv and MechEng 571 or equiv, or permission of instructor. Not open to students with credit for ElecEng 750. Offered even numbered years.
### Mechanical Engineering

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<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>874</td>
<td>Fault Diagnosis in Mechatronic Systems</td>
<td>GRAD</td>
<td>3</td>
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Fault detection and diagnosis in engineering systems based on dynamic models. Theory and case studies drawn from industrial application.

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<tr>
<td>888</td>
<td>Mechanical Engineering Seminar</td>
<td>GRAD</td>
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Lecture and discussion of current topics related to mechanical engineering presented by graduate students, staff, and guest speakers.

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<tr>
<td>890</td>
<td>Metal Forming Machines and Tooling</td>
<td>GRAD</td>
<td>3</td>
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Design and application of mechanical and hydraulic presses. Advanced techniques (FEM) for estimating material flow, tool geometry and stresses for stamping and forging.

### Medical Dietetics

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<tr>
<td>201</td>
<td>Careers in Dietetics</td>
<td>UGRD</td>
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Roles, responsibilities, and educational requirements for a career in dietetics; current employment opportunities.

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<tr>
<td>210H</td>
<td>Interdisciplinary Research: Osteoporosis, Prevention, and Treatment</td>
<td>UGRD</td>
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An interdisciplinary team approach to research on the diagnosis, prevention, and treatment of osteoporosis is presented. Students will complete a pre-project pilot of their own design.

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<tr>
<td>519</td>
<td>Introduction to Nutrition and Human Metabolism</td>
<td>UGRD</td>
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Introduction to medical nutrition therapy; study of scientific rationale behind applying nutrition principles to disease.

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<tr>
<td>520.01</td>
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Introduction to medical nutrition therapy in prevention and treatment of disease states. Pathology, physiology, labs, procedures and drugs for the various disease states are covered.

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<tr>
<td>595</td>
<td>Seminar</td>
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Conferences, group discussions, and presentations of selected topics.

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<tr>
<td>999</td>
<td>Research in Mechanical Engineering</td>
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### Mechanical Engineering

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<tr>
<td>201</td>
<td>Careers in Dietetics</td>
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Roles, responsibilities, and educational requirements for a career in dietetics; current employment opportunities.

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<td>210H</td>
<td>Interdisciplinary Research: Osteoporosis, Prevention, and Treatment</td>
<td>UGRD</td>
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An interdisciplinary team approach to research on the diagnosis, prevention, and treatment of osteoporosis is presented. Students will complete a pre-project pilot of their own design.

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<td>519</td>
<td>Introduction to Nutrition and Human Metabolism</td>
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Introduction to medical nutrition therapy; study of scientific rationale behind applying nutrition principles to disease.

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Research for thesis or dissertation purposes only.
688.02 Medical Dietetics Professional Practice II UGRD 2-12
Supervised professional practice in various health care settings.
U- 4 hrs Cl - 1 credit; G 8 hrs Cl - 2 credits. Prereq: Admission to the Medical Dietetics Program, Sr standing or Graduate Program. This course is graded S/U.

688.03 Medical Dietetics Professional Practice III UGRD 2-12
Supervised professional practice in various health care settings.
U- 4 hrs Cl 1 credit; G 8 hrs Cl 2 credit. Prereq: Admission to the Medical Dietetics Program, Sr standing or Graduate Program. This course is graded S/U.

688.04 Medical Dietetics Professional Practice IV UGRD 2-12
Supervised professional practice in various health care settings.
U- 4 hrs Cl 1 credit; G 8 hrs Cl 2 credit. Prereq: Admission to the Medical Dietetics Program, Sr standing or Graduate Program. This course is graded S/U.

693 Individual Studies in Nutrition or Dietetics UGRD 1-5
Problems in various phases of nutrition or medical dietetics not included in current course offerings.
Su, Au, Wi, Sp Qtrs. Prereq: Grad or Sr standing in MedDiet program and permission of instructor. Repeatable to a maximum of 15 hrs. This course is graded S/U.

695 Seminar UGRD 1-3
Conferences and group discussions of selected topics.
Su, Au, Wi, Sp Qtrs. 2 1.5-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 9 or hrs. This course is graded S/U.

720 Management Applications in Dietetics GRAD 3
Emphasis on leadership skills for nutrition and dietetics in health care settings.
Sp Qtr. 2 1.5-hr cl. Prereq: Approved undergrad program in dietetics.

745 Nutritional Genomics UGRD 3
Introduction to the emerging field of nutritional genomics and translational medicine for the prevention and treatment of diseases.
Sp Qtr. Prereq: Introductory nutrition course (HumNtr 310 or equiv) and 10 or hrs of science, intro Biochem. Physiol or permission of instructor.

838.01 Physiological and Theoretical Bases for Maternal and Pediatric Needs GRAD 3
Physiology of pregnancy and lactation including special needs; physiological changes in the neonate; normal growth and development during the first year; and nutritional disorders of the pediatric patient.
Sp Qtr. Prereq: Grad standing, 5 hrs Physiol and Biochem, HumNtr 310 or above, permission of instructor.

838.02 Clinical Applications in Maternal and Pediatric Nutrition GRAD 2
Experiences in the perinatal and pediatric setting to enhance the students' clinical assessment and counseling skills in these specialized settings.
6 hrs clinical. Prereq: Grad standing, 5 hrs Physiol and Biochem, HumNtr 310 or above, permission of instructor. This course is graded S/U.

856.01 Nutrition in Critical Care: Lecture GRAD 3
The pathophysiological background in systemic disease, surgical intervention and nutritional interrelationships among disease, treatments, and nutrition.
Au Qtr. Prereq: Permission of instructor. Not open to students with credit for PrevMed 656.

856.02 Nutrition in Critical Care: Practicum GRAD 2
The pathophysiological background in systemic disease, surgical intervention and nutritional interrelationships among disease, treatments, and nutrition.
Au Qtr. 1 4-hr clinic. Prereq: Permission of instructor. Not open to students with credit for PrevMed 656. This course is graded S/U.

857 Nutrition and Metabolic Imbalance GRAD 3
The pathophysiological background of metabolic imbalances encountered in the clinical setting and the rationale for nutritional therapies.
* Au Qtr. 2 1.5-hr cl Prereq: 856.01, FedSoShu 761 or permission of instructor.

858 Community Nutrition GRAD 3
Methods of discovering problems in public health nutrition and practical application of nutrition information for improvement of nutritional status at various age levels.
* Au Qtr. 2 1.5-hr cl Prereq: 838 and 856, or permission of instructor. Not open to students with credit for PrevMed 858.

885 Advanced Nutrition Therapy in Complex Disease States UGRD 3
Advanced study of nutrition therapy in disease. Interrelationships of nutrition with biochemical, physiological and anatomical changes with acute, chronic, terminal illness, surgery, and trauma. Prereq: Admission to MS/Dietetic Internship or permission from the faculty.

889.01 Clinical Practicum: Crisis Care Practicum GRAD 2-5
Advanced, specialized orientation to clinical dietetics including resource and patient management through individual conferences, group conferences, team conferences, and clinical practice.
Su, Au, Wi, Sp Qtrs. 3 clinic hrs/credit. Prereq: Permission of instructor. Subdivisions are repeatable to a maximum of 10 or hrs. Repeatable to a maximum of 10 or hrs. This course is graded S/U.

889.02 Clinical Practicum: Primary Care Practicum GRAD 2-5
Advanced, specialized orientation to clinical dietetics including resource and patient management through individual conferences, group conferences, team conferences, and clinical practice.
1 cl, 16-hrs clinic. Prereq: Permission of instructor. Subdivisions are repeatable to a maximum of 10 or hrs. Repeatable to a maximum of 10 or hrs. This course is graded S/U.
300 Medical Technology

604 Clinical Correlations in Chemistry UGRD 2
The study of pathologic conditions in chemistry with emphasis on problem-based study, group work, and written and oral presentation skills. Au Qtr: 2 1-hr cl. Prereq: Admission to MedTech or permission of instructor. 604E may be available for honors embedded experience.

605 Clinical Correlations in Immunohematology UGRD 2
A problem-based study of the pathological principles of transfusion medicine. Wi Qtr: 1 1-hr cl, 1 2-hr recitation. Prereq: Admission to MedTech or permission of instructor. 605E may be available for honors embedded experience.

610 Administration in Laboratory Medicine GRAD 3
Principles of administration applied to the management of health services in laboratory medicine. Wi Qtr: 3 cl. Prereq: Grad standing in Pathol or Allied Med. Pathol resident or permission of instructor. Cross-listed in Pathology.

615.01 Advanced Clinical Laboratory Hematology: Lecture UGRD 4
Advanced theory and application of clinical laboratory techniques used to evaluate the formed elements of the blood and hemostatic mechanism. 2 1.5-hr cl, 1 1-hr cl. Prereq: 510.01 or permission of instructor. E615.01 may be available for honors embedded experience.

615.02 Advanced Clinical Laboratory Hematology: Laboratory UGRD 2
Advanced theory and application of clinical laboratory techniques used to evaluate the formed elements of the blood and hemostatic mechanism. 2 2-hr labs. Prereq: 510.01 or permission of instructor.

620 Management and Education in Clinical Laboratory Science UGRD 3
Theory and application of management and education principles directed specifically to the Clinical Laboratory Scientist. Wi Qtr. Prereq: Admission to MedTech program or permission of instructor.

630.01 Clinical Laboratory Immunology: Lecture UGRD 4
Theory and application of clinical laboratory techniques employing antigen-antibody reactions in the study of disease. 2 1.5-hr cl, 1 1-hr cl. Prereq: Admission to MedTech or permission of instructor. 630.01E may be available for honors embedded experience.

630.02 Clinical Laboratory Immunology: Laboratory UGRD 1
Theory and application of clinical laboratory techniques employing antigen-antibody reactions in the study of disease. 1 3-hr lab. Prereq: Admission to MedTech or permission of instructor.

635.01 Immunohematology: Lecture UGRD 5
Theory and practice of blood banking and transfusion medicine. 5 1-hr cl. Prereq: Admission to MedTech or permission of instructor. 635.01E may be available for honors embedded experience.

635.02 Immunohematology: Laboratory UGRD 3
Theory and practice of blood banking and transfusion medicine. 3 3-hr labs. Prereq: Admission to MedTech or permission of instructor.

640 Advanced Laboratory Techniques UGRD 4
Applications of theory in quality control, method selection and evaluation, and advanced diagnostic techniques with an emphasis on instrumentation, automation and problem solving. Su, Au, Wi, Sp Qtrs. Prereq: Chem 121, Biology 113 or permission of instructor. Offered as a distance education course. E640 may be available for honors embedded experience.

645.01 Clinical Chemistry: Lecture UGRD 5
Principles in clinical chemistry with an emphasis on principles of analysis, correlation of biochemical parameters with disease, instrumentation and automation, and problem solving. 2 1.5-hr cl, 1 2-hr cl. Prereq: Admission to MedTech or permission of instructor. 645.01E may be available for honors embedded experience.

645.02 Clinical Chemistry: Laboratory UGRD 2
Principles in clinical chemistry with an emphasis on principles of analysis, correlation of biochemical parameters with disease, instrumentation and automation, and problem solving. 2 3-hr labs. Prereq: Admission to MedTech or permission of instructor. 645.02E may be available for honors embedded experience.

669 Clinical Practice in Laboratory Science UGRD 12
Application of medical laboratory techniques under supervision in clinical laboratories or other non-hospital laboratory settings. Su, Au, Wi, Sp Qtrs. 280 hrs. Prereq: All MedTech courses. OSU and/or non-OSU laboratory sites available. This course is graded SU.

679 Clinical Practice in Transfusion Service UGRD 2
Application of medical laboratory techniques under supervision in immunohematology and transfusion service. Su, Au, Wi, Sp Qtrs. Prereq: 605, 635.01, 635.02. Not open to students with credit for 579, OSL and non-OSU laboratory sites available. This course is graded SU.

688 Interdisciplinary Studies in Clinical Laboratory UGRD 1-5
Science
The application of medical laboratory science in interdisciplinary settings. Su, Au, Wi, Sp Qtrs. Prereq: All MedTech courses. Repeatable to a maximum of 12 cr hrs. This course is graded SU.

693 Individual Studies UGRD 1-15
Guided study or individual readings, research, or experiences related to medical technology. Su, Au, Wi, Sp Qtrs. Prereq: Admission to MedTech or permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded SU.

695 Seminars in Medical Laboratory Science UGRD 1-5
Problems and current issues in laboratory science. Su, Au, Wi, Sp Qtrs. Prereq: Admission to MedTech, grad standing or permission of instructor. Repeatable to a maximum of 12 cr hrs.

795 Graduate Seminar GRAD 1-3
Investigation of current topics in clinical laboratory medicine. Su, Au, Wi, Sp Qtrs. 1 3-hr cl. Prereq: Admission to MedTech coordinated graduate program or permission of instructor. Repeatable to a maximum of 15 cr hrs.

885 Clinical Education Practicum GRAD 2-5
Supervised experience in clinical education and training. Su, Au, Wi, Sp Qtrs. Prereq: Admission to MedTech coordinated grad program or permission of instructor. Repeatable to a maximum of 15 cr hrs.

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### Medicine, College of

600 Introduction to Medicine MED 0
An introductory course describing curriculum choices and requirements, support services, and security procedures for new medical students in the College of Medicine and Public Health. Su Qtr. Prereq: Enrollment in the College of Medicine. Registered, first-year medical students only. This course is graded SU.

651 Patient-Centered Medicine MED 2-4
A multidisciplinary study of human behavior and the patient’s central role in the practice of medicine. Su, Au, Sp Qtrs. Prereq: Enrollment in College of Medicine. Registered medical students only. Repeatable to a maximum of 12 cr hrs. This course is Progress (P) graded. 12 hours required of all medical students with a grade rendered each SP quarter. This course is graded SU.

660 Physician Development MED 2-4
A multidisciplinary study of the interpersonal, examination, and diagnostic skills necessary to be a practicing physician. Su, Au, Wi, Sp Qtrs. Prereq: Enrollment in College of Medicine. Registered medical students only. Repeatable to a maximum of 12 cr hrs. This course is Progress (P) graded. 12 hours required for all medical students. Personal transportation to community practices. This course is graded SU.

661.01 Clinical Assessment and Problem Solving I MED 4-8
Multidisciplinary study of competencies necessary to be a practicing physician: interpersonal, professional, clinical reasoning, reflection and knowledge of clinical medicine and healthcare systems. Prereq: Enrollment in College of Medicine. Registered medical students only. Repeatable to a maximum of 24 cr hrs. This course is Progress (P) graded. This is a progress course with grade rendered each spring quarter. Personal transportation to community practices. This course is graded SU.

661.02 Clinical Assessment and Problem Solving II MED 4-8
Multidisciplinary study of competencies necessary to be a practicing physician: interpersonal, professional, clinical reasoning, reflection and knowledge of clinical medicine and healthcare systems. Prereq: Enrollment in College of Medicine. Registered medical students only. Repeatable to a maximum of 24 cr hrs. This course is Progress (P) graded. This is a progress course with grade rendered each spring quarter. Personal transportation to community practices. This course is graded SU.

662 MEDI I: Medical Sciences MED 5-20
Study of human biology and pathophysiology in a patient-oriented organ-system interdisciplinary manner. Au, Wi, Sp Qtrs. Concur: 660, 661. Registered medical students only. Repeatable. This course is Progress (P) graded. Grade rendered in SP. This course is graded SU.

663 MEDI II: Medical Sciences MED 5-20
Study of human biology and pathophysiology in a patient-oriented organ-system interdisciplinary manner. Au, Wi, Sp Qtrs. Prereq: 660, 661. Registered medical students only. Repeatable. This course is Progress (P) graded. Grade rendered in SP. This course is graded SU.

664 MEDI III and IV: Clinical Medicine MED 4-24
Didactic and clinical instruction in family medicine, internal medicine, neurology, obstetrics and gynecology, pediatrics, psychiatry, and surgery; experience in outpatient, community, and inpatient services. Su, Au, Wi, Sp Qtrs. Prereq: 663. Repeatable. This course is Progress (P) graded. Must repeat 152 cr hrs. This course is graded SU.
Medieval and Renaissance Studies

210 Court of Charlemagne UGRD 5

The Carolingian Renaissance: a unified interpretation of a crucial period in the transition of Europe from the classical age to the early Middle Ages.

2-2 hr cr. GEC arts and hums cultures and ideas and social diversity - international issues (Western) course.

211 Medieval Kyoto: Portraits and Landscapes UGRD 5

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.

Sp Qtr. 2-2 hr cr. Taught in English. GEC arts and hums cultures and ideas and social diversity - international issues (Global) course.

212 Culture of a City-State in the Renaissance UGRD 5

The study of an Italian Renaissance city-state with attention to its political, social, and economic structure; its religious, intellectual, and artistic activity.

5 cr. GEC arts and hums cultures and ideas and social diversity - international issues (Western) course.

213 Medieval Moscow UGRD 5

The diversity of medieval Russian culture as represented by Moscow: religion, society, politics, art, and architecture.

2-2 hr cr. GEC arts and hums cultures and ideas and social diversity - international issues (Global) course.

214 Golden Age of Islamic Civilization UGRD 5

The Baghdadi Caliphate of Harun ar-Rashid from 786 to 861 A.D.

2-2 hr cr. GEC arts and hums cultures and ideas and social diversity - international issues (Global) course.

215 Gothic Paris: 1100-1300 UGRD 5

Medieval Paris, its art, music, history, theatre, literature, and important individuals.

2-2 hr cr. GEC arts and hums cultures and ideas and social diversity - international issues (Western) course.

216 The Medieval Jewish Experience UGRD 5

A survey of ten centuries of medieval Jewish culture from the rise of Islam to the death of Shabbetai Zvi, the false Messiah (1676).

2-2 hr cr. Not open to students with credit for Hebrew 216. Cross-listed in Hebrew. GEC arts and hums cultures and ideas and social diversity - international issues (Global) course.

217 Early Modern London UGRD 5

An exploration of the history, politics, and culture of London beginning with the Protestant Reformation and ending with the great fire of London in 1666.

2-2 hr cr. GEC arts and hums cultures and ideas and social diversity - international issues (Western) course.

218 Colonial Mexico: The Medieval and Renaissance Legacy UGRD 5

An examination of how Medieval and Renaissance cultural sites were redefined and reconstituted in Colonial Mexico to construct new identities and cultural expressions.

2-2 hr cr. Not open to students with credit for Spanish 330, except by permission of director of the Center for Medieval and Renaissance Studies. GEC arts and hums cultures and ideas and social diversity - international issues (Global) course.

219 The Golden Age of the Netherlands 1500-1672: From Antwerp to Amsterdam UGRD 5

Examination of factors (economic, religious, political) contributing to the transformation of Antwerp and subsequently Amsterdam and the subsequent influence of the arts.

2-2 hr cr. GEC arts and hums cultures and ideas and social diversity - international issues (Western) course.

220 Byzantine Civilization: Constantinople and the Empire of New Rome UGRD 5

A survey of Byzantine civilization, focusing on life in the capital, literature, and the court. Orthodox Christianity, and the formation of Medieval Europe.

5 cr. Not open to students with credit for Classics 226. Cross-listed in Classics. GEC arts and hums cultures and ideas and social diversity - international issues (Western) course.

240 Magic and Witchcraft in the Middle Ages and Renaissance UGRD 5

A study of the history of witchcraft and magic from 400 to 1700 C.E. within sociological, religious and intellectual contexts.

4 cr. GEC arts and hums cultures and ideas and social diversity - international issues (Western) course.

244 Group Studies UGRD 3-5

Topic varies; special subjects not covered by regular courses.

Art. Repeatable to a maximum of 20 cr hrs.

504 The Arthurian Legends UGRD 5

The medieval tales of King Arthur’s court and the Knights of the Round Table in history, myth, literature, art, and music.

Prereq: 10 cr hrs in literature. Not open to students with credit for CompStds 504 or 510.

610 Manuscript Studies UGRD 5

An examination of the development of Latin book production from late antiquity to the Renaissance in the cultural context of the Middle Ages.

2-2 hr cr. Prereq: Jr, sr or grad standing.

611 History of the Book Studies UGRD 5

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.

631 Survey of Latin Literature: Medieval and Renaissance UGRD 5

Survey of selected authors representative of the medieval and renaissance periods of Latin literature with discussion of historical background and critical approaches.

Prereq: Latin 104 or equiv. Repeatable to a maximum of 10 cr hrs.
302  Medieval and Renaissance Studies

692  Workshop  UGRD  1-8
Workshop.
Arr cl.  Prereq: Varies with the topic offered. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

693  Individual Studies  UGRD  1-5
Students may register for individual directed study under this number for work not normally offered in courses.
Su, Au, WI, Sp Qtrs.  Prereq: Written permission of instructor. Open only to majors in medieval.
Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

694  Group Studies  UGRD  2-5
Interdisciplinary group studies of selected topics in Medieval and Renaissance culture and civilization.
Prereq: 10 or hrs in Medieval at the 200 level. Repeatable to a maximum of 15 cr hrs.

695  Advanced Seminar in Medieval and Renaissance Studies  UGRD  5
A seminar in interdisciplinary research and analysis providing experience in presenting ideas in oral and written form.
2 2-hr cl.  Prereq: Jr, sr, or grad standing; or permission of instructor. Repeatable to a maximum of 15 cr hrs. GEC third writing course.

783H  Honors Research  UGRD  3-5
A program of study will be arranged for each student, with individual conferences, reports, and Honors thesis.
Su, Au, WI, Sp Qtrs.  Prereq: 4th yr standing with a grade of A in at least half of the courses in the student's major area of study 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. At least 2 qtrs are required of candidates for the BA degree with distinction in Medieval and Renaissance studies. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

792  Interdepartmental Studies in the Humanities  UGRD  5
Two or more departments may collaborate in presenting colloquia on studies of mutual interest; topics to be announced.
1 or 2 2-hr cl.  Repeatable to a maximum of 15 cr hrs.

899  Interdepartmental Seminar in the Humanities  GRAD  5
Two or more departments may collaborate in presenting seminars on subjects of mutual interest; topics to be announced.
1 or 2 2-hr cl.  Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

Microbiology

294  Group Studies  UGRD  1-5
Study of selected topics in microbial and cellular biology.
Su, Au, WI, Sp Qtrs.  Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

301  The Biology of Pollution  UGRD  2
A general consideration of the interactions of environmental pollutants and biological systems.
Au Qtr. 1-2 hr cl.  Prereq: 5 or biology. Credit counts toward a major in microbiology. NS Admin Cond course.

509  Basic and Practical Microbiology  UGRD  5
Provides an understanding of microorganisms and their interaction with the human experience.
Su, Au, WI, Sp Qtrs. 509N: Sp Qtr. 2, 2-2 hr labs.  Prereq: Biology 101 or 113 or 115H. GEC bio sci course. NS Admin Cond course.

520  General Microbiology I  UGRD  5
Fundamental principles of microbiology and the characteristics of microorganisms with emphasis on their structure, molecular biology, growth and classification.
Au, Sp Qtrs. 3 cl, 2 3-hr labs.  Prereq: Biology 114 or H116. May not be taken concur with 509.

521  General Microbiology II  UGRD  5
Continuation of 520; basic principles of microbiology with emphasis on physiology, ecology, biotechnology, ecology, and applied and pathogenic microbiology.
Wi Qtr. 3 cl, 2 3-hr labs.  Prereq: 520 and Chem 252, or concur.

522  Immunobiology Lecture  UGRD  3
Cellular and molecular properties of the immune system.
Wi Qtr. 3 cl.  Prereq: 520 for majors; 509 for nonmajors. Not open to students with credit for 522.

522.01  Immunobiology Laboratory  UGRD  3
Methods in immunobiology.
Wi Qtr. 1 cl, 2 2-hr lab.  Prereq or concur: 522.01. Not open to students with credit for 522.

524,01  Mechanisms of Microbial Disease  UGRD  4
Overview of microbe-host interactions with an emphasis on pathogenic mechanisms of microorganisms; the influence of the etiologic agent, route of contact, host species, and the environment.
2 2-hr cl.  Prereq: 522 or 522.01. Not open to students with credit for 724.

581.01  Microbiologic Genetics Lecture  UGRD  3
Structure, maintenance, expression, and exchange of genetic materials in microbial cells.
Au, Sp Qtrs.  Prereq: 520 or MolGen 505. Not open to students with credit for 581 or 680.

581.02  Microbiologic Genetics Laboratory  UGRD  3
Structure, maintenance, expression and exchange of genetic materials in microbial cells laboratory.
Au, Sp Qtrs.  Prereq: 581 or MolGen 505. Not open to students with credit for 581M.

589  DNA Finger Printing Workshops in Columbus Public Schools  UGRD  2
A service learning course whereby undergraduates mentor high school students in molecular biology workshops.
Sp Qtr.  Repeatable to a maximum of 6 cr hrs. Undergraduates present workshops in Columbus Public Schools. Cross-listed in Biochemistry and Molecular Genetics. Service learning course.
This course is graded S/U.

601H  Bioinformatics and Molecular Microbiology  UGRD  5
Application of computational tools to the analysis of genomes and their gene products.
^ Au Qtr. 2 2.5-hr labs. Prereq: 581 or MolGen 605, and Biochem 511; or permission of instructor.

629  Cellular and Molecular Biology of Pathogenic Eukaryotes  UGRD  5
Cellular and molecular aspects of parasitism.
^ Sp Qtr. 4 cl, 1-hr recitation.  Prereq: 520 and/or 522 or permission of instructor. 647 recommended.

632.01  Food Microbiology: Lecture  UGRD  3
Cellular and molecular mechanisms of the immune response; characterization of cell products elaborated subsequent to antigenic stimulation; significance of these products in immunologic response.
Sp Qtr. 3 cl.  Prereq: 522 or equiv with permission of instructor.

636.01  Food Microbiology Lecture  UGRD  3
Microorganisms in relation to the production, processing and handling of food with emphasis on food transmitted pathogens and minimizing public health risks.
Au, Sp Qtrs. 3 cl.  Prereq: 509 or 520. Not open to students with credit for 636 or FdScTe 636. Cross-listed in Food Science and Technology.

636.02  Food Microbiology Laboratory  UGRD  3
Laboratory training for determining the microbiological safety and quality of food with emphasis on handling pathogens and observing analyst's safety.
Au, Sp Qtrs. 2 2-hr labs, 1 cl.  Prereq: 636.01 or concur. Not open to students with credit for 636 or FdScTe 636. Cross-listed in Food Science and Technology.

647  Eukaryotic Pathogens  UGRD  3
Pathogenesis, virulence factors, host-parasite interactions, ecology, epidemiology, immunity, laboratory diagnosis, and chemotherapy of eucaryotic pathogens.
Au Qtr. 1.5-2 hr cl.  Prereq: 520 or 524.01, or Biochem 511, or MolGen 500 or 605, or permission of instructor. Not open to students with credit for MV/MG 647. Cross-listed in Molecular Virology, Immunology and Medical Genetics.

649  Introductory Virology  UGRD  5
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.
Wi Qtr. 2 2-hr cl, 1 hr rec.  Prereq: 520.

661  General Microbial Physiology  GRAD  5
Principles of microbial growth, metabolism, microbial structure and function, and regulation of microbial metabolism.
Au Qtr. 5 cl.  Prereq: 521 and Biochem 511.

664  Microbial Ecology  UGRD  3
A study of microbial functions, interactions and diversity as influenced by biological, chemical and physical factors in the environment.
^ Au Qtr. 2 1.5-hr cl.  Prereq: 509 or equiv.

665  Environmental Microbiology  UGRD  3
The role of microorganisms and the underlying biological principles in elemental cycles and degradation of natural and man-made compounds.
Au Qtr. 3 cl.  Prereq: 509 or equiv. Not open to students with credit for HCS 665. Not available for audit. Cross-listed in Horticulture and Crop Science.
698.02 Study Tour: Foreign UGRD 1-15
Group work on special topics in microbial or cellular biology.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

699 Honors Research UGRD 1-5
Laboratory and bioinformatics based research culminating in an Honors thesis.
Su, Au, Wi, Sp Qtrs. Prereq: 3rd or 4th yr standing and permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee.
Repeatable to a maximum of 15 cr hrs. At least 5 cr hrs are required of candidates for completion of honors thesis for BS degree and distinction in microbiology. This course is graded S/U.

700 Microbiology Colloquium UGRD 1
Faculty, students and outside speakers will give research presentations on microbial-host interactions.
Au, Wi, Sp Qtrs. Prereq: Registration as a graduate student or permission from both course director and undergraduate major advisor for undergraduates. Repeatable to a maximum of 12 cr hrs. Cross-listed in Integrated Biomedical Science. This course is graded S/U.

701 Cellular and Molecular Immunology UGRD 5
Cellular and molecular mechanisms of immune response, cell recognition and communication, molecular biology of cell recognition structures, cytokines, and effector mechanisms.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

702 Microbial Metabolism Meets Pathogenesis GRAD 3
In-depth presentation and discussion of the interface between bacterial metabolism and pathogenesis, emphasizing current research in the field.
Au Qtr. 3 1-hr cl. Prereq: 661 or permission of instructor.

703 Molecular Basis for Microbial Biodiversity GRAD 4
Introduction to the diversity of organisms found in the microbial world and molecular biology of ecosystems which select organisms adapt or modify the environment.
** Su Qtr. 2 2-hr cl, 2 1-hr labs. Prereq: 521, Biochem 511, and MicroGen 500 or equiv; or permission of instructor.

722 Molecular Pathogenesis UGRD 5
In-depth presentation and discussion of the molecular and cellular mechanisms of pathogenesis, emphasizing current research in the field.
Au Qtr. 3 1.5-hr lec. Prereq: Grad standing, advanced undergrads must have permission of instructor.

726 Advanced Food Microbiology UGRD 3
Molecular biological properties of antibiotics, T-cell receptors, cytokines, complement and MHC
Au Qtr. 3 cl. Prereq: 522 or equiv with written permission of instructor.

736 Advanced Microbial Genetics GRAD 3
Molecular mechanisms of gene regulation and gene transfer in prokaryotes.
Wi Qtr. 3 cl. Prereq: 581 or MolGen 605.

737 Microbial Evolution UGRD 5
Evolution and evolutionary ecology of bacteria, viruses, and other microorganisms: mutation, selection, gene exchange, macroevolution, social interactions, coevolution, endosymbioses, emerging virulence, and increasing complexity.
Au Qtr. 2 2-hr cl. Prereq: 10 or hrs of biological sciences coursework taken at the 300 level or higher.
304 Military Science

201 Individual Leadership I
Develops knowledge of self, self-confidence and individual leadership skills. Instruction includes practical exercises in and out of the classroom to develop problem solving and critical thinking skills.
Au, Wi, Sp Qtrs. 2-hr cl, 1-2 hr leadership lab. Prereq: Wi, Sp Qtr, Permission of instructor.

202 Individual Leadership II
Continuation of 201 focusing on developing knowledge of self, self-confidence and individual leadership skills. Instruction includes practical exercises in and out of the classroom to develop problem solving and critical thinking skills.
Wi Qtr. 2-1 hr cl, 1-2 hr leadership lab.

203 Leadership and Teamwork
Focuses on self-development guided by knowledge of self and group processes. Challenges student's current beliefs, knowledge, and skills. Provides equivalent preparation for the ROTC Advance Course as the Leader's Training Course.
Sp Qtr. 2-1 hr d, 1-2 hr leadership lab.

301 Military Operations at Small Unit Level
Overview of military tactics conducted at the infantry squad, platoon, and company level; analyze military missions and plan military operations, train and lead squad in execution of battle drills.
Au Qtr. 3-1 hr d, 1-2 hr leadership lab, 3-1 hr physical training labs. Prereq: 203 or department position.

302 Leadership and Problem Solving
Develops knowledge of self, self-confidence and individual leadership skills; provides overview of national defense policy and analyzes role players occurred in transition of the Army from Vietnam to the 21st Century; practical exercises in application of general problem-solving mode.
Wi Qtr. 3-1 hr cl, 1-2 hr leadership lab, 3-1 hr physical training labs, 1-1 day field training exercise. Prereq: 301 or permission of the professor of military science.

303 Leadership and Ethics
Develops cadet leadership competencies through study of leadership to include trait theory, motivation theory, and contemporary leadership models; apply principles and techniques of effective written and oral communication; prepare for success at National Advanced Leadership Camp.
Sp Qtr. 3-1 hr cl, 1-2 hr leadership lab, 3-1 hr physical training labs, 1-4 day field training exercise. Prereq: 302 or permission of the professor of military science.

401 Military Operations, Training Management and Ethics
Designed to acquaint student with Army management systems including staff organization and functions, training management and military professionalism and ethics. Practical exercises using the ethical decision-making process.
Au Qtr. 3-1 hr cl, 1-2 hr leadership lab, 3-1 hr physical training labs, 1-1 day field training exercise. Prereq: 301, 302 or permission of professor of military science.

402 Military Leadership, Operations and Administration
Designed to acquaint student with leadership, ethics, and the foundations of military and non-judicial law in leadership. Topics include personal, professional and leadership development.
Wi Qtr. 3-1 hr cl, 1-2 hr leadership lab, 3-1 hr physical training labs. Prereq: 401 or permission of professor of military science.

403 Army Officership
The study of military leadership and contemporary military subjects that will prepare the student to perform the duties of a commissioned officer. This course focuses on final preparation for commissioning. Student will participate in spring Field Training Exercise (FTX) at local training area.
Sp Qtr. 3-1 hr cl, 1-2 hr leadership lab, 3-1 hr physical training labs, 1-4 day field training exercise. Prereq: 401, 402 or written permission of professor of military science.

693 Military Science Individual Studies
Military Science Individual Studies.
Au, Wi, Sp Qtr. Prereq: must be a contracted Cadet and have permission of the chairman. Repeatable to a maximum of 5 cr hrs.

104 Intermediate Modern Greek II
Continues the previous year's 101-103 sequence. The course helps students expand their vocabulary and improve their fluency in speaking the language.
Au Qtr. 5 cl. Prereq: 103. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course.

200 Athens: The Modern City
The history and culture of modern Athens. The way events such as wars and migration transformed the urban fabric of the city.
2-2 hr cl. GEC arts and hums cultures and ideas and social diversity - international issues (Western) course.

241 Culture of Contemporary Greece
A general survey of socio-cultural trends and issues in modern Greece through close analysis of literature and the other arts. 241H (honors) may be available. Wi, Sp Qtrs. 5 cl. Not open to students with credit for 341. GEC arts and hums cultures and ideas and social diversity - international issues (Western) course.

250H Greek Identities: Ancient and Modern
This class explores how Greeks defined themselves by comparing ethnic and national identity in ancient and modern Greece. What does it mean to be Greek? 2-2 hr cl. Prereq: Honors standing. Taught in English. GEC arts and hums lit course.

268 Folklore of Contemporary Greece
A general survey of socio-cultural trends and issues in modern Greece through close examination of ethnographies and other folk expressions.
Wi Qtr. GEC arts and hums VPA and social diversity - international issues (Western) course.

293 Individual Studies
Individual Studies.
Su, Au, Wi, Sp Qtr. Prereq: 104 or equiv or permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

294 Group Studies
Group Studies.
Au, Wi, Sp Qtr. Prereq. Permission of instructor. Repeatable to a maximum of 15 cr hrs.

367 Issues in Greek-American Society and Culture
Exploration of representative features of Greek-American culture and reflection on the social diversity in the United States.
Wi Qtr. 2-2 hr cl. Prereq: English 110 or 111 or equiv, and soph standing. GEC second writing and social diversity in the US course.

371 Modern Greek Literature in Translation
Review of the Modern Greek literary tradition of the last two centuries through representative works and from a theoretical perspective.
Sp Qtr. 2-2 hr cl. Prereq: Jr or Sr standing. GEC arts and hums lit and third writing course.

401 Advanced Modern Greek I
Introduces journalism, literary prose, and media. Students practice discussion and composition.
Wi Qtr. 5 cl. Prereq: 104.

402 Advanced Modern Greek II
Completes the language sequence. Students develop translation skills and continue practicing conversation and composition.
Sp Qtr. 5 cl. Prereq: 401.

628 Byzantine Greek Prose
Reading and analysis of prose texts representative of major developments and trends in Byzantine Greek writing from the 4th to the 15th century.
Au Qtr. 5 cl. Prereq: 402 or permission of instructor. Repeatable to a maximum of 10 cr hrs.

651 Contemporary Greek Prose
Reading and analysis of short stories and novels representative of major developments and trends in Greek prose of the 19th and 20th centuries.
Wi Qtr. 5 cl. Prereq: 402.

652 Contemporary Greek Poetry
Reading and analysis of short and longer poems representative of major developments and trends in Greek poetry of the 19th and 20th centuries.
Sp Qtr. 5 cl. Prereq: 402.

693 Individual Studies
Individual Studies.
Su, Au, Wi, Sp Qtr. Prereq. Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

694 Group Studies
Group Studies.
Au, Wi, Sp Qtr. Prereq. Permission of instructor. Repeatable to a maximum of 20 cr hrs.

697 Study at a Foreign Institution
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Au, Wi, Sp Qtr. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This course is Progress (P) graded. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

Modern Greek

101 Elementary Modern Greek I
Introduces students to the language, covering the basic skills of reading, understanding and writing.
Au Qtr. 5 cl. Not open 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 instructor. This course is available for EM credit. FL Admis Cond course.

102 Elementary Modern Greek II
Offers intensive study of grammar and syntax, with extensive oral and written practice.
Wi Qtr. 5 cl. Prereq: 101. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course.

104 Intermediate Modern Greek II
Offers grammar review and introduces longer prose texts.
Sp Qtr. 5 cl. Prereq: 102. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course.
Studies in Modern Greek Literature

Advanced study of specific literary periods, figures, and/or topics, involving extensive reading and discussion of appropriate primary and secondary sources. Wi, Sp Qtr.s: 4.5-cl. Prereq.: 5 or hrs of Modern Greek literature at the 600 level or equiv. Repeatable to a maximum of 15 or hrs.

Honors Research

A program of research for each student which includes individual conferences and which culminates in an honors thesis or oral defense. Su, Au, Wi, Sp Qtrs. Arr. Prereq.: Approved candidacy for graduation with distinction, which includes faculty advisor and ASC Honors Committee approval of project, a minimum 3.50 grade point ratio in the field of distinction, sr standing, and CYPH commensurate with honors program membership. Repeatable to a maximum of 15 or hrs. This course is graded S/U.

Seminar in Modern Greek Studies

Intensive, in-depth exploration of a selected topic or issue in Modern Greek literature, criticism, or intellectual culture. Wi, Sp Qtrs. 3-5-cl. Prereq.: Permission of instructor. Repeatable to a maximum of 15 or hrs.

Research in Modern Greek

Research for thesis purposes only. Su, Au, Wi, Sp Qtrs. Prereq.: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

Molecular and Cellular Biochemistry

Fundamentals of Medical Biochemistry

Basic structures and interactions of biomolecules in health and disease. Relevant organic chemistry included. Topics essential to human nutrition, dietetics, clinical chemistry, nursing, premedical education. Au Qtr. 3.15-hr cl. Prereq.: Chem 102 or 122.

Fundamentals of Medical Biochemistry and Molecular Biology

A continuation of 311. Wi Qtr. 3.15-hr cl. Prereq.: 311.

Dental Biochemistry

Chemistry and metabolism of carbohydrates, lipids, and proteins; digestion and absorption; elements of nutrition as they relate to dentistry, especially mineral and bone metabolism. Au Qtr. 4-cl. Prereq.: Chem 252 and enrollment in college of Dentistry.

Dental Biochemistry

Continuation of 641. Wi Qtr. 3-cl. Prereq.: 641 and enrollment in College of Dentistry.

Human Genetics

The principles of human genetics covering mapping of disease genes, defects causing human disease, the cloning of disease genes, gene therapy and transgenics. Sp Qtr. 3-cl. and clt. time arr. Prereq.: MolGen 500 or 606 or equiv. Not open to students with credit for MolGen 733 or Pathol 733. Cross-listed in Pathology and MolGen.

Advanced Biochemistry: Proteins


Advanced Biochemistry: Enzymes

An advanced treatment of enzyme biochemistry. Au Qtr. 1.5-hr cl. Prereq.: Biochem 615 and Chem 253, 255, and 521; or equiv. Not open to students with credit for Biochem 762 or Chem 762. Cross-listed in Biochemistry and Chemistry.

Advanced Biochemistry: Membranes and Bioenergetics


Advanced Biochemistry: Integration of Metabolism


Advanced Biochemistry: Physical Biochemistry

Diffusion, electrophoresis, sedimentation, light and x-ray scattering, x-ray and neutron diffraction, fluorescence, polarimetry, mass spectroscopy, and nuclear magnetic resonance. Wi, Sp Qtr. 2-cl. Prereq.: Chem 253, 255, 521 and Biochem 616; or equivs. Not open to students with credit for Biochem 765 or Chem 765. Cross-listed with Biochemistry and Chemistry.

Advanced Biochemistry: Nucleic Acid Chemistry and Structure

Reactions, synthesis, and conformations of nucleosides, nucleotides, oligonucleotides, and polynucleotides. Sp Qtr. 2-cl. Prereq.: Chem 253, 255, 521, and Biochem 615; or equivs. Not open to students with credit for Biochem 766 or Chem 766. Cross-listed with Biochemistry and Chemistry.
306 Molecular Genetics

591 DNA Finger Printing Workshops in Columbus UGRD 2
Public Schools
A service learning course whereby undergraduates mentor high school students in molecular biology workshops.
Sp Qtr. Repeatable to a maximum of 6 cr hrs. Undergraduates present workshops in Columbus Public Schools. Cross-listed in Biochemistry and Microbiology. Service learning course. This course is graded S/U.

601 Eukaryotic Molecular Genetics Laboratory UGRD 5
Current laboratory techniques used in the genetic and molecular analyses of Saccharomyces cerevisiae and Drosophila. Wi Qtr. 1 cr dur. 3-hr labs. Prereq: Biochem 511 or permission of instructor. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

602 Eukaryotic Cell and Developmental Biology Laboratory UGRD 5
Laboratory course emphasizing recent advances in techniques and methods central to cell biology and developmental biology of eukaryotes. Sp Qtr. 2 cr, 2-4 hr labs. Prereq: Biochem 511 or permission of instructor.

605 Molecular Genetics I UGRD 4
Hereditary information as sequence information; DNA replication, transcription, and translation; analysis and manipulation of genes at the molecular level; axenal, sexual reproduction in eukaryotes.
Wi Qtr. 3-1 hr cl, 1-hr recitation. Prereq: Math 152. Not open to students with credit for 500.

606 Molecular Genetics II UGRD 4
Sexual reproduction in prokaryotes, viruses and organelles; molecular mechanisms of DNA replication, repair, mutation, recombination, and expression; genome structure; molecular evolution.
Sp Qtr. 3-1 hr cl, 1-1 hr recitation. Prereq: 500 or 605.

607 Cell Biology UGRD 3
Analysis of the structure and function of cells and their components stressing genetic and biochemical approaches.
Au Qtr. 3-1 hr cl. Prereq: 500 or 606.

607H Honors Cell Biology UGRD 4
Analysis of the structure and function of cells and their components stressing genetic and biochemical approaches.
Au Qtr. 3-1 hr cl. Prereq: 500 or 606.

608 Genes and Development UGRD 3
Analysis of development using modern genetic approaches.
Wi Qtr. 3-1 hr cl. Prereq: 500 or 606.

622 Plant Molecular Biology UGRD 4
An in-depth survey of molecular biology of plants with emphasis on current research topics.
Wi Qtr. 3 cl, 1 hr discussion. Prereq: 500 and Biochem 511; or 605; or permission of instructor. Not open to students with credit for E32 or PCMB 622. Cross-listed in Plant Cellular and Molecular Biology.

632 Insect Molecular Genetics UGRD 3
Structure, genetics and methodology of insect genes and genomes.
Wi Qtr. Prereq: Biochem 511, MolGen 500 or equiv. Cross-listed in Entomology.

640 The Genetic Basis of Evolution UGRD 5
The modern theory of evolution and its underlying genetic basis.
Sp Qtr. 3.1-5 hr cl. Prereq: 500 or 606 or equiv. Not open to students with credit for E2OB 640. Cross-listed in Evolution, Ecology, and Organismal Biology.

650 Analysis and Interpretation of Biological Data I UGRD 5
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.
Au Qtr. 3-1 hr cl, 1-1 hr rec. 1 hr arr for computer analysis of data. Prereq: Math 150 or equiv and 15 or hrs at 300-level or higher in a dept of agriculture or in biological sciences.

660 Integrated Molecular and Cellular Biology for Non-Biologists I UGRD 5
Overview of molecular and cellular biology, focusing on molecular biology, biochemistry and genetics of single cells.
Au Qtr. Prereq: Biology 101 or permission of instructor. Not open to students with credit for MolGen 500 or 606 or 607.

661 Integrated Molecular and Cellular Biology for Non-Biologists II UGRD 5
Overview of molecular and cellular biology focuses on tissues, organisms and their interactions.
Wi Qtr. Prereq: 660. Not open to students with credit for 500 or 605 or 606.

693 Individual Studies GRAD 2-10
Individual work in the field of the chosen problems.
Su, Au, Wi, Sp Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 35 cr hrs. This course is graded S/U.

699 Undergraduate Research in Molecular Genetics UGRD 1.1-15
Undergraduate research in molecular genetics.
Su, Au, Wi, Sp Qtr. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 35 cr hrs. This course is graded S/U.

700 Systems of Genetic Analysis UGRD 3
Analysis of several major systems used in modern experimental genetics.
Au Qtr. 3-1 hr cl. Prereq: 606 or equiv.

701 Molecular Genetics: DNA Transactions UGRD 3
Survey of experimental methods of molecular genetics and their application to the elucidation of pathways of DNA replication, mutation, repair, and recombination.
Au Qtr. 3 cl. Prereq: 500 or 606, Biochem 511 or equiv; and 10 additional cr hrs in the bio sci above the 300 level.

705 Advances in Cell Biology UGRD 3
An advanced study of selected key areas of research in eukaryotic cell biology.
Wi Qtr. 3-1 hr cl. Prereq: 607 and 701 or equiv.

711 Molecular Evolution UGRD 3
Evolution and population genetics as seen at the molecular level: phenomena, concepts, methods of study, and implications for molecular biology and other disciplines.
Wi Qtr. 3 cl. Prereq: 500 or 606, and 640 or 701 or EEOB 400 or EEOB 640 or equiv and permission of instructor. Not open to students with credit for EEOB 711. Cross-listed in Evolution, Ecology, and Organismal Biology.

715 Developmental Genetics UGRD 3
A study of the regulation of developmentally significant genes and cellular interactions involved in differentiation and pattern formation in Drosophila and metazoa.
Sp Qtr. 3 cl. Prereq: 608, 700, and 701 or equiv.

733 Human Genetics UGRD 3
The principles of human genetics covering mapping of disease genes, defects causing human disease, the cloning of disease genes, gene therapy and transgenics.
Sp Qtr. 3 cl. Prereq: 500 or 606 or equiv. Not open to students with credit for MolBioch 733 or Pathol 733. Cross-listed in MolBioch and Patholl.

734 Cancer Genetics: High Throughput Technologies UGRD 4
An introduction to the high throughput technologies and bioinformatics in Cancer Genetics.
Sp Qtr. 2-2 hr cl. Prereq: Biochem 511 or equiv. Not open to students with credit for MV/MG 734. Offered every two years. Cross-listed in Molecular Virology, Immunology and Medical Genetics.

770 Molecular Biology of Animal and Plant Viruses UGRD 3
An advanced virology course using selected animal and plant.
Sp Qtr. 3 cl. Prereq: Biochem 702 or equiv with permission of instructor.

783H Honors Research GRAD 3-5
A program of reading and research for each student with individual conferences, reports, and honors thesis.
Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the courses in biological sciences 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. At least 2 qts are required of candidates for the degree BA or BS with distinction in MolGen. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

795 Special Topics in Molecular Genetics UGRD 2
Lecture/discussion in a seminar format of publications; current research or research techniques in molecular genetics, cell biology, or developmental biology.
Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the courses in biological sciences 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. At least 2 qts are required of candidates for the degree BA or BS with distinction in MolGen. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 56 cr hrs. This course is graded S/U.

800 Molecular Genetics Seminar GRAD 1-3
Faculty, graduate students, and outside speakers will participate.
Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

801 Research Opportunities in Molecular Genetics GRAD 2
Discussion of research projects being carried out in laboratories of the department.
Au Qtr. 1-2 hr cl. Prereq: Grad standing in MolGen. This course is graded S/U. This course is graded S/U.

804 Molecular Genetics Laboratory Rotations GRAD 3
Laboratory research procedures, literature readings, and discussions to familiarize the students with a specific research area.
Su, Au, Wi, Sp Qtrs. Arr lab. Prereq: Grad standing in MolGen. Repeatable to a maximum of 9 cr hrs. Required of all 1st yr molecular genetics grad students. This course is graded S/U.

811 Eukaryotic Genome: Structure and Expression GRAD 3
Current research on the structure and expression of genes in higher eukaryotes.
Wi Qtr. 3 cl. Prereq: Biochem 702 or equiv. Not open to students with credit for MolBioch 811. Cross-listed in Molecular and Cellular Biochemistry.

880.01 Research Seminar: Developmental Genetics GRAD 1-3
Intensive study of problems in graduate fields of specialization: Developmental Genetics.
Sp Qtr. 10 grad cr hrs or permission of instructor. Repeatable to a maximum of 30 cr hrs.

880.02 Research Seminar: Cell Biology GRAD 1-3
Intensive study of problems in graduate fields of specialization: Cell Biology.
Sp Qtr. Prereq: 10 grad cr hrs or permission of instructor. Repeatable to a maximum of 30 cr hrs.
880.03 Research Seminar: Molecular Evolution/Population Genetics
Intensive study of problems in graduate fields of specialization: Molecular Evolution/Population Genetics. * Prereq: 10 grad cr hrs or permission of instructor. Repeatable to a maximum of 30 cr hrs.

880.05 Research Seminar: DNA Replication, Recombination, Repair
Intensive study of problems in graduate fields of specialization: DNA Replication, Recombination, Repair. * Prereq: 10 grad cr hrs or permission of instructor. Repeatable to a maximum of 30 cr hrs.

880.06 Research Seminar: Gene Expression: Transcriptional Control
Intensive study of problems in graduate fields of specialization: Gene Expression: Transcriptional Control. Wi Qtr. Prereq: 10 grad cr hrs or permission of instructor. Repeatable to a maximum of 30 cr hrs.

880.07 Research Seminar: Gene Expression: Post-Transcriptional Control
Intensive study of problems in graduate fields of specialization: Gene Expression: Post-Transcriptional Control. Sp Qtr. 3 cl. Prereq: 10 grad cr hrs or permission of instructor. Not open to students with credit for MolBioch 880.07 or VetBios 880.07. Repeatable to a maximum of 30 cr hrs. Cross-listed in Molecular and Cellular Biochemistry and Veterinary Biosciences.

880.08 Research Seminar: Yeast Molecular Biology
Intensive study of problems in graduate fields of specialization: Yeast Molecular Biology. * Prereq: 10 grad cr hrs or permission of instructor. Repeatable to a maximum of 30 cr hrs.

880.10 Research Seminar: Human Genetics
Intensive study of problems in graduate fields of specialization: Human Genetics. * Prereq: 10 grad cr hrs or permission of instructor. Repeatable to a maximum of 30 cr hrs.

880.11 Research Seminar: Transgenic Models
Intensive study of problems in graduate fields of specialization: Transgenic Models. * Prereq: 10 grad cr hrs or permission of instructor. Repeatable to a maximum of 30 cr hrs.

999 Research in Genetics
Research for thesis and dissertation purposes only. Su, Au, Wi, Sp Qtrs. 1-2 cr cl. Repeatable. This course is graded S/U.

Molecular Virology, Immunology, and Med Genetics

600 Evolution of Emerging Viruses
Biochemical, molecular, cellular, clinical, and epidemiological aspects of emerging viruses, with an emphasis on how each plays a role in virus evolution and emergence. Sp Qtr. 2 hr cl. Prereq: 2 yrs of course work in the biological sciences recommended. Not open to students with credit for MicrBio 600.

610 Fundamental Concepts in Medical Microbiology
Basic concepts of bacteria, fungi, viruses, parasites, and unconventional agents, and includes an outside-class special topics assignment in medical microbiology. Su Qtr. Prereq: Biology 101 and Chem 101 or equivs. Not open to students with credit for a course in microbiology. Computer with Internet access helpful.

625 Medical Microbiology
Basic principles of Medical Microbiology with direct application to infections of man. Au Qtr. 40-hr lec. Not open to students with credit for MicrBio 625.

626 Medical Microbiology
A more extensive and intensive application of basic principles of medical microbiology to infectious diseases. Wi Qtr. 5-hr lec. 25-hr discussion. Prereq: 625 or MicrBio 625 or permission of instructor. Not open to students with credit for MicrBio 626.

647 Eukaryotic Pathogens
Pathogenesis virulence factors, host-parasite interactions, ecology, epidemiology, immunity, laboratory diagnosis, and chemotherapy of eukaryotic pathogens. Au Qtr. 2.1-5 hr cl. Prereq: MicroBio 520 or 524, or Biochem 511, or MolGen 500 or 501, or permission of instructor. Not open to students with credit for MicroBio 647. Cross-listed in Microbiology.

693 Individual Studies
Individual minor investigation in the field of virology, immunology, microbial pathogenesis or cancer genetics. Su, Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

694 A Group Studies
Group Studies on special topics in virology, immunology, microbial pathogenesis or cancer genetics. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

701 Cellular and Molecular Immunology
Cellular and molecular mechanisms of immune response, cell recognition and communication, molecular biology of cell recognition structures, cytokines, and effector mechanisms. Au Qtr. 5 cl. Prereq: Biochem 613, MolGen 501, or equiv. Not open to students with credit for MedMicr 701 or Microbiol 701. Cross-listed in Microbiology.

727 Epidemiologic Methods for Medical Genetics
An introduction to the study of genetic influences in disease, with an emphasis on study design and statistical methods. Sp Qtr. Prereq: Prereq: Standing or permission of instructor.

734 Cancer Genetics: High Throughput Technologies

747 Molecular Biology of Eucaryotic Microbial Pathogens
Antigenic variation, composition of non-mammalian surfaces, responses to environmental signals, mechanisms leading to damage and survival within the host, emphasis on yeast and parasitic protozoa. * Sp Qtr. 2-3 hr cl. Prereq: Biochem 702. Not open to students with credit for MedMicr 747.

750 Principles of Neuroimmunology
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). * Sp Qtr. 2-3 hr cl. Prereq: 701 or MedMicr 701, NeuroSci 725 or NeuroSci 725 or NeuroGSP 725 or equiv, or permission of instructor. Not open to students with credit for NeuroGSP 750. Cross-listed in Neuroscience Graduate Studies Program.

754 Fundamentals of Molecular Virology
Primary emphasis is on molecular biology of animal/human viruses. Covers the strategy of virus replication with special emphasis on the molecular biology of genomic replication and virus gene expression. * Sp Qtr. 3-1.5 hr cl. Prereq: MolGen 701, IBGP 701 and 702, Biochem 702 or equiv. Not open to students with credit for MedMicr 754 or VetBios 754. Cross-listed in Veterinary Biosciences.

757 Diagnostic and Clinical Virology
Laboratory procedures used for the diagnosis of human viral infections. Sp Qtr. 1 cl, 3 hr lab. Prereq: Enrollment in College of Medicine or written permission of instructor. Not open to students with credit for MedMicr 757.

793.01 Individual Studies: Student Seminar in Molecular Virology, Immunology, and Medical Genetics
Student and post-doctoral presentations of research. Au, Wi, Sp Qtrs. 1 hr./week, 1 cr./qt. Prereq: Enrollment in College of Medicine or permission of instructor. When registration is for 3 professional cr hrs, an additional 3 hr professional course must be taken. Required in years 2-5 of graduate enrollment. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

793.06 Individual Studies: Problems in Molecular Virology, Immunology and Medical Genetics
Problems in Molecular Virology, Immunology and Medical Genetics. Au, Wi. Sp Qtrs. Prereq: Enrollment in College of Medicine or permission of instructor. When registration is for 3 professional cr hrs, an additional 3 hr professional course must be taken. 1, 2, 3, or 4 months; offered all months (prof cr). Repeatable to a maximum of 15 hr cr. This course is graded S/U.

793.07 Individual Studies: Diagnostic and Clinical Microbiology
Diagnosis and Clinical Microbiology. Su, Au, Wi, Sp Qtrs. Prereq: Enrollment in College of Medicine or permission of instructor. Prereq: 626 or MedMicr 626 and permission of instructor. When registration is for 3 professional cr hrs, an additional 3 hr professional course must be taken. Experience in isolation and identification of micro-organisms from clinical specimens 1, 2, 3, or 4 months (full-time prof cr). Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

794 Group Studies
One month, offered all months (prof cr). Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable. When registration is for 3 professional cr hrs, an additional 3 hr or professional course must be taken. This course is graded S/U.

801 Selected Topics in Advanced Immunology
Specific topics will vary from year to year in the general areas of neuroimmunology, molecular immunology, immune regulation, and cellular immunity. Wi, Sp Qtr. 3 cl. Prereq: 701 or Microbiol 701 or equiv course in basic immunology or permission of instructor. Repeatable to a maximum of 9 cr hrs. Intended for advanced grad students, medical residents, and postdoctoral fellows.
Molecular Virology, Immunology, and Med Genetics

804 Instrumentation and Techniques in Molecular Virology. Immunology. Immunology, and cancer genetics. Theory and application of techniques used to purify and characterize nucleic acids, lipids, and proteins; theory and operation of equipment and instruments used. ** Wi Qtr. 2.2-hr cl. 12 lab hrs. Prereq: Med/625, 626; and MolBioch 611, 612, or equiv; and written permission of instructor. Not open to students with Med/Micr 804.
814.01 Current Topics Molecular Virology GRAD 1 Discussion of current literature in the field of molecular virology. Au, Wi, Sp Qtrs. 1 cl. Prereq: Grad standing in program or permission of instructor. May count toward MMI 814 requirement (3 credits). Meets once per week for student discussions of journal articles in a journal club format. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.
814.02 Current Topics Immunology GRAD 1 Discussion of current literature in the field of immunology. Au, Wi, Sp Qtrs. 1 cl. Prereq: Grad standing in program or permission of instructor. May count toward MMI 814 requirement (3 credits). Meets once per week for student discussions of journal articles in a journal club format. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.
814.03 Current Topics Human Genetics GRAD 1 Discussion of current literature in the field of human genetics. Au, Wi, Sp Qtrs. 1 cl. Prereq: Grad standing in program or permission of instructor. May count toward MMI 814 requirement (3 credits). Meets once per week for student discussions of journal articles in a journal club format. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.
814.04 Current Topics in Microbial Pathogenesis GRAD 1 Discussion of current literature in the field of microbial pathogenesis. Sp Qtr. 1 cl. Prereq: Grad standing in program or permission of instructor. May count toward MMI 814 requirement (3 credits). Meets once per week for student discussions of journal articles in a journal club format. Repeatable to a maximum of 15 cr hrs. This course is graded S/U. Cross listed with MicrBioch and BiGAP.
814.05 Current Topics in Integrative Immunobiology GRAD 1 Discussion of current literature in the field of integrative immunobiology. Au, Wi, Sp Qtrs. 1 cl. Prereq: Grad standing in program or permission of instructor. May count toward MMI 814 requirement (3 credits). Meets once per week for student discussions of journal articles in a journal club format. Repeatable to a maximum of 15 cr hrs. This course is graded S/U. Cross listed with MicrBioch and BiGAP.
827 Biochemical Mechanisms of Carcinogenesis GRAD 3 Defines the multi-stage model of cancer, signal transduction pathways used by tumor cells, genetics of cancer susceptibility and gene mutations in tumors. * Sp Qtr. 2.1-hr cl. Prereq: 1 yr of grad Biochem or permission of instructor. Not open to students with credit for Med/Micr 827 or MolBioch 827.
831 Eukaryotic Genome: Structure and Expression GRAD 3 Current research on the structure and expression of genes in higher eukaryotes. Wi Qtr. Prereq: Biochem 702 or equiv. Not open to students with credit for Biochem 781, or Biochem 631, MolGen 831 or MolBioch 831. Cross-listed in Molecular and Cellular Biochemistry and Molecular Genetics.
833 Current Immunological Techniques GRAD 4 Current techniques in cellular and humoral immunity as applicable in research conducted by students. * Wi Qtr. 2.4-hr labs. Prereq: 701 or Med/Micr 701 or equiv course in basic immunology. Not open to students with credit for Med/Micr 833 or MicrBioch 833. Cross-listed in Microbiology. Next offering 2009.
841 Viral Pathogenesis and Oncogenesis GRAD 5 Cellular, immunological and molecular mechanisms involved with virus pathogenesis in animals/humans. * Au Qtr. 5 cl. Not open to students with credit for Med/Micr 841 or Vet Bios 841 or Vet Path 841. Cross-listed in Veterinary Biosciences.
845 History of Immunology GRAD 3 To understand immunology and pertinent research, students must understand its history so to appreciate where the field of immunology started, the progress and discoveries made. Prereq: 701 recommended. This course is graded S/U. Cross listed with Surgery 845.
847 Cellular Mechanisms and Pathogenesis of Inflammation GRAD 3 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: 701 or Med Micr 701 or MicrBioch 701. Not open to students with credit for Med Micr 847. Cross-listed in Pathology.
850 Advanced Seminar in Molecular Virology, Immunology and Medical Genetics GRAD 1 Advanced seminar topics related to molecular virology, immunology, pathogenesis or genetics. Au, Wi, Sp Qtrs. 1 cl. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.
874 Advanced Topics in Molecular Biology of Eukaryotes GRAD 3 Graduate level course to highlight advanced topics in molecular biology of eukaryotes, particularly as it relates to cancer. * Sp Qtr. 1.25-hr cl. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.
999 Research in Molecular Virology, Immunology and Medical Genetics GRAD 1-18 Research for thesis or dissertation purposes only. Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in M/V/MG. Repeatable. This course is graded S/U.

Molecular, Cellular, and Developmental Biology

693 Individual Studies GRAD 2-15 Individual research and problem solving in the field of molecular, cellular, and developmental biology. Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 35 cr hrs. This course is graded S/U.
697 Study at a Foreign Institution UGRD 1-15 An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of program director. This course is Progress (P) graded. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.
800 Seminar in Molecular, Cellular, and Developmental Biology GRAD 1 Seminars will be presented by faculty, graduate students, and outside speakers. Au, Wi, Sp Qtrs. 1 cl. Prereq: Grad standing. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.
890 Interdepartmental Seminar in Molecular, Cellular, and Developmental Biology GRAD 2 Students will present oral reports and lead discussion on research progress in specific areas of molecular, cellular, and developmental biology. Au, Wi, Sp Qtrs. 1-2.5-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.
999 Research in Molecular, Cellular, and Developmental Biology GRAD 1-18 Research for thesis and dissertation purposes only. Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

Music

101.01 Applied Music for Nonmajors Group Instruction UGRD 2 I: Beginning Piano Group instruction for students who have had no previous piano study. * Open only to non-music majors. VPA Admis Cond courses. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.
101.02 Applied Music for Nonmajors Group Instruction UGRD 2 I: Voice Voice. Open only to non-music majors. VPA Admis Cond courses. Repeatable to a maximum of 4 cr hrs. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.
101.37 Applied Music for Nonmajors Group Instruction UGRD 2 I: Guitar Introduction course in guitar for nonmusic major. Includes chording, strumming and melodic playing. * Su, Au, Wi, Sp Qtrs. 2 cl. 2 contact hrs. Open only to non-music majors. VPA Admis Cond course. Repeatable to a maximum of 4 cr hrs. May be used towards the minor in music. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.
101.41 Applied Music for Nonmajors Group Instruction UGRD 2 I: Secondary Flute Proper technique, standard repertoire, and play in flute ensemble. Prereq: Intermediate level flute skills. Open only to non-music majors. VPA Admis Cond courses. Repeatable to a maximum of 4 cr hrs. This course is graded S/U. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.
102.01 Applied Music for Nonmajors Group Instruction UGRD 2 II: Piano Piano. Prereq: 101.01. Open only to non-music majors. VPA Admis Cond courses. Repeatable to a maximum of 4 cr hrs.
110.11 Applied Music (Prospective Music Majors): Piano UGRD 2
An elementary applied music course restricted to prospective music majors whose audition scores indicate the need for systematic instruction to prepare for 201: Piano. Prereq: Audition and approval of the director of the School of Music. Does not count toward a music major. Repeatable to a maximum of 4 cr hrs.

110.12 Applied Music (Prospective Music Majors): Jazz Piano UGRD 2
An elementary applied music course restricted to prospective music majors whose audition scores indicate the need for systematic instruction to prepare for 201: Jazz Piano. Prereq: Audition and approval of the director of the School of Music. Does not count toward a music major. Repeatable to a maximum of 4 cr hrs.

110.21 Applied Music (Prospective Music Majors): Voice UGRD 2
An elementary applied music course restricted to prospective music majors whose audition scores indicate the need for systematic instruction to prepare for 201: Voice. Prereq: Audition and approval of the director of the School of Music. Does not count toward a music major. Repeatable to a maximum of 4 cr hrs.

110.31 Applied Music (Prospective Music Majors): Violin UGRD 2
An elementary applied music course restricted to prospective music majors whose audition scores indicate the need for systematic instruction to prepare for 201: Violin. Prereq: Audition and approval of the director of the School of Music. Does not count toward a music major. Repeatable to a maximum of 4 cr hrs.

110.32 Applied Music (Prospective Music Majors): Viola UGRD 2
An elementary applied music course restricted to prospective music majors whose audition scores indicate the need for systematic instruction to prepare for 201: Viola. Prereq: Audition and approval of the director of the School of Music. Does not count toward a music major. Repeatable to a maximum of 4 cr hrs.

110.33 Applied Music (Prospective Music Majors): Cello UGRD 2
An elementary applied music course restricted to prospective music majors whose audition scores indicate the need for systematic instruction to prepare for 201: Cello. Prereq: Audition and approval of the director of the School of Music. Does not count toward a music major. Repeatable to a maximum of 4 cr hrs.

110.34 Applied Music (Prospective Music Majors): Double Bass UGRD 2
An elementary applied music course restricted to prospective music majors whose audition scores indicate the need for systematic instruction to prepare for 201: Double Bass. Prereq: Audition and approval of the director of the School of Music. Does not count toward a music major. Repeatable to a maximum of 4 cr hrs.

110.35 Applied Music (Prospective Music Majors): Guitar UGRD 2
An elementary applied music course restricted to prospective music majors whose audition scores indicate the need for systematic instruction to prepare for 201: Guitar. Prereq: Audition and approval of the director of the School of Music. Does not count toward a music major. Repeatable to a maximum of 4 cr hrs.

110.36 Applied Music (Prospective Music Majors): Bass UGRD 2
An elementary applied music course restricted to prospective music majors whose audition scores indicate the need for systematic instruction to prepare for 201: Bass. Prereq: Audition and approval of the director of the School of Music. Does not count toward a music major. Repeatable to a maximum of 4 cr hrs.

110.41 Applied Music (Prospective Music Majors): Flute UGRD 2
An elementary applied music course restricted to prospective music majors whose audition scores indicate the need for systematic instruction to prepare for 201: Flute. Prereq: Audition and approval of the director of the School of Music. Does not count toward a music major. Repeatable to a maximum of 4 cr hrs.

110.42 Applied Music (Prospective Music Majors): Oboe UGRD 2
An elementary applied music course restricted to prospective music majors whose audition scores indicate the need for systematic instruction to prepare for 201: Oboe. Prereq: Audition and approval of the director of the School of Music. Does not count toward a music major. Repeatable to a maximum of 4 cr hrs.

110.43 Applied Music (Prospective Music Majors): Clarinet UGRD 2
An elementary applied music course restricted to prospective music majors whose audition scores indicate the need for systematic instruction to prepare for 201: Clarinet. Prereq: Audition and approval of the director of the School of Music. Does not count toward a music major. Repeatable to a maximum of 4 cr hrs.

110.44 Applied Music (Prospective Music Majors): Bass Clarinet UGRD 2
Elementary applied music course restricted to prospective music majors whose audition scores indicate the need for systematic instruction to prepare for 201: Bass Clarinet. Prereq: Audition and approval of the director of the School of Music. Does not count toward a music major. Repeatable to a maximum of 4 cr hrs.

110.45 Applied Music (Prospective Music Majors): Saxophone UGRD 2
Elementary applied music course restricted to prospective music majors whose audition scores indicate the need for systematic instruction to prepare for 201: Saxophone. Prereq: Audition and approval of the director of the School of Music. Does not count toward a music major. Repeatable to a maximum of 4 cr hrs.

110.46 Applied Music (Prospective Music Majors): Bassoon UGRD 2
Elementary applied music course restricted to prospective music majors whose audition scores indicate the need for systematic instruction to prepare for 201: Bassoon. Prereq: Audition and approval of the director of the School of Music. Does not count toward a music major. Repeatable to a maximum of 4 cr hrs.

110.47 Applied Music (Prospective Music Majors): Jazz UGRD 2
Elementary applied music course restricted to prospective music majors whose audition scores indicate the need for systematic instruction to prepare for 201: Jazz. Prereq: Audition and approval of the director of the School of Music. Does not count toward a music major. Repeatable to a maximum of 4 cr hrs.

110.51 Applied Music (Prospective Music Majors): Horn UGRD 2
Elementary applied music course restricted to prospective music majors whose audition scores indicate the need for systematic instruction to prepare for 201: Horn. Prereq: Audition and approval of the director of the School of Music. Does not count toward a music major. Repeatable to a maximum of 4 cr hrs.

110.52 Applied Music (Prospective Music Majors): Trumpet UGRD 2
Elementary applied music course restricted to prospective music majors whose audition scores indicate the need for systematic instruction to prepare for 201: Trumpet. Prereq: Audition and approval of the director of the School of Music. Does not count toward a music major. Repeatable to a maximum of 4 cr hrs.

110.53 Applied Music (Prospective Music Majors): Trombone UGRD 2
Elementary applied music course restricted to prospective music majors whose audition scores indicate the need for systematic instruction to prepare for 201: Trombone. Prereq: Audition and approval of the director of the School of Music. Does not count toward a music major. Repeatable to a maximum of 4 cr hrs.

110.54 Applied Music (Prospective Music Majors): Euphonium UGRD 2
Elementary applied music course restricted to prospective music majors whose audition scores indicate the need for systematic instruction to prepare for 201: Euphonium. Prereq: Audition and approval of the director of the School of Music. Does not count toward a music major. Repeatable to a maximum of 4 cr hrs.

110.55 Applied Music (Prospective Music Majors): Tuba UGRD 2
Elementary applied music course restricted to prospective music majors whose audition scores indicate the need for systematic instruction to prepare for 201: Tuba. Prereq: Audition and approval of the director of the School of Music. Does not count toward a music major. Repeatable to a maximum of 4 cr hrs.

110.56 Applied Music (Prospective Music Majors): Jazz Trumpet UGRD 2
Elementary applied music course restricted to prospective music majors whose audition scores indicate the need for systematic instruction to prepare for 201: Jazz Trumpet. Prereq: Audition and approval of the director of the School of Music. Does not count toward a music major. Repeatable to a maximum of 4 cr hrs.

110.57 Applied Music (Prospective Music Majors): Jazz Trombone UGRD 2
Elementary applied music course restricted to prospective music majors whose audition scores indicate the need for systematic instruction to prepare for 201: Jazz Trombone. Prereq: Audition and approval of the director of the School of Music. Does not count toward a music major. Repeatable to a maximum of 4 cr hrs.

110.71 Applied Music (Prospective Music Majors): Percussion UGRD 2
Elementary applied music course restricted to prospective music majors whose audition scores indicate the need for systematic instruction to prepare for 201: Percussion. Prereq: Audition and approval of the director of the School of Music. Does not count toward a music major. Repeatable to a maximum of 4 cr hrs.
310  Music

110.91  Applied Music (Prospective Music Majors): Harp  UGRD  2
Elementary applied music course restricted to prospective music majors whose audition scores indicate the need for systematic instruction to prepare for 201.
Prereq: Audition and approval of the director of the School of Music. Does not count toward a music major. Repeatable to a maximum of 4 cr hrs.

110.98  Applied Music for Nonmajors Group Instruction  UGRD  2
II: variable subject
An elementary applied music course restricted to prospective music majors; taken as a companion course to 110.xx when needed.
Prereq: Audition and approval of the Director of the School of Music. Does not count toward a music major.

121  Elementary Music Theory and Aural Training  UGRD  5
An introduction to the fundamentals of music, music reading, and aural musicianship.
Au Qtr. 5 cr. Not open for credit to music majors. May not be substituted for 270. VPA Admis Cond course.

200.11  Applied Music (Secondary): Piano  UGRD  1-2
Fundamental applied music instruction in areas other than a student's major or principal area:
Prereq: Music major; open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Prereq: 266.01. Repeatable to a maximum of 12 cr hrs.

200.12  Applied Music (Secondary): Jazz Piano  UGRD  1-2
Fundamental applied music instruction in areas other than a student's major or principal area:
Jazz Piano.
Prereq: Music major; open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 12 cr hrs.

200.21  Applied Music (Secondary): Voice  UGRD  1-2
Fundamental applied music instruction in areas other than a student's major or principal area:
Voice.
Prereq: Music major; open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 12 cr hrs.

200.31  Applied Music (Secondary): Violin  UGRD  1-2
Fundamental applied music instruction in areas other than a student's major or principal area:
Violin.
Prereq: Music major; open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 12 cr hrs.

200.33  Applied Music (Secondary): Cello  UGRD  1-2
Fundamental applied music instruction in areas other than a student's major or principal area:
Cello.
Prereq: Music major; open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 12 cr hrs.

200.34  Applied Music (Secondary): Double Bass  UGRD  1-2
Fundamental applied music instruction in areas other than a student's major or principal area:
Double Bass.
Prereq: Music major; open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 12 cr hrs.

200.35  Applied Music (Secondary): Guitar  UGRD  1-2
Fundamental applied music instruction in areas other than a student's major or principal area:
Guitar.
Prereq: Music major; open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 12 cr hrs.

200.36  Applied Music (Secondary): Jazz Bass  UGRD  1-2
Fundamental applied music instruction in areas other than a student's major or principal area:
Jazz Bass.
Prereq: Music major; open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 12 cr hrs.

200.37  Applied Music (Secondary): Jazz Guitar  UGRD  1-2
Fundamental applied music instruction in areas other than a student's major or principal area:
Jazz Guitar.
Prereq: Music major; open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 12 cr hrs.

200.41  Applied Music (Secondary): Flute  UGRD  1-2
Fundamental applied music instruction in areas other than a student's major or principal area:
Flute.
Prereq: Music major; open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 12 cr hrs.

200.42  Applied Music (Secondary): Oboe  UGRD  1-2
Fundamental applied music instruction in areas other than a student's major or principal area:
Oboe.
Prereq: Music major; open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 12 cr hrs.

200.43  Applied Music (Secondary): Clarinet  UGRD  1-2
Fundamental applied music instruction in areas other than a student's major or principal area:
Clarinet.
Prereq: Music major; open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 12 cr hrs.

200.44  Applied Music (Secondary): Bass Clarinet  UGRD  1-2
Fundamental applied music instruction in areas other than a student's major or principal area:
Bass Clarinet.
Prereq: Music major; open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 12 cr hrs.

200.45  Applied Music (Secondary): Saxophone  UGRD  1-2
Fundamental applied music instruction in areas other than a student's major or principal area:
Saxophone.
Prereq: Music major; open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 12 cr hrs.

200.46  Applied Music (Secondary): Bassoon  UGRD  1-2
Fundamental applied music instruction in areas other than a student's major or principal area:
Bassoon.
Prereq: Music major; open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 12 cr hrs.

200.47  Applied Music (Secondary): Jazz Saxophone  UGRD  1-2
Fundamental applied music instruction in areas other than a student's major or principal area:
Jazz Saxophone.
Prereq: Music major; open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 12 cr hrs.

200.51  Applied Music (Secondary): Horn  UGRD  1-2
Fundamental applied music instruction in areas other than a student's major or principal area:
Horn.
Prereq: Music major; open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 12 cr hrs.

200.52  Applied Music (Secondary): Trumpet  UGRD  1-2
Fundamental applied music instruction in areas other than a student's major or principal area:
Trumpet.
Prereq: Music major; open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 12 cr hrs.

200.53  Applied Music (Secondary): Trombone  UGRD  1-2
Fundamental applied music instruction in areas other than a student's major or principal area:
Trombone.
Prereq: Music major; open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 12 cr hrs.

200.54  Applied Music (Secondary): Euphonium  UGRD  1-2
Fundamental applied music instruction in areas other than a student's major or principal area:
Euphonium.
Prereq: Music major; open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 12 cr hrs.

200.55  Applied Music (Secondary): Tuba  UGRD  1-2
Fundamental applied music instruction in areas other than a student's major or principal area:
Tuba.
Prereq: Music major; open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 12 cr hrs.

200.56  Applied Music (Secondary): Jazz Trumpet  UGRD  1-2
Fundamental applied music instruction in areas other than a student's major or principal area:
Jazz Trumpet.
Prereq: Music major; open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 12 cr hrs.

200.57  Applied Music (Secondary): Jazz Trombone  UGRD  1-2
Fundamental applied music instruction in areas other than a student's major or principal area:
Jazz Trombone.
Prereq: Music major; open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 12 cr hrs.

200.71  Applied Music (Secondary): Percussion  UGRD  1-2
Fundamental applied music instruction in areas other than a student's major or principal area:
Percussion.
Prereq: Music major; open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 12 cr hrs.

200.72  Applied Music (Secondary): Jazz Percussion  UGRD  1-2
Fundamental applied music instruction in areas other than a student's major or principal area:
Jazz Percussion.
Prereq: Music major; open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 12 cr hrs.

200.91  Applied Music (Secondary): Harp  UGRD  1-2
Fundamental applied music instruction in areas other than a student's major or principal area:
Harp.
Prereq: Music major; open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 12 cr hrs.
201.11 Applied Music (Principal): Piano  
UGRD 2  
Instruction in applied music to develop musicianship, performance, and a wide reading knowledge of music literature: Piano.  
Prereq: Passing of School of Music entrance audition and test. Required of students in all music curricula, except BA, to a minimum of 6 qtr hrs. Open only to music majors. This course available for EM credit. Repeatable to a maximum of 8 cr hrs.

201.12 Applied Music (Principal): Jazz Piano  
UGRD 2  
Instruction in applied music to develop musicianship, performance, and a wide reading knowledge of music literature: Jazz Piano.  
Prereq: Passing of School of Music entrance audition and test. Required of students in all music curricula, except BA, to a minimum of 6 qtr hrs. Open only to music majors. This course available for EM credit. Repeatable to a maximum of 8 cr hrs.

201.21 Applied Music (Principal): Voice  
UGRD 2  
Instruction in applied music to develop musicianship, performance, and a wide reading knowledge of music literature: Voice.  
Prereq: Passing of School of Music entrance audition and test. Required of students in all music curricula, except BA, to a minimum of 6 qtr hrs. Open only to music majors. This course available for EM credit. Repeatable to a maximum of 8 cr hrs.

201.31 Applied Music (Principal): Violin  
UGRD 2  
Instruction in applied music to develop musicianship, performance, and a wide reading knowledge of music literature: Violin.  
Prereq: Passing of School of Music entrance audition and test. Required of students in all music curricula, except BA, to a minimum of 6 qtr hrs. Open only to music majors. This course available for EM credit. Repeatable to a maximum of 8 cr hrs.

201.32 Applied Music (Principal): Viola  
UGRD 2  
Instruction in applied music to develop musicianship, performance, and a wide reading knowledge of music literature: Viola.  
Prereq: Passing of School of Music entrance audition and test. Required of students in all music curricula, except BA, to a minimum of 6 qtr hrs. Open only to music majors. This course available for EM credit. Repeatable to a maximum of 8 cr hrs.

201.33 Applied Music (Principal): Cello  
UGRD 2  
Instruction in applied music to develop musicianship, performance, and a wide reading knowledge of music literature: Cello.  
Prereq: Passing of School of Music entrance audition and test. Required of students in all music curricula, except BA, to a minimum of 6 qtr hrs. Open only to music majors. This course available for EM credit. Repeatable to a maximum of 8 cr hrs.

201.34 Applied Music (Principal): Double Bass  
UGRD 2  
Instruction in applied music to develop musicianship, performance, and a wide reading knowledge of music literature: Double Bass.  
Prereq: Passing of School of Music entrance audition and test. Required of students in all music curricula, except BA, to a minimum of 6 qtr hrs. Open only to music majors. This course available for EM credit. Repeatable to a maximum of 8 cr hrs.

201.36 Applied Music (Principal): Jazz Bass  
UGRD 2  
Instruction in applied music to develop musicianship, performance, and a wide reading knowledge of music literature: Jazz Bass.  
Prereq: Passing of School of Music entrance audition and test. Required of students in all music curricula, except BA, to a minimum of 6 qtr hrs. Open only to music majors. This course available for EM credit. Repeatable to a maximum of 8 cr hrs.

201.37 Applied Music (Principal): Jazz Guitar  
UGRD 2  
Instruction in applied music to develop musicianship, performance, and a wide reading knowledge of music literature: Jazz Guitar.  
Prereq: Passing of School of Music entrance audition and test. Required of students in all music curricula, except BA, to a minimum of 6 qtr hrs. Open only to music majors. This course available for EM credit. Repeatable to a maximum of 8 cr hrs.

201.41 Applied Music (Principal): Flute  
UGRD 2  
Instruction in applied music to develop musicianship, performance, and a wide reading knowledge of music literature: Flute.  
Prereq: Passing of School of Music entrance audition and test. Required of students in all music curricula, except BA, to a minimum of 6 qtr hrs. Open only to music majors. This course available for EM credit. Repeatable to a maximum of 8 cr hrs.

201.42 Applied Music (Principal): Oboe  
UGRD 2  
Instruction in applied music to develop musicianship, performance, and a wide reading knowledge of music literature: Oboe.  
Prereq: Passing of School of Music entrance audition and test. Required of students in all music curricula, except BA, to a minimum of 6 qtr hrs. Open only to music majors. This course available for EM credit. Repeatable to a maximum of 8 cr hrs.

201.43 Applied Music (Principal): Clarinet  
UGRD 2  
Instruction in applied music to develop musicianship, performance, and a wide reading knowledge of music literature: Clarinet.  
Prereq: Passing of School of Music entrance audition and test. Required of students in all music curricula, except BA, to a minimum of 6 qtr hrs. Open only to music majors. This course available for EM credit. Repeatable to a maximum of 8 cr hrs.

201.44 Applied Music (Principal): Bass Clarinet  
UGRD 2  
Instruction in applied music to develop musicianship, performance, and a wide reading knowledge of music literature: Bass Clarinet.  
Prereq: Passing of School of Music entrance audition and test. Required of students in all music curricula, except BA, to a minimum of 6 qtr hrs. Open only to music majors. This course available for EM credit. Repeatable to a maximum of 8 cr hrs.

201.45 Applied Music (Principal): Saxophone  
UGRD 2  
Instruction in applied music to develop musicianship, performance, and a wide reading knowledge of music literature: Saxophone.  
Prereq: Passing of School of Music entrance audition and test. Required of students in all music curricula, except BA, to a minimum of 6 qtr hrs. Open only to music majors. This course available for EM credit. Repeatable to a maximum of 8 cr hrs.

201.46 Applied Music (Principal): Bassoon  
UGRD 2  
Instruction in applied music to develop musicianship, performance, and a wide reading knowledge of music literature: Bassoon.  
Prereq: Passing of School of Music entrance audition and test. Required of students in all music curricula, except BA, to a minimum of 6 qtr hrs. Open only to music majors. This course available for EM credit. Repeatable to a maximum of 8 cr hrs.

201.47 Applied Music (Principal): Jazz Saxophone  
UGRD 2  
Instruction in applied music to develop musicianship, performance, and a wide reading knowledge of music literature: Jazz Saxophone.  
Prereq: Passing of School of Music entrance audition and test. Required of students in all music curricula, except BA, to a minimum of 6 qtr hrs. Open only to music majors. This course available for EM credit. Repeatable to a maximum of 8 cr hrs.

201.51 Applied Music (Principal): Horn  
UGRD 2  
Instruction in applied music to develop musicianship, performance, and a wide reading knowledge of music literature: Horn.  
Prereq: Passing of School of Music entrance audition and test. Required of students in all music curricula, except BA, to a minimum of 6 qtr hrs. Open only to music majors. This course available for EM credit. Repeatable to a maximum of 8 cr hrs.

201.52 Applied Music (Principal): Trumpet  
UGRD 2  
Instruction in applied music to develop musicianship, performance, and a wide reading knowledge of music literature: Trumpet.  
Prereq: Passing of School of Music entrance audition and test. Required of students in all music curricula, except BA, to a minimum of 6 qtr hrs. Open only to music majors. This course available for EM credit. Repeatable to a maximum of 8 cr hrs.

201.53 Applied Music (Principal): Trombone  
UGRD 2  
Instruction in applied music to develop musicianship, performance, and a wide reading knowledge of music literature: Trombone.  
Prereq: Passing of School of Music entrance audition and test. Required of students in all music curricula, except BA, to a minimum of 6 qtr hrs. Open only to music majors. This course available for EM credit. Repeatable to a maximum of 8 cr hrs.

201.54 Applied Music (Principal): Euphonium  
UGRD 2  
Instruction in applied music to develop musicianship, performance, and a wide reading knowledge of music literature: Euphonium.  
Prereq: Passing of School of Music entrance audition and test. Required of students in all music curricula, except BA, to a minimum of 6 qtr hrs. Open only to music majors. This course available for EM credit. Repeatable to a maximum of 8 cr hrs.

201.55 Applied Music (Principal): Tuba  
UGRD 2  
Instruction in applied music to develop musicianship, performance, and a wide reading knowledge of music literature: Tuba.  
Prereq: Passing of School of Music entrance audition and test. Required of students in all music curricula, except BA, to a minimum of 6 qtr hrs. Open only to music majors. This course available for EM credit. Repeatable to a maximum of 8 cr hrs.

201.56 Applied Music (Principal): Jazz Trumpet  
UGRD 2  
Instruction in applied music to develop musicianship, performance, and a wide reading knowledge of music literature: Jazz Trumpet.  
Prereq: Passing of School of Music entrance audition and test. Required of students in all music curricula, except BA, to a minimum of 6 qtr hrs. Open only to music majors. This course available for EM credit. Repeatable to a maximum of 8 cr hrs.

201.57 Applied Music (Principal): Jazz Trombone  
UGRD 2  
Instruction in applied music to develop musicianship, performance, and a wide reading knowledge of music literature: Jazz Trombone.  
Prereq: Passing of School of Music entrance audition and test. Required of students in all music curricula, except BA, to a minimum of 6 qtr hrs. Open only to music majors. This course available for EM credit. Repeatable to a maximum of 8 cr hrs.

201.71 Applied Music (Principal): Percussion  
UGRD 2  
Instruction in applied music to develop musicianship, performance, and a wide reading knowledge of music literature: Percussion.  
Prereq: Passing of School of Music entrance audition and test. Required of students in all music curricula, except BA, to a minimum of 6 qtr hrs. Open only to music majors. This course available for EM credit. Repeatable to a maximum of 8 cr hrs.
201.72 Applied Music (Principal): Jazz Percussion UGRD 2
Instruction in applied music to develop musicianship, performance, and a wide reading
knowledge of music literature. Jazz Percussion.
Prereq: Passing of School of Music entrance audition and test. Required of students in all music
curricula, except BA, to a minimum of 6 qtr hrs. Open only to music majors. These courses are
available for EM credit. Repeatable to a maximum of 8 cr hrs.
201.91 Applied Music (Principal): Harp UGRD 2
Instruction in applied music to develop musicianship, performance, and a wide reading
knowledge of music literature: Harp.
Prereq: Passing of School of Music entrance audition and test. Required of students in all music
curricula, except BA, to a minimum of 6 qtr hrs. Open only to music majors. This course
available for EM credit. Repeatable to a maximum of 8 cr hrs.
203.01 University Choirs: Chorale UGRD 1
A selected group of mixed voices which performs an extensive repertoire in concerts both on
and off campus. 4 or more hrs rehearsal each wk. Prereq: Admission by audition and permission of instructor. VPA Admis Cond course. Repeatable to a maximum of 18 cr hrs.
203.02 University Choirs: Symphonic Choir UGRD 1
Symphonic Choir is a concert organization singing a variety of literature.
Prereq: Admission by audition only. VPA Admis Cond course. Repeatable to a maximum of 18 cr hrs.
203.03 University Choirs: University Chorus UGRD 1
Oratorio and large choral works are studied and performed. 3 or more hrs rehearsal each wk. Prereq: Admission by audition only. VPA Admis Cond course. Repeatable to a maximum of 18 cr hrs.
203.04 University Choirs: Men's Glee Club UGRD 1
Study and performance of choral literature for men's voices. 3 or more hrs rehearsal each wk. Prereq: Admission by audition and permission of director. Membership in this concert group is open to all men students in the University by audition only. Repeatable to a maximum of 18 cr hrs.
203.05 University Choirs: Women's Glee Club UGRD 1
Study and performance of choral literature for women's voices. 3 or more hrs rehearsal each wk. Prereq: Admission by audition and permission of director. Membership in this concert group is open to all women students in the University by audition only. VPA Admis Cond course. Repeatable to a maximum of 18 cr hrs.
204.02 University Bands: University Wind Symphony UGRD 1
Preparation and performance of traditional and contemporary literature for symphonic band.
Open to all students by audition and permission of conductor. VPA Admis Cond courses. Repeatable to a maximum of 18 cr hrs.
204.03 University Bands: University Symphonic Band UGRD 1
Preparation and performance of traditional and contemporary literature for symphonic band.
VPA Admis Cond courses. Open to all students by audition and permission of conductor. Repeatable to a maximum of 18 cr hrs.
204.04 University Bands: University Band UGRD 1
Offers the nonmusic major an opportunity to enjoy creating music with limited performance
demands. VPA Admis Cond courses. Open to all students with prior high school instrumental experience; no formal audition required. Instruments available if needed. Repeatable to a maximum of 18 cr hrs.
204.05 University Bands: University Repertory Band UGRD 1-3
Designed as an educational band literature laboratory, sight-reading and discussing approximately 24 band works each quarter. Wi, Sp Qtrs. VPA Admis Cond courses. Repeatable to a maximum of 18 cr hrs.
204.06 University Bands: Collegiate Winds UGRD 1
Preparation and performance of traditional, contemporary, and educational literature for concert band. Open by audition. 2 1.5-hr cr. VPA Admis Cond courses. Repeatable to a maximum of 18 cr hrs.
205.01 Athletic Bands: University Marching Band UGRD 2
The University Marching Band is a selected group of brass and percussion players which
performs at football games and rallies during Autumn Quarter.
Au Qtr. 6 or more hrs rehearsal each wk. Prereq: Admission by audition and permission of director. No audit. VPA Admis Cond course. Repeatable to a maximum of 10 cr hrs.
205.02 Athletic Bands: Athletic Band UGRD 2
Athletic band provides spirited music for various sporting events (men's and women's basketball, spring football game), as well as several concerts.
Au, Wi, Sp Qtrs. Open to all students with prior high school instrumental experience, no formal audition required, including cr hrs earned in 105. Some instruments may be available if needed. VPA Admis Cond course. Repeatable to a maximum of 18 cr hrs.
206.01 Jazz Ensembles: University UGRD 1
A selected group devoted to playing, arranging, and rehearsing with emphasis on contemporary jazz literature.
Au, Wi, Sp Qtrs. 4 or more hrs rehearsal each wk. Prereq: Permission of instructor. VPA Admis Cond courses. Repeatable to a maximum of 18 cr hrs.
210 Jazz Improvisation II UGRD 3
Improvise techniques utilizing blues and pentatonic scales, elaboration of seventh chord structures, analysis of transcribed solo; improvisation of vertical, horizontal, and combination tunes; exploration of bebop and post-bop literature. Sp Qtr. 3 cl. Prereq: 209. This course is available for EM credit.

211 Jazz Improvisation III UGRD 3
Continuation of 210; technique development utilizing fourth patterns; concepts in modal and linear improvisations; increasing emphasis on post-bop literature; extensive practice in playing changes of bebop tunes. Au Qtr. 3 cl. Prereq: 210.

212 Introduction to Phonetic Alphabet UGRD 2
Introduction to the International Phonetic Alphabet and its application to singing in foreign languages. Wi Qtr. 3 cl. Prereq: Minimum of 2 cr hrs of applied study in voice or written permission of instructor.

213 University Orchestra: University Symphony Orchestra 1
The University Orchestra is an 85-piece orchestra of full instrumentation devoted to the preparation of standard and modern literature; the group gives at least three concerts each year. 6 or more hrs rehearsal each wk. Prereq: Admission by audition and permission of director. Membership is open to all University students by audition. VPA Admis Cond course. Repeatable to a maximum of 18 cr hrs.

215.02 University Orchestra: First Year Orchestra UGRD 1
Rehearsal and performance experience for nonmusic majors who played an orchestral instrument in high school. 1-2 hr cl. Not open to music majors. Credit may count towards minor in music program. Repeatable to a maximum of 3 cr hrs.

216.11 Applied Music (Non major and minor): Piano UGRD 2
Course provides fundamental studio instruction in piano for non-majors and minors. Au, Wi, Sp Qtrs. Prereq: Non-major; permission of the instructor. Repeatable to a maximum 6 cr hrs. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

216.12 Applied Music (Non major and minor): Jazz UGRD 2 Piano
Course provides fundamental studio instruction in jazz piano for non-majors and minors. Au, Wi, Sp Qtrs. Prereq: Non-major; permission of the instructor. Repeatable to a maximum 6 cr hrs. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

216.21 Applied Music (Non major and minor): Voice UGRD 2
Course provides fundamental studio instruction in voice for non-majors and minors. Au, Wi, Sp Qtrs. Prereq: Non-major; permission of the instructor. Repeatable to a maximum 6 cr hrs. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

216.31 Applied Music (Non major and minor): Violin UGRD 2
Course provides fundamental studio instruction in violin for non-majors and minors. Au, Wi, Sp Qtrs. Prereq: Non-major; permission of the instructor. Repeatable to a maximum 6 cr hrs. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

216.32 Applied Music (Non major and minor): Viola UGRD 2
Course provides fundamental studio instruction in viola for non-majors and minors. Au, Wi, Sp Qtrs. Prereq: Non-major; permission of the instructor. Repeatable to a maximum 6 cr hrs. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

216.33 Applied Music (Non major and minor): Cello UGRD 2
Course provides fundamental studio instruction in cello for non-majors and minors. Au, Wi, Sp Qtrs. Prereq: Non-major; permission of the instructor. Repeatable to a maximum 6 cr hrs. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

216.34 Applied Music (Non major and minor): Double Bass UGRD 2
Course provides fundamental studio instruction in double bass for non-majors and minors. Au, Wi, Sp Qtrs. Prereq: Non-major; permission of the instructor. Repeatable to a maximum 6 cr hrs. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

216.35 Applied Music (Non major and minor): Guitar UGRD 2
Course provides fundamental studio instruction classical guitar for non-majors and minors. Au, Wi, Sp Qtrs. Prereq: Non-major; permission of the instructor. Repeatable to a maximum 6 cr hrs.

216.36 Applied Music (Non major and minor): Jazz bass UGRD 2
Course provides fundamental studio instruction in jazz bass for non-majors and minors. Au, Wi, Sp Qtrs. Prereq: Non-major; permission of the instructor. Repeatable to a maximum 6 cr hrs. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

216.37 Applied Music (Non major and minor): Jazz guitar UGRD 2
Course provides fundamental studio instruction in jazz guitar for non-majors and minors. Au, Wi, Sp Qtrs. Prereq: Non-major; permission of the instructor. Repeatable to a maximum 6 cr hrs. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

216.41 Applied Music (Non major and minor): Flute UGRD 2
Course provides fundamental studio instruction in flute for non-majors and minors. Au, Wi, Sp Qtrs. Prereq: Non-major; permission of the instructor. Repeatable to a maximum 6 cr hrs. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

216.42 Applied Music (Non major and minor): Oboe UGRD 2
Course provides fundamental studio instruction in oboe for non-majors and minors. Au, Wi, Sp Qtrs. Prereq: Non-major; permission of the instructor. Repeatable to a maximum 6 cr hrs. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

216.43 Applied Music (Non major and minor): Clarinet UGRD 2
Course provides fundamental studio instruction in clarinet for non-majors and minors. Au, Wi, Sp Qtrs. Prereq: Non-major; permission of the instructor. Repeatable to a maximum 6 cr hrs. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

216.44 Applied Music (Non major and minor): Bass clarinet UGRD 2
Course provides fundamental studio instruction in bass clarinet for non-majors and minors. Au, Wi, Sp Qtrs. Prereq: Non-major; permission of the instructor. Repeatable to a maximum 6 cr hrs. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

216.45 Applied Music (Non major and minor): Saxophone UGRD 2
Course provides fundamental studio instruction in saxophone for non-majors and minors. Au, Wi, Sp Qtrs. Prereq: Non-major; permission of the instructor. Repeatable to a maximum 6 cr hrs. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

216.46 Applied Music (Non major and minor): Bassoon UGRD 2
Course provides fundamental studio instruction in bassoon for non-majors and minors. Au, Wi, Sp Qtrs. Prereq: Non-major; permission of the instructor. Repeatable to a maximum 6 cr hrs. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

216.47 Applied Music (Non major and minor): Jazz saxophone UGRD 2
Course provides fundamental studio instruction in jazz saxophone for non-majors and minors. Au, Wi, Sp Qtrs. Prereq: Non-major; permission of the instructor. Repeatable to a maximum 6 cr hrs. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

216.51 Applied Music (Non major and minor): Horn UGRD 2
Course provides fundamental studio instruction in horn for non-majors and minors. Au, Wi, Sp Qtrs. Prereq: Non-major; permission of the instructor. Repeatable to a maximum 6 cr hrs. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

216.52 Applied Music (Non major and minor): Trumpet UGRD 2
Course provides fundamental studio instruction in trumpet for non-majors and minors. Au, Wi, Sp Qtrs. Prereq: Non-major; permission of the instructor. Repeatable to a maximum 6 cr hrs. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

216.53 Applied Music (Non majors and minor): Trombone UGRD 2
Course provides fundamental studio instruction in trombone for non-majors and minors. Au, Wi, Sp Qtrs. Prereq: Non-major; permission of the instructor. Repeatable to a maximum 6 cr hrs. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.
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216.54 Applied Music (Non majors and minor): Euphonium UGRD 2

Course provides fundamental studio instruction in euphonium for non-majors and minors.
Au, Wi, Sp Qtr. Prereq: Non-major; permission of the instructor. Repeatable to a maximum 6 cr hrs.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

216.55 Applied Music (Non major and minor): Tuba UGRD 2

Course provides fundamental studio instruction in tuba for non-majors and minors.
Au, Wi, Sp Qtr. Prereq: Non-major; permission of the instructor. Repeatable to a maximum 6 cr hrs.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

216.56 Applied Music (Non major and minor): Jazz trumpet UGRD 2

Course provides fundamental studio instruction in jazz trumpet for non-majors and minors.
Au, Wi, Sp Qtr. Prereq: Non-major; permission of the instructor. Repeatable to a maximum 6 cr hrs.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

216.57 Applied Music (Non major and minor): Jazz trombone UGRD 2

Course provides fundamental studio instruction in jazz trombone for non-majors and minors.
Au, Wi, Sp Qtr. Prereq: Non-major; permission of the instructor. Repeatable to a maximum 6 cr hrs.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

216.58 Applied Music (Non major and minor): Harp UGRD 2

Course provides fundamental studio instruction in harp for non-majors and minors.
Au, Wi, Sp Qtr. Prereq: Non-major; permission of the instructor. Repeatable to a maximum 6 cr hrs.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

220.05 Introduction to Music Technology UGRD 3

Introduction to the use of technology in the practice and study of music.
Au, Wi, Sp Qtr. 3 cr. Prereq: Passing placement tests. This course is available for EM credit.

221 Music Theory I UGRD 3

Elements of music and musical notation; analytical concepts and terminology; fundamentals of counterpoint and melody; extensive practice through written drill and creative projects.
Au, Wi, Sp Qtrs. 3 cr. Prereq: Passing of placement tests. This course is available for EM credit.

222 Music Theory II UGRD 3

Principles of diatonic harmony, nonchordal melodic elements, and homophonic phrase structures, extensive practice in part-writing, analysis, and creative application.
Wi, Sp Qtrs. 3 cr. Prereq: 221. This course is available for EM credit.

223 Music Theory III UGRD 3

Continuation of 222, including diatonic modulation and secondary dominant functions (emphasis on creative projects).
Su, Sp Qtrs. 3 cr. Prereq: 222. This course is available for EM credit.

224 Aural Training I UGRD 2

Training in aural musicianship and music reading: practical application through solfeggio, dictation and keyboard drill.
Au, Wi Qtr. 2-1 hr cr. Prereq: Passing placement test.

225 Aural Training II UGRD 2

A continuation of 224 introducing more challenging diatonic materials.
Wi, Sp Qtrs. 2 cr. Prereq: 221 and 224. This course is available for EM credit.

226 Aural Training III UGRD 2

A continuation of 225, with attention to harmonic, contrapuntal, and rhythmic problems.
Su, Sp Qtrs. 2 cr. Prereq: 222 and 225. This course is available for EM credit.

231 Jazz Theory UGRD 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.
Au Qtr. 2 cr. Prereq: 222 and 225.

232 Jazz Keyboard Harmony UGRD 2

Designed to provide students with piano skills that directly relate to other jazz areas such as composition, arranging, and improvisation.
* Wi Qtr. 3 cr. Prereq: 231 and 261.01.

240 Music History I UGRD 3

The development of European art music from the earliest times through the 16th century.
Sc Qtr. 3 cr. 1 1-hr lab. Open only to music majors.

241 Music History II UGRD 3

The development of European and American art music from ca. 1600 to ca. 1780.
Au Qtr. 3 cr. 1 1-hr lab. Prereq: 240. Open only to music majors.

242 Music History III UGRD 3

The development of European and American art music from ca.1780 to ca.1900.
Wi Qtr. 3 cr. 1 1-hr lab. Prereq: 241.

243 Music History IV UGRD 3

The development of European and American art music in the 20th and 21st centuries.
Sp Qtr. 3 cr. 1 1-hr lab. Prereq: 242.

244 Survey of African and African-Derived Music in the Western World UGRD 3

An introduction to traditional African music and its role in the history and development of Afro-American music with its concomitant sociopolitical milieu.
Wi Qtrs. 3 cl. Not open to students with credit for AfrAmAbt 244. Cross-listed in African-American and African Studies. VPA Admis Cond course.

250 Music Cultures of the World UGRD 5

A survey of musical cultures outside the Western European tradition of the fine arts.
Su, Au, Wi Qtr. 5 cr. Not open to students with credit for 140. GEC arts and hums VPA and social diversity - international issues (Global) course. VPA Admis Cond course.

251 The World of Classical Music UGRD 5

An introduction to the world of classical music and to its genres, composers, styles, societies and historical periods. 251H (honors) may be available.
Au, Wi, Sp Qtrs. 5 cr. Not open for credit to music majors. Not open to students with credit for 141. A musical background is not required. 251E may be offered for honors embedded experience. GEC arts and hums VPA and social diversity - international issues (Western) course. VPA Admis Cond course.

252 History of Rock and Roll UGRD 5

The history and culture of rock and roll.
Su, Au, Wi Qtr. 2-2 hr cr., 1-1 hr lab. Not open to students with credit for 142. GEC arts and hums VPA course.

253 Introduction to Jazz UGRD 5

A study of the characteristics, styles, and structure of jazz; jazz performers.
Sp Qtr. 5 cr. Not open for credit to music majors. Not open to students with credit for 150. GEC arts and hums VPA course. VPA Admis Cond course.

261.01 Applied Music Methods and Materials I: Piano UGRD 1

Piano.
Au Qtr. 2 cr. Prereq: Music major and prereq or concur: 221. Not open to keyboard majors. These courses are available for EM credit.

261.02 Applied Music Methods and Materials I: Voice UGRD 1-2

Voice.
* Sp Qtr. 4 cr. Not open to voice majors. These courses are available for EM credit.

261.03 Applied Music Methods and Materials I: Strings UGRD 1-2

Strings.
Au Qtr. 4 cr. These courses are available for EM credit.

261.05 Applied Music Methods and Materials I: Brass UGRD 1-2

Brass.
Au Qtr. 4 cr. Not open to brass majors. These courses are available for EM credit.

261.07 Applied Music Methods and Materials I: Percussion UGRD 1-2

Percussion.
Wi, Sp Qtrs. 4 cl. These courses are available for EM credit.

261.11 Applied Music Methods and Materials I: Basic Conducting Laboratory UGRD 2

Basic conducting skill development emphasizing pulse, rhythm and physical coordination.
Au Qtr. 4 cr. Prereq: 223. These courses are available for EM credit.

261.35 Applied Music Methods and Materials I: Guitar UGRD 2

Guitar.
Wi Qtr. 3 cl. Prereq: 269. Open only to MusicEd majors. Not open to music majors with guitar specializations. These courses are available for EM credit.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>261.42</td>
<td>Applied Music Methods and Materials I: Oboe</td>
<td>UGRD 1</td>
<td>Mac. of 2 cr hrs.</td>
</tr>
<tr>
<td></td>
<td>Oboe.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>261.46</td>
<td>Applied Music Methods and Materials I: Bassoon</td>
<td>UGRD 1</td>
<td>Bassoon. Limited to dept majors. These courses are available for EM credit.</td>
</tr>
<tr>
<td>261.99</td>
<td>Applied Music Methods and Materials I: Wind, Strings, and Percussion</td>
<td>UGRD 2</td>
<td>Functional knowledge of wind, strings, and percussion instruments. Sp Qtr. 4 cl. Prereq: 170 Limited to dept majors; open not to instrumental majors. These courses are available for EM credit.</td>
</tr>
<tr>
<td>262.01</td>
<td>Applied Music Methods and Materials II: Piano</td>
<td>UGRD 1</td>
<td>Piano. Wi Qtr. 2 cl. Prereq: Music major and 261.01. Not open to keyboard majors. These courses are available for EM credit.</td>
</tr>
<tr>
<td>262.02</td>
<td>Applied Music Methods and Materials II: Voice</td>
<td>UGRD 2</td>
<td>Voice. * Au Qtr. 4 cl. Prereq: 261.02 Not open to voice majors. These courses are available for EM credit.</td>
</tr>
<tr>
<td>262.03</td>
<td>Applied Music Methods and Materials II: Strings</td>
<td>UGRD 2</td>
<td>Strings. Wi Qtr. 4 cl. Prereq: 261.03. These courses are available for EM credit.</td>
</tr>
<tr>
<td>262.04</td>
<td>Applied Music Methods and Materials II: Woodwinds</td>
<td>UGRD 2</td>
<td>Pedagogical and technical for flute, clarinet, and saxophone. Wi, Sp Qtrs. 4 cl. Prereq: Music major. These courses are available for EM credit.</td>
</tr>
<tr>
<td>262.05</td>
<td>Applied Music Methods and Materials II: Brass</td>
<td>UGRD 2</td>
<td>Brass. Wi, Sp Qtrs. 4 cl. Prereq: 261.05. These courses are available for EM credit.</td>
</tr>
<tr>
<td>262.11</td>
<td>Applied Music Methods and Materials II: Conducting (Instrumental)</td>
<td>UGRD 2</td>
<td>Conducting instruction applied to band, orchestra and ensemble literature and performance. Wi, Sp Qtrs. 4 cl. Prereq: 261.11. These courses are available for EM credit.</td>
</tr>
<tr>
<td>262.12</td>
<td>Applied Music Methods and Materials II: Conducting (Choral)</td>
<td>UGRD 2</td>
<td>Conducting instruction applied to choral literature and performance problems. Wi Qtr. 4 cl. Prereq: 261.11. These courses are available for EM credit.</td>
</tr>
<tr>
<td>263.01</td>
<td>Applied Music Methods and Materials III: Piano</td>
<td>UGRD 1</td>
<td>Piano. Sp Qtr. 2 cl. Prereq: Music major and 262.01 or equiv. These courses are available for EM credit.</td>
</tr>
<tr>
<td>263.02</td>
<td>Applied Music Methods and Materials III: Voice</td>
<td>UGRD 3</td>
<td>Vocal pedagogy, anatomy and physiology of the vocal mechanism. Wi Qtr. 3 cl. Prereq: 262 or equiv. These courses are available for EM credit.</td>
</tr>
<tr>
<td>264.01</td>
<td>Applied Music Methods and Materials IV: Piano</td>
<td>UGRD 1</td>
<td>Piano. Au Qtr. 2 cl. Prereq: 263.01 or equiv and passage of Level Change Proficiency by a score of 70 or better. These courses are available for EM credit.</td>
</tr>
<tr>
<td>264.02</td>
<td>Applied Music Methods and Materials IV: Voice</td>
<td>UGRD 2</td>
<td>Voice. Sp Qtr. 4 cl. Prereq: 263 or equiv. These courses are available for EM credit.</td>
</tr>
<tr>
<td>265.01</td>
<td>Applied Music Methods and Materials V: Piano</td>
<td>UGRD 1</td>
<td>Functional keyboard skills for the music major, including sight-reading, harmonization, open score reading, accompanying and improvisation. Wi Qtr. 2 cl. Prereq: Music major and 264.01 or equiv.</td>
</tr>
<tr>
<td>266.01</td>
<td>Applied Music Methods and Materials VI: Piano</td>
<td>UGRD 1</td>
<td>Functional keyboard skills for the music major, including sight-reading, harmonization, open score reading, accompanying and improvisation. Sp Qtr. 2 cl. Prereq: Music major and 265.01 or equiv. Repeatable to a maximum of 2 cr hrs.</td>
</tr>
<tr>
<td>267</td>
<td>String Pedagogy for the Applied Studio</td>
<td>UGRD 2</td>
<td>The organization, development, and pedagogy for the applied string instrument studio. ** Au Qtr. 1 2-hr cl, 5-hr lab. Prereq: 201 or permission of instructor.</td>
</tr>
<tr>
<td>268</td>
<td>Instrument Repair</td>
<td>UGRD 1</td>
<td>Development of practical skills in identifying and correcting minor repair problems on band and orchestral instruments and their accessories. Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 262.04, 262.05, and permission of instructor. Repeatable to a maximum of 2 cr hrs.</td>
</tr>
</tbody>
</table>
316 Music

349 20th-Century Music UGRD 3
The main trends in Western art music from Debussy to the avant garde.
* Wi Qtr. 3 cl. Prereq: English 110 or 111 or equiv. GEC arts and hums VPA course.

351 The World of Music UGRD 3
Introduction to music in non-Western cultures and societies and to the concepts, vocabulary, and methodology for dealing with this music.
Au Qtr. 3 cl, 1-1 hr lab. Prereq: Soph standing or higher. Not open to students with credit for 250. Open only to music majors.

352 Selected World Musics, Group I UGRD 3
An introduction to music in various Native American, African, and Eastern European cultures. * Wi Qtr. 3 cl. Prereq: 250 or 351. Not open to students with credit for 251.

353 Selected World Musics, Group II UGRD 3
An introduction to music in various South Indian, Indonesian, and Latin American cultures. * Wi Qtr. 3 cl. Prereq: 250 or 351. Not open to students with credit for 252.

370 Music for Elementary Teachers UGRD 3
Music literature and teaching aids for children, including singing, rhythmic, creative, and listening experiences, and their presentation.
Au, Wi, Sp Qtr. 5 cl. Prereq: 270 and professional standing.

372 Music for Teachers of Young Children UGRD 3
Instructional materials, methods, and musical skills needed for guiding young children’s music and movement learning experiences applied to preschools and kindergartens.
Au Qtr. 2 1.5 hr cl. Prereq: 351 or permission of applied area faculty. Open only to music majors. Designed for prospective teachers of young children and personnel of preschools and kindergartens.

373 Music for Special Education Teachers UGRD 3
Music literature and teaching strategies for exceptional children, including singing, rhythmic, creative, and listening experiences.
Wi, Sp Qtr. 5 cl. Prereq: Jr or sr standing in EduPAES.

401.11 Applied Music (Principal): Piano UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Piano. Prereq: 201 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 8 cr hrs.

401.12 Applied Music (Principal): Jazz Piano UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Jazz Piano. Prereq: 201 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 8 cr hrs.

401.21 Applied Music (Principal): Voice UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Voice. Prereq: 201 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 8 cr hrs.

401.31 Applied Music (Principal): Violin UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Violin. Prereq: 201 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 8 cr hrs.

401.32 Applied Music (Principal): Viola UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Viola. Prereq: 201 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 8 cr hrs.

401.33 Applied Music (Principal): Cello UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Cello. Prereq: 201 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 8 cr hrs.

401.34 Applied Music (Principal): Double Bass UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Double Bass. Prereq: 201 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 8 cr hrs.

401.36 Applied Music (Principal): Jazz Bass UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Jazz Bass. Prereq: 201 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 8 cr hrs.

401.37 Applied Music (Principal): Jazz Guitar UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Jazz Guitar. Prereq: 201 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 8 cr hrs.

401.41 Applied Music (Principal): Flute UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Flute. Prereq: 201 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 8 cr hrs.

401.42 Applied Music (Principal): Oboe UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Oboe. Prereq: 201 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 8 cr hrs.

401.43 Applied Music (Principal): Clarinet UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Clarinet. Prereq: 201 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 8 cr hrs.

401.44 Applied Music (Principal): Bass Clarinet UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Bass Clarinet. Prereq: 201 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 8 cr hrs.

401.45 Applied Music (Principal): Saxophone UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Saxophone. Prereq: 201 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 8 cr hrs.

401.46 Applied Music (Principal): Bassoon UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Bassoon. Prereq: 201 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 8 cr hrs.

401.47 Applied Music (Principal): Jazz Saxophone UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Jazz Saxophone. Prereq: 201 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 8 cr hrs.

401.51 Applied Music (Principal): Horn UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Horn. Prereq: 201 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 8 cr hrs.

401.52 Applied Music (Principal): Trumpet UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Trumpet. Prereq: 201 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 8 cr hrs.

401.53 Applied Music (Principal): Trombone UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Trombone. Prereq: 201 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 8 cr hrs.

401.54 Applied Music (Principal): Euphonium UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Euphonium. Prereq: 201 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 8 cr hrs.
401.55 Applied Music (Principal): Tuba UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Tuba. Prerequisite: 201 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 8 cr hrs.

401.56 Applied Music (Principal): Jazz Trumpet UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Jazz Trumpet. Prerequisite: 201 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 8 cr hrs.

401.57 Applied Music (Principal): Jazz Trombone UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Jazz Trombone. Prerequisite: 201 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 8 cr hrs.

401.71 Applied Music (Principal): Percussion UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Percussion. Prerequisite: 201 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Repeatable to a maximum of 8 cr hrs.

402.21 Applied Music (Major): Voice UGRD 3
Instruction required in BM curriculum in performance to develop professional qualities of musicianship, technique, and knowledge of music literature: Voice. Prerequisite: 201 and written permission of applied area faculty. Repeatable to a maximum of 16 cr hrs.

402.22 Applied Music (Major): Violin UGRD 2-4
Instruction required in BM curriculum in performance to develop professional qualities of musicianship, technique, and knowledge of music literature: Violin. Prerequisite: 201 and written permission of applied area faculty. Repeatable to a maximum of 16 cr hrs.

402.23 Applied Music (Major): Cello UGRD 2-4
Instruction required in BM curriculum in performance to develop professional qualities of musicianship, technique, and knowledge of music literature: Cello. Prerequisite: 201 and written permission of applied area faculty. Repeatable to a maximum of 16 cr hrs.

402.24 Applied Music (Major): Double Bass UGRD 2-4
Instruction required in BM curriculum in performance to develop professional qualities of musicianship, technique, and knowledge of music literature: Double Bass. Prerequisite: 201 and written permission of applied area faculty. Repeatable to a maximum of 16 cr hrs.

402.31 Applied Music (Major): Violin UGRD 2-4
Instruction required in BM curriculum in performance to develop professional qualities of musicianship, technique, and knowledge of music literature: Violin. Prerequisite: 201 and written permission of applied area faculty. Repeatable to a maximum of 16 cr hrs.

402.32 Applied Music (Major): Viola UGRD 2-4
Instruction required in BM curriculum in performance to develop professional qualities of musicianship, technique, and knowledge of music literature: Viola. Prerequisite: 201 and written permission of applied area faculty. Repeatable to a maximum of 16 cr hrs.

402.33 Applied Music (Major): Oboe UGRD 2-4
Instruction required in BM curriculum in performance to develop professional qualities of musicianship, technique, and knowledge of music literature: Oboe. Prerequisite: 201 and written permission of applied area faculty. Repeatable to a maximum of 16 cr hrs.

402.34 Applied Music (Major): Clarinet UGRD 2-4
Instruction required in BM curriculum in performance to develop professional qualities of musicianship, technique, and knowledge of music literature: Clarinet. Prerequisite: 201 and written permission of applied area faculty. Repeatable to a maximum of 16 cr hrs.

402.35 Applied Music (Major): Bass Clarinet UGRD 2-4
Instruction required in BM curriculum in performance to develop professional qualities of musicianship, technique, and knowledge of music literature: Bass Clarinet. Prerequisite: 201 and written permission of applied area faculty. Repeatable to a maximum of 16 cr hrs.

402.43 Applied Music (Major): Tuba UGRD 2-4
Instruction required in BM curriculum in performance to develop professional qualities of musicianship, technique, and knowledge of music literature: Tuba. Prerequisite: 201 and written permission of applied area faculty. Repeatable to a maximum of 16 cr hrs.

402.44 Applied Music (Major): Bassoon UGRD 2-4
Instruction required in BM curriculum in performance to develop professional qualities of musicianship, technique, and knowledge of music literature: Bassoon. Prerequisite: 201 and written permission of applied area faculty. Repeatable to a maximum of 16 cr hrs.

402.45 Applied Music (Major): Saxophone UGRD 2-4
Instruction required in BM curriculum in performance to develop professional qualities of musicianship, technique, and knowledge of music literature: Saxophone. Prerequisite: 201 and written permission of applied area faculty. Repeatable to a maximum of 16 cr hrs.

402.46 Applied Music (Major): Bassoon UGRD 2-4
Instruction required in BM curriculum in performance to develop professional qualities of musicianship, technique, and knowledge of music literature: Bassoon. Prerequisite: 201 and written permission of applied area faculty. Repeatable to a maximum of 16 cr hrs.

402.49 Applied Music (Major): Trumpet UGRD 2-4
Instruction required in BM curriculum in performance to develop professional qualities of musicianship, technique, and knowledge of music literature: Trumpet. Prerequisite: 201 and written permission of applied area faculty. Repeatable to a maximum of 16 cr hrs.

402.55 Applied Music (Major): Horn UGRD 2-4
Instruction required in BM curriculum in performance to develop professional qualities of musicianship, technique, and knowledge of music literature: Horn. Prerequisite: 201 and written permission of applied area faculty. Repeatable to a maximum of 16 cr hrs.

402.56 Applied Music (Major): Euphonium UGRD 2-4
Instruction required in BM curriculum in performance to develop professional qualities of musicianship, technique, and knowledge of music literature: Euphonium. Prerequisite: 201 and written permission of applied area faculty. Repeatable to a maximum of 16 cr hrs.

402.57 Applied Music (Major): Tuba UGRD 2-4
Instruction required in BM curriculum in performance to develop professional qualities of musicianship, technique, and knowledge of music literature: Tuba. Prerequisite: 201 and written permission of applied area faculty. Repeatable to a maximum of 16 cr hrs.

402.61 Applied Music (Major): French Horn UGRD 2-4
Instruction required in BM curriculum in performance to develop professional qualities of musicianship, technique, and knowledge of music literature: French Horn. Prerequisite: 201 and written permission of applied area faculty. Repeatable to a maximum of 16 cr hrs.

412. Italian Diction for Singers UGRD 2
Advanced study of phonetics and sound production as applied to singing in Italian. Spring Quarter 3 cr. Prerequisite: 212.

413. German Diction for Singers UGRD 2
Advanced study of phonetics and sound production as applied to singing in German. Autumn Quarter 3 cr. Prerequisite: 212.

414. French Diction for Singers UGRD 2
Advanced study of phonetics and sound production as applied to singing in French. Winter Quarter 3 cr. Prerequisite: 212.

421. Music Theory IV UGRD 3
Principles of 18th- and 19th-century chromatic harmony and modulations; extensive practice in part-writing, analysis, and creative application. Autumn Quarter 3 cr. Prerequisite: 421.

422. Music Theory V UGRD 3
Introduction to the study of the structural principles and forms of homophonic music. Extensive practice through written dict, analysis and creative projects. Winter Quarter 3 cr. Prerequisite: 421.
423 Music Theory VI UGRD 3
Compositional techniques in 20th-century music; extensive practice through written drill, analysis, and creative projects.
Sp Qtr. 3 cl. Prereq: 422.

424 Aural Training III UGRD 2
Intensive training in aural musicianship and music reading; practical application through solfège dictation, and keyboard drill.
Au Qtr. 2 cl. Prereq: 226.

425 Aural Training IV UGRD 2
A continuation of 424 at a more advanced level.
Wi Qtr. 2 cl. Prereq: 424.

426 Aural Training V UGRD 2
A continuation of 425; aural training at an advanced level.
Sp Qtr. 2 cl. Prereq: 425.

427 Keyboard Harmony I UGRD 2
Systematic review and utilization of basic harmonic materials at the keyboard.
"" Au Qtr. 2 cl. Prereq: 201.01 (6 or cr hrs), 261.01, 262.01, and 263.01 (6 cr hrs).

428 Keyboard Harmony II UGRD 2
Introduction to score reading at the keyboard.
"" Wi Qtr. 2 cl. Prereq: 427.

429 Keyboard Harmony III UGRD 2
Continued practical experience in score reading at the keyboard.
"" Sp Qtr. 2 cl. Prereq: 428.

431 Protest in American Music UGRD 5
Examines the relationship between and among music, media technologies, and both mass and social media from musical, textual, political, economic and social perspectives.
Wi Qtr.

432 Spectacle: Music and Public Amusements in America UGRD 5
Examines the relationship between public amusements and music essential to understanding American entertainment and commerce, the changing character of leisure, and the evolving American identity.
Au Qtr.

433.02 Scoring for Jazz Ensembles: Small Jazz Ensembles UGRD 3
Scoring projects for jazz combos of various sizes and instrumentation.
* Wi Qtr. 3 cl. Prereq: 223 and 231.

433.03 Scoring for Jazz Ensembles: Large Jazz Ensembles UGRD 3
Scoring projects for the stage band, with concentration on voicing, ranges, doublings, balance, and orchestration procedures.
* Wi Qtr. 3 cl. Prereq: 433.02. Not open to students with credit for 433.01.

446 Survey of Jazz Styles UGRD 3
Stylistic variants of jazz involving technical and structural aspects so that the student may recognize, play, and score them authentically.
* Sp Qtr. 3 cl. Prereq: Permission of instructor.

470 Introduction to Music Education UGRD 4
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.
Au, Wi Qtrss. 2 cl. 2-2 hr labs. Prereq: Soph standing in MusicEd and Psych 100.

470E Introduction to Music Education - Honors UGRD 4
Embedded
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: Soph standing in Music Ed and Psych 100.

489 Internship in Music UGRD 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 10 cr hrs. This course is graded S/U.

500.01 Review of Music Analysis Techniques GRAD 3
Review of notation symbology, nomenclature, part-writing practices, and analytic techniques related to Western music composed from the mid-18th through the mid-20th centuries.
Su, Sp Qtrss. Prereq: Grad standing in music. Not open to students with credit for 620. Repeatable to a maximum of 9 cr hrs.

500.02 Review of Music History GRAD 3
Review of Western music history from ancient Greek times to the present; study of genres, composers, and elements of musical styles.
Su, Wi Qtrss. Prereq: Grad standing in music. Repeatable to a maximum of 9 cr hrs.

501.11 Applied Music (Principal): Piano UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Piano.
Prereq: 401 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of School of Music. Repeatable to a maximum of 8 cr hrs.

501.12 Applied Music (Principal): Jazz Piano UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Jazz Piano.
Prereq: 401 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of School of Music. Repeatable to a maximum of 8 cr hrs.

501.21 Applied Music (Principal): Voice UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Voice.
Prereq: 401 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of School of Music. Repeatable to a maximum of 8 cr hrs.

501.31 Applied Music (Principal): Violin UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Violin.
Prereq: 401 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of School of Music. Repeatable to a maximum of 8 cr hrs.

501.32 Applied Music (Principal): Viola UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Viola.
Prereq: 401 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of School of Music. Repeatable to a maximum of 8 cr hrs.

501.33 Applied Music (Principal): Cello UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Cello.
Prereq: 401 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of School of Music. Repeatable to a maximum of 8 cr hrs.

501.34 Applied Music (Principal): Double Bass UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Double Bass.
Prereq: 401 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of School of Music. Repeatable to a maximum of 8 cr hrs.

501.36 Applied Music (Principal): Jazz Bass UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Jazz Bass.
Prereq: 401 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of School of Music. Repeatable to a maximum of 8 cr hrs.

501.37 Applied Music (Principal): Jazz Guitar UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Jazz Guitar.
Prereq: 401 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of School of Music. Repeatable to a maximum of 8 cr hrs.

501.41 Applied Music (Principal): Flute UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Flute.
Prereq: 401 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of School of Music. Repeatable to a maximum of 8 cr hrs.

501.42 Applied Music (Principal): Oboe UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Oboe.
Prereq: 401 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of School of Music. Repeatable to a maximum of 8 cr hrs.

501.43 Applied Music (Principal): Clarinet UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Clarinet.
Prereq: 401 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of School of Music. Repeatable to a maximum of 8 cr hrs.
Prereq: 401 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of School of Music. Repeatable to a maximum of 8 cr hrs.

501.45 Applied Music (Principal): Saxophone UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Saxophone. Prereq: 401 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of School of Music. Repeatable to a maximum of 8 cr hrs.

501.46 Applied Music (Principal): Bassoon UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Bassoon. Prereq: 401 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of School of Music. Repeatable to a maximum of 8 cr hrs.

501.47 Applied Music (Principal): Jazz Saxophone UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Jazz Saxophone. Prereq: 401 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of School of Music. Repeatable to a maximum of 8 cr hrs.

501.51 Applied Music (Principal): Horn UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Horn. Prereq: 401 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of School of Music. Repeatable to a maximum of 8 cr hrs.

501.52 Applied Music (Principal): Trumpet UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Trumpet. Prereq: 401 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of School of Music. Repeatable to a maximum of 8 cr hrs.

501.53 Applied Music (Principal): Trombone UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Trombone. Prereq: 401 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of School of Music. Repeatable to a maximum of 8 cr hrs.

501.54 Applied Music (Principal): Euphonium UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Euphonium. Prereq: 401 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of School of Music. Repeatable to a maximum of 8 cr hrs.

501.55 Applied Music (Principal): Tuba UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Tuba. Prereq: 401 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of School of Music. Repeatable to a maximum of 8 cr hrs.

501.56 Applied Music (Principal): Jazz Trumpet UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Jazz Trumpet. Prereq: 401 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of School of Music. Repeatable to a maximum of 8 cr hrs.

501.57 Applied Music (Principal): Jazz Trombone UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Jazz Trombone. Prereq: 401 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of School of Music. Repeatable to a maximum of 8 cr hrs.

501.71 Applied Music (Principal): Percussion UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Percussion. Prereq: 401 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of School of Music. Repeatable to a maximum of 8 cr hrs.

501.72 Applied Music (Principal): Jazz Percussion UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Jazz Percussion. Prereq: 401 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of School of Music. Repeatable to a maximum of 8 cr hrs.

501.91 Applied Music (Principal): Harp UGRD 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature: Harp. Prereq: 401 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of School of Music. Repeatable to a maximum of 8 cr hrs.

502.11 Applied Music (Major): Piano UGRD 3-4
Instruction required in BM curricula in performance to develop professional qualities of musicianship, technique, and knowledge of music literature; half recital required in junior year: Piano. Prereq: 402 and written permission of applied area faculty. Repeatable to a maximum of 16 cr hrs.

502.12 Applied Music (Major): Jazz Piano UGRD 3-4
Instruction required in BM curricula in performance to develop professional qualities of musicianship, technique, and knowledge of music literature; half recital required in junior year: Jazz Piano. Prereq: 402 and written permission of applied area faculty. Repeatable to a maximum of 16 cr hrs.

502.21 Applied Music (Major): Voice UGRD 3-4
Instruction required in BM curricula in performance to develop professional qualities of musicianship, technique, and knowledge of music literature; half recital required in junior year: Voice. Prereq: 402 and written permission of applied area faculty. Repeatable to a maximum of 16 cr hrs.

502.31 Applied Music (Major): Violin UGRD 3-4
Instruction required in BM curricula in performance to develop professional qualities of musicianship, technique, and knowledge of music literature; half recital required in junior year: Violin. Prereq: 402 and written permission of applied area faculty. Repeatable to a maximum of 16 cr hrs.

502.32 Applied Music (Major): Viola UGRD 3-4
Instruction required in BM curricula in performance to develop professional qualities of musicianship, technique, and knowledge of music literature; half recital required in junior year: Viola. Prereq: 402 and written permission of applied area faculty. Repeatable to a maximum of 16 cr hrs.

502.33 Applied Music (Major): Cello UGRD 3-4
Instruction required in BM curricula in performance to develop professional qualities of musicianship, technique, and knowledge of music literature; half recital required in junior year: Cello. Prereq: 402 and written permission of applied area faculty. Repeatable to a maximum of 16 cr hrs.

502.34 Applied Music (Major): Double Bass UGRD 3-4
Instruction required in BM curricula in performance to develop professional qualities of musicianship, technique, and knowledge of music literature; half recital required in junior year: Double Bass. Prereq: 402 and written permission of applied area faculty. Repeatable to a maximum of 16 cr hrs.

502.36 Applied Music (Major): Jazz Bass UGRD 3-4
Instruction required in BM curricula in performance to develop professional qualities of musicianship, technique, and knowledge of music literature; half recital required in junior year: Jazz Bass. Prereq: 402 and written permission of applied area faculty. Repeatable to a maximum of 16 cr hrs.

502.37 Applied Music (Major): Jazz Guitar UGRD 3-4
Instruction required in BM curricula in performance to develop professional qualities of musicianship, technique, and knowledge of music literature; half recital required in junior year: Jazz Guitar. Prereq: 402 and written permission of applied area faculty. Repeatable to a maximum of 16 cr hrs.

502.41 Applied Music (Major): Flute UGRD 3-4
Instruction required in BM curricula in performance to develop professional qualities of musicianship, technique, and knowledge of music literature; half recital required in junior year: Flute. Prereq: 402 and written permission of applied area faculty. Repeatable to a maximum of 16 cr hrs.
302.42 Applied Music (Major): Oboe
UGRD 3-4
Instruction required in BM curricula in performance to develop professional qualities of musicianship, technique, and knowledge of music literature; half recital required in junior year: Oboe.
Prereq: 402 and written permission of applied area faculty. Repeatable to a maximum of 16 cr.
hrs.

502.43 Applied Music (Major): Clarinet
UGRD 3-4
Instruction required in BM curricula in performance to develop professional qualities of musicianship, technique, and knowledge of music literature; half recital required in junior year: Clarinet.
Prereq: 402 and written permission of applied area faculty. Repeatable to a maximum of 16 cr.
hrs.

502.44 Applied Music (Major): Bass Clarinet
UGRD 3-4
Instruction required in BM curricula in performance to develop professional qualities of musicianship, technique, and knowledge of music literature; half recital required in junior year: Bass Clarinet.
Prereq: 402 and written permission of applied area faculty. Repeatable to a maximum of 16 cr.
hrs.

502.45 Applied Music (Major): Saxophone
UGRD 3-4
Instruction required in BM curricula in performance to develop professional qualities of musicianship, technique, and knowledge of music literature; half recital required in junior year: Saxophone.
Prereq: 402 and written permission of applied area faculty. Repeatable to a maximum of 16 cr.
hrs.

502.46 Applied Music (Major): Bassoon
UGRD 3-4
Instruction required in BM curricula in performance to develop professional qualities of musicianship, technique, and knowledge of music literature; half recital required in junior year: Bassoon.
Prereq: 402 and written permission of applied area faculty. Repeatable to a maximum of 16 cr.
hrs.

502.47 Applied Music (Major): Jazz Saxophone
UGRD 3-4
Instruction required in BM curricula in performance to develop professional qualities of musicianship, technique, and knowledge of music literature; half recital required in junior year: Jazz Saxophone.
Prereq: 402 and written permission of applied area faculty. Repeatable to a maximum of 16 cr.
hrs.

502.51 Applied Music (Major): Horn
UGRD 3-4
Instruction required in BM curricula in performance to develop professional qualities of musicianship, technique, and knowledge of music literature; half recital required in junior year: Horn.
Prereq: 402 and written permission of applied area faculty. Repeatable to a maximum of 16 cr.
hrs.

502.52 Applied Music (Major): Trumpet
UGRD 3-4
Instruction required in BM curricula in performance to develop professional qualities of musicianship, technique, and knowledge of music literature; half recital required in junior year: Trumpet.
Prereq: 402 and written permission of applied area faculty. Repeatable to a maximum of 16 cr.
hrs.

502.53 Applied Music (Major): Trombone
UGRD 3-4
Instruction required in BM curricula in performance to develop professional qualities of musicianship, technique, and knowledge of music literature; half recital required in junior year: Trombone.
Prereq: 402 and written permission of applied area faculty. Repeatable to a maximum of 16 cr.
hrs.

502.54 Applied Music (Major): Euphonium
UGRD 3-4
Instruction required in BM curricula in performance to develop professional qualities of musicianship, technique, and knowledge of music literature; half recital required in junior year: Euphonium.
Prereq: 402 and written permission of applied area faculty. Repeatable to a maximum of 16 cr.
hrs.

502.55 Applied Music (Major): Tuba
UGRD 3-4
Instruction required in BM curricula in performance to develop professional qualities of musicianship, technique, and knowledge of music literature; half recital required in junior year: Tuba.
Prereq: 402 and written permission of applied area faculty. Repeatable to a maximum of 16 cr.
hrs.

502.56 Applied Music (Major): Jazz Trumpet
UGRD 3-4
Instruction required in BM curricula in performance to develop professional qualities of musicianship, technique, and knowledge of music literature; half recital required in junior year: Jazz Trumpet.
Prereq: 402 and written permission of applied area faculty. Repeatable to a maximum of 16 cr.
hrs.

502.57 Applied Music (Major): Jazz Trombone
UGRD 3-4
Instruction required in BM curricula in performance to develop professional qualities of musicianship, technique, and knowledge of music literature; half recital required in junior year: Jazz Trombone.
Prereq: 402 and written permission of applied area faculty. Repeatable to a maximum of 16 cr.
hrs.

502.71 Applied Music (Major): Percussion
UGRD 3-4
Instruction required in BM curricula in performance to develop professional qualities of musicianship, technique, and knowledge of music literature; half recital required in junior year: Percussion.
Prereq: 402 and written permission of applied area faculty. Repeatable to a maximum of 16 cr.
hrs.

502.91 Applied Music (Major): Harp
UGRD 3-4
Instruction required in BM curricula in performance to develop professional qualities of musicianship, technique, and knowledge of music literature; half recital required in junior year: Harp.
Prereq: 402 and written permission of applied area faculty. Repeatable to a maximum of 16 cr.
hrs.

505 Junior Recital
UGRD 0
Required junior recital for the bachelor of music performance and bachelor of music education degrees.

510 Advanced Jazz Improvisation
UGRD 3
Advanced techniques of improvisation; the use of modal devices, complex meters, and innovative forms; concern for speed, endurance, energy levels, and problems of unaccompanied performance.

524 Orchestration I
UGRD 3
A fundamental course in scoring for the instruments of the orchestra and band in transcriptions and arrangements.

531 Elementary Studies in Counterpoint
UGRD 3
A fundamental course in counterpoint including study of the basic principles of 16th-century polyphony.

533 Jazz Composition
UGRD 3
Designed to develop the skills necessary for composing/arranging in small, mixed, and large jazz ensembles.

535 Composition I
UGRD 3
A fundamental course in composition, with emphasis on creative writing in the small forms.

546 Modern and Contemporary Jazz Styles
UGRD 3
Modern and contemporary jazz styles from the Be-bop School of the 1940's to the present day.

555.01 Studies in Musicology: Medieval Music
UGRD 4
Introduction to specialized topics and issues in historical musicology and ethnomusicology: Medieval Music.

555.02 Studies in Musicology: Renaissance Music
UGRD 4
Introduction to specialized topics and issues in historical musicology and ethnomusicology: Renaissance Music.

555.03 Studies in Musicology: Baroque Music
UGRD 4
Introduction to specialized topics and issues in historical musicology and ethnomusicology: Baroque Music.

555.04 Studies in Musicology: Classic Music
UGRD 4
Introduction to specialized topics and issues in historical musicology and ethnomusicology: Classic Music.

555.05 Studies in Musicology: Romantic Music
UGRD 4
Introduction to specialized topics and issues in historical musicology and ethnomusicology: Romantic Music.

555.06 Studies in Musicology: 20th-Century Music
UGRD 4
Introduction to specialized topics and issues in historical musicology and ethnomusicology: 20th-Century Music.
555.07 Studies in Musicology: 19th-Century Russian Music UGRD 5
Music
Introduction to specialized topics and issues in historical musicology and ethnomusicology: 19th-Century Russian Music.
Sp Qtr. Prereq: Admission to BM in music history or permission of instructor.

555.08 Studies in Musicology: 20th-Century Russian Music UGRD 5
Music
Introduction to specialized topics and issues in historical musicology and ethnomusicology: 20th-Century Russian Music.
* Wi Qtr. Prereq: Admission to BM in music history or permission of instructor.

566 Jazz Ensemble Techniques UGRD 3
The organization and operation of the public school jazz ensemble.
** Wi Qtr. 3-hr cl; Prereq: Permission of instructor.

572 Teaching General Music in Secondary Schools UGRD 3
The role of music in adolescents' general education and the development of competencies essential to teaching.
Au, Wi Qtr. 3 cl; Prereq: Professional standing in music education.

574 Teaching Choral Music I UGRD 3
Comprehensive choral music education, rehearsal techniques, and concert preparation; quarter culminates in choral recital.
Au Qtr. 3 cl; Prereq: 262.12 and 264.02, and professional standing in music education.

575 Teaching Choral Music II UGRD 3
Curriculum planning for elementary through high school choirs, ethical and social issues, and survey of OMEA and world choral repertoire.
Wi Qtr. 3 cl; Prereq: 574 and professional standing in music education.

576 Teaching Instrumental Music in Elementary and Middle Schools UGRD 3
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.
Au Qtr. 3 cl; Prereq: 261.07, 261.41, 261.42, 261.43, 261.44, 261.45, 261.46, 262.03, 262.05, 262.11, and professional standing in music education.

577 Teaching Instrumental Music in Secondary Schools UGRD 3
The role of instrumental music instruction in public education, techniques of teaching instrumental music, study of music appropriate to musical organizations in secondary schools.
Wi Qtr. 3 cl; 1 1-hr lab. Prereq: 576 and professional standing in music education.

578 Teaching General Music in Elementary Schools I: Introduction and Repertoire UGRD 3
Introduction to Dalcroze and Orff methodologies; study and analysis of music repertoire suitable for children in elementary schools.
Au Qtr. 2 1.5-hr cl, 1 lab hr. Prereq: Professional standing in music education. Not open to students with credit for 571.

579 Teaching General Music in Elementary Schools II: Planning and Practicum UGRD 3
A study of Kodaly and intermediate Orff methodologies; the planning and implementation of musical experiences for children in elementary schools.
Wi Qtr. 2 1.5-hr cl, 1 lab hr. Prereq: 578 and professional standing in music education. Not open to students with credit for 570.

586 Student Teaching in Music in Elementary Schools UGRD 3-8
Assignment to area elementary schools for observation and teaching experiences with groups of students and cooperating teachers; students attend weekly seminars with University supervisors.
Au, Wi, Sp Qtr. Repeatable to a maximum of 8 cr hrs.

587 Student Teaching in Music in Secondary Schools UGRD 3-8
Assignment to area secondary schools for observation and teaching experiences with groups of students and cooperating teachers; students attend weekly seminars with University supervisors.
Au, Wi, Sp Qtr. Repeatable to a maximum of 8 cr hrs.

591 Survey of the Music Industry UGRD 3
Economic aspects of music in America with reference to recordings, films, TV, radio, music theatre, booking, management, publishing, and manufacturing.
* Sp Qtr. 3 cl; Prereq: Sr standing or permission of instructor.

601.11 Applied Music (Principal): Piano UGRD 1-2
Elective applied music instruction at the senior level for students in the BME curriculum; continuation of study of literature, technique, and musicianship: Piano.
Prereq: 501 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of director of School of Music. Repeatable to a maximum of 6 cr hrs.

601.12 Applied Music (Principal): Jazz Piano UGRD 1-2
Elective applied music instruction at the senior level for students in the BME curriculum; continuation of study of literature, technique, and musicianship: Jazz Piano.
Prereq: 501 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of director of School of Music. Repeatable to a maximum of 8 cr hrs.

601.21 Applied Music (Principal): Voice UGRD 1-2
Elective applied music instruction at the senior level for students in the BME curriculum; continuation of study of literature, technique, and musicianship: Voice.
Prereq: 501 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of director of School of Music. Repeatable to a maximum of 8 cr hrs.

601.31 Applied Music (Principal): Violin UGRD 1-2
Elective applied music instruction at the senior level for students in the BME curriculum; continuation of study of literature, technique, and musicianship: Violin.
Prereq: 501 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of director of School of Music. Repeatable to a maximum of 8 cr hrs.

601.32 Applied Music (Principal): Viola UGRD 1-2
Elective applied music instruction at the senior level for students in the BME curriculum; continuation of study of literature, technique, and musicianship: Viola.
Prereq: 501 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of director of School of Music. Repeatable to a maximum of 8 cr hrs.

601.33 Applied Music (Principal): Cello UGRD 1-2
Elective applied music instruction at the senior level for students in the BME curriculum; continuation of study of literature, technique, and musicianship: Cello.
Prereq: 501 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of director of School of Music. Repeatable to a maximum of 8 cr hrs.

601.34 Applied Music (Principal): Double Bass UGRD 1-2
Elective applied music instruction at the senior level for students in the BME curriculum; continuation of study of literature, technique, and musicianship: Double Bass.
Prereq: 501 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of director of School of Music. Repeatable to a maximum of 8 cr hrs.

601.35 Applied Music (Principal): Guitar UGRD 1-2
Elective applied music instruction at the senior level for students in the BME curriculum; continuation of study of literature, technique, and musicianship: Guitar.
Prereq: 501 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of director of School of Music. Repeatable to a maximum of 8 cr hrs.

601.41 Applied Music (Principal): Flute UGRD 1-2
Elective applied music instruction at the senior level for students in the BME curriculum; continuation of study of literature, technique, and musicianship: Flute.
Prereq: 501 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of director of School of Music. Repeatable to a maximum of 8 cr hrs.

601.42 Applied Music (Principal): Oboe UGRD 1-2
Elective applied music instruction at the senior level for students in the BME curriculum; continuation of study of literature, technique, and musicianship: Oboe.
Prereq: 501 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of director of School of Music. Repeatable to a maximum of 8 cr hrs.

601.43 Applied Music (Principal): Clarinet UGRD 1-2
Elective applied music instruction at the senior level for students in the BME curriculum; continuation of study of literature, technique, and musicianship: Clarinet.
Prereq: 501 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of director of School of Music. Repeatable to a maximum of 8 cr hrs.

601.44 Applied Music (Principal): Bass Clarinet UGRD 1-2
Elective applied music instruction at the senior level for students in the BME curriculum; continuation of study of literature, technique, and musicianship: Bass Clarinet.
Prereq: 501 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of director of School of Music. Repeatable to a maximum of 8 cr hrs.

601.45 Applied Music (Principal): Saxophone UGRD 1-2
Elective applied music instruction at the senior level for students in the BME curriculum; continuation of study of literature, technique, and musicianship: Saxophone.
Prereq: 501 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of director of School of Music. Repeatable to a maximum of 8 cr hrs.
322 Music

601.46 Applied Music (Principal): Bassoon UGRD 1-2
Elective applied music instruction at the senior level for students in the BME curriculum; continuation of study of literature, technique, and musicianship: Bassoon.
Prereq: 501 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of director of School of Music. Repeatable to a maximum of 6 cr hrs.

601.51 Applied Music (Principal): Horn UGRD 1-2
Elective applied music instruction at the senior level for students in the BME curriculum; continuation of study of literature, technique, and musicianship: Horn.
Prereq: 501 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of director of School of Music. Repeatable to a maximum of 6 cr hrs.

601.53 Applied Music (Principal): Trombone UGRD 1-2
Elective applied music instruction at the senior level for students in the BME curriculum; continuation of study of literature, technique, and musicianship: Trombone.
Prereq: 501 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of director of School of Music. Repeatable to a maximum of 6 cr hrs.

601.55 Applied Music (Principal): Tuba UGRD 1-2
Elective applied music instruction at the senior level for students in the BME curriculum; continuation of study of literature, technique, and musicianship: Tuba.
Prereq: 501 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of director of School of Music. Repeatable to a maximum of 6 cr hrs.

601.71 Applied Music (Principal): Percussion UGRD 1-2
Elective applied music instruction at the senior level for students in the BME curriculum; continuation of study of literature, technique, and musicianship: Percussion.
Prereq: 501 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of director of School of Music. Repeatable to a maximum of 6 cr hrs.

601.91 Applied Music (Principal): Harp UGRD 1-2
Elective applied music instruction at the senior level for students in the BME curriculum; continuation of study of literature, technique, and musicianship: Harp.
Prereq: 501 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of director of School of Music. Repeatable to a maximum of 6 cr hrs.

602.11 Applied Music (Major): Piano UGRD 4
Applied music instruction required in BM curricula in performance to develop professional qualities of musicianship; full recital required in senior year: Piano.
Prereq: 502 and written permission of applied area faculty. Repeatable to a maximum of 24 cr hrs.

602.21 Applied Music (Major): Voice UGRD 4
Applied music instruction required in BM curricula in performance to develop professional qualities of musicianship; full recital required in senior year: Voice.
Prereq: 502 and written permission of applied area faculty. Repeatable to a maximum of 24 cr hrs.

602.31 Applied Music (Major): Violin UGRD 4
Applied music instruction required in BM curricula in performance to develop professional qualities of musicianship; full recital required in senior year: Violin.
Prereq: 502 and written permission of applied area faculty. Repeatable to a maximum of 24 cr hrs.

602.32 Applied Music (Major): Viola UGRD 4
Applied music instruction required in BM curricula in performance to develop professional qualities of musicianship; full recital required in senior year: Viola.
Prereq: 502 and written permission of applied area faculty. Repeatable to a maximum of 24 cr hrs.

602.33 Applied Music (Major): Cello UGRD 4
Applied music instruction required in BM curricula in performance to develop professional qualities of musicianship; full recital required in senior year: Cello.
Prereq: 502 and written permission of applied area faculty. Repeatable to a maximum of 24 cr hrs.

602.34 Applied Music (Major): Double Bass UGRD 4
Applied music instruction required in BM curricula in performance to develop professional qualities of musicianship; full recital required in senior year: Double Bass.
Prereq: 502 and written permission of applied area faculty. Repeatable to a maximum of 24 cr hrs.

602.41 Applied Music (Major): Flute UGRD 4
Applied music instruction required in BM curricula in performance to develop professional qualities of musicianship; full recital required in senior year: Flute.
Prereq: 502 and written permission of applied area faculty. Repeatable to a maximum of 24 cr hrs.

602.42 Applied Music (Major): Oboe UGRD 4
Applied music instruction required in BM curricula in performance to develop professional qualities of musicianship; full recital required in senior year: Oboe.
Prereq: 502 and written permission of applied area faculty. Repeatable to a maximum of 24 cr hrs.

602.45 Applied Music (Major): Saxophone UGRD 4
Applied music instruction required in BM curricula in performance to develop professional qualities of musicianship; full recital required in senior year: Saxophone.
Prereq: 502 and written permission of applied area faculty. Repeatable to a maximum of 24 cr hrs.

602.46 Applied Music (Major): Bassoon UGRD 4
Applied music instruction required in BM curricula in performance to develop professional qualities of musicianship; full recital required in senior year: Bassoon.
Prereq: 502 and written permission of applied area faculty. Repeatable to a maximum of 24 cr hrs.

602.51 Applied Music (Major): Horn UGRD 4
Applied music instruction required in BM curricula in performance to develop professional qualities of musicianship; full recital required in senior year: Horn.
Prereq: 502 and written permission of applied area faculty. Repeatable to a maximum of 24 cr hrs.

602.53 Applied Music (Major): Trombone UGRD 4
Applied music instruction required in BM curricula in performance to develop professional qualities of musicianship; full recital required in senior year: Trombone.
Prereq: 502 and written permission of applied area faculty. Repeatable to a maximum of 24 cr hrs.

602.55 Tuba UGRD 4
Applied music instruction required in BM curricula in performance to develop professional qualities of musicianship; full recital required in senior year: Tuba.
Prereq: 502 and written permission of applied area faculty. Repeatable to a maximum of 24 cr hrs.

602.71 Applied Music (Major): Percussion UGRD 4
Applied music instruction required in BM curricula in performance to develop professional qualities of musicianship; full recital required in senior year: Percussion.
Prereq: 502 and written permission of applied area faculty. Repeatable to a maximum of 24 cr hrs.

602.91 Applied Music (Major): Harp UGRD 4
Applied music instruction required in BM curricula in performance to develop professional qualities of musicianship; full recital required in senior year: Harp.
Prereq: 502 and written permission of applied area faculty. Repeatable to a maximum of 24 cr hrs.

605 Senior Recital UGRD 0
Required senior recital for the bachelor of music performance degree.
Au, Wi, Sp Qtr. Arr. Prereq: Two quarters of 602. This course is graded S/U.
607 Performance Enhancement I UGRD 1
Skills and techniques designed to enhance the quality of public performances.
Au, Wi, Sp Qtrs. 1 cl. Not limited to music majors. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

608 Performance Enhancement II UGRD 1
Advanced skills and techniques designed to enhance the quality of public performances.
Au, Wi, Sp Qtrs. 2 cl. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

610 Alexander Technique UGRD 1
The relationship of kinesthetic perception and the postural reflexes to physical coordination in performance.
Au, Wi, Sp Qtrs. 2 cl. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

611 Piano Pedagogy I UGRD 2
An analysis of teaching techniques and materials for individual and group instruction in piano with an emphasis on the elementary and intermediate levels.
Au Qtr. 2 cl. Prereq: 6 cr hrs in 501.01 or 501.11 or permission of instructor.

612 Piano Pedagogy II UGRD 2
An analysis of repertoire for piano study at the intermediate and early advanced levels.
Wi Qtr. 2 cl. Prereq: 611 or permission of instructor.

613 Piano Pedagogy III UGRD 2
An analysis of the development of piano technique through readings in pedagogical treatises and applications in standard piano repertoire from various style periods.
Sp Qtr. 2 cl. Prereq: 612 or permission of instructor.

617 Advanced Alexander Technique UGRD 3
Advanced study in Alexander Technique.
Au, Wi, Sp Qtrs. Prereq: Completion of Intro to Alexander Technique and permission of the instructor. Repeatable to a maximum of 18 cr hrs.

620 Extended Tonality from Wagner to Hindemith: Theory and Analysis UGRD 3
Systematic analytic observation of tonal art music from the last decades of the nineteenth century to World War II.
Au Qtr. 3-hr cl. Prereq: 423.

621 Theory and Analysis: 17th-18th Centuries UGRD 3
Analysis of representative works from the 17th-18th century, introducing relevant theoretical concepts.
Wi Qtr. 3 cl. Prereq: 423 or a score in the upper third on the grad placement exam.

622 Theory and Analysis: 19th Century UGRD 3
Analysis of representative works from the 19th century, introducing relevant theoretical concepts.
Sp Qtr. 3 cl. Prereq: 423 or a score in the upper third on the grad placement exam.

623 Theory and Analysis: 20th Century UGRD 3
Analysis of representative works from the 20th century, introducing relevant theoretical concepts.
Au Qtr. 3 cl. Prereq: 423 or a score in the upper third on the grad placement exam.

625 Orchestration II UGRD 3
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.
Sp Qtr. 2 1.5-hr cl. Prereq: 524.

630 Composers Seminar UGRD 3
Contemporary topics in composition and theory; presentation, performance, and criticism of student compositions and papers.
Au, Wi, Sp Qtrs. 1.5-3 hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

631 Intermediate Studies in Counterpoint UGRD 3
Counterpoint based on the polyphonic style of the 18th century; analysis of representative works and practice in writing two- and three-part inventions.
Wi Qtr. 3 cl. Prereq: 531 or permission of instructor.

635 Composition II UGRD 3-5
Practice in creative writing; analysis, and evaluation; employment of contemporary methods of composition.
Au, Wi, Sp Qtrs. 3 cl. Prereq: 535 or permission of instructor. Repeatable to a maximum of 20 cr hrs.

636 Introduction to Electronic Music Synthesis UGRD 3
Techniques of composition with electronic media; history, literature, and criticism; score preparation; principles of audio engineering; relationships to other communications media.
Au Qtr. 3 cl. Prereq: 423 and permission of instructor.

637 Composition with Electronic Media I UGRD 3-5
Individual composition projects; further study of sound synthesis techniques, including modification of natural sounds.
Au, Wi, Sp Qtrs. 3 cl. Prereq: 535, real time electro acoustical modification or equiv and 636. Repeatable to a maximum of 15 cr hrs.

638 Audio Recording UGRD 3
Audio recording; microphones and microphone placement; multiple-track recording; mixing; equalization and special effects.
*Wi Qtr. 3 cl. Prereq: ElecEng 205 or equiv with written permission of instructor.

639 Audio Recording Laboratory UGRD 2
Creating an audio recording; familiarity with the recording studio and console, use and placement of microphones; multiple-track recording equalization and special effects; mixing.
^Sp Qtr. 1 cl. 1.5-hr lab. Prereq: 538. Repeatable to a maximum of 6 cr hrs.

645 Music's Meanings UGRD 3-5
An exploration of approaches to ways that music conveys meaning; taught online.
Sp Qtr. Arr. Prereq: Grad standing in music or permission of instructor. Distance Learning course.

646 History of Music in the United States UGRD 3
A survey of music in the United States from colonial times until the present.
*Wi Qtr. 3-hr cl. Prereq: Jr or sr standing.

647 Individual Composers: Their Lives and Works UGRD 3
A comprehensive study of the works of an individual composer; topic varies from year to year.
^ 3 cl. Prereq: 521 or 531, and 243.

648 History and Literature of Chamber Music UGRD 3
A survey of the history and stylistic development of chamber music.
* Au Qtr. 2 1.5-hr cl. Prereq: 243 and 521 or 531.

649 History and Literature of Symphonic Music UGRD 3
A survey of the history and stylistic development of symphonic music.
^Au Qtr. 2 1.5-hr cl. Prereq: 243 and 521 or 531.

650 History and Literature of Choral Music UGRD 3
A survey of the history and stylistic development of choral music.
^Wi Qtr. 2 1.5-hr cl. Prereq: 243 and 521 or 531.

651 History and Literature of Opera UGRD 3
A survey of the history and stylistic development of opera.
^Sp Qtr. 2 1.5-hr cl. Prereq: 243 and 521 or 531.

652 18th and 19th Century Song Literature UGRD 3
The study of selected 18th and 19th century song literature.
* Au Qtr. 3 cl. Prereq: 243 and 423 or grad standing in music.

653 Piano Literature UGRD 3
A study of the piano sonata and other characteristic forms from the pre-piano period to the present time.
Sp Qtr. 3 cl. Prereq: 243 and 521 or 531.

655 20th Century Song Literature UGRD 3
The study of selected 20th century song literature.
*Wi Qtr. 2 1.5-hr cl. Prereq: 652 or grad standing.

660 Advanced Conducting (Instrumental) UGRD 3
An attempt to develop the power to interpret the larger forms of instrumental literature and to read from full score.
Wi Qtr. 3 cl. Prereq: 262.11 and 521.

661 Advanced Conducting (Choral) UGRD 3
Development of power to interpret the larger forms of choral literature and to read from full score.
Sp Qtr. 3 cl. Prereq: 262.12 and 521.

662 Choral Repertoire UGRD 2
Reading and study of sacred and secular choral literature.
Su, Wi Qtrs. 1 cl, 1 2-hr lab. Repeatable to a maximum of 6 cr hrs.

663 School Orchestra Literature UGRD 3
Examines orchestral repertoire for study in elementary, middle, and high school orchestra programs, and develops strategies for teaching these pieces.
Sp Qtr. 2.5-hr cl. Prereq: Music major.

664 Wind Band Repertoire UGRD 3
Examines wind band repertoire appropriate for study in elementary, middle and high school band programs and develops strategies for teaching these pieces.
2 1.5-hr cl. Prereq: Music major.

665 Content and Structure in Arts Education UGRD 3
Students from art, dance, music, and theatre education engage in dialogue, research, and peer teaching focused upon the educational content and structure of each discipline.
Sp Qtr. 1.5-hr cl. Open only to majors in art, dance, music, and theatre education and to grad students seeking certification. Not open to students with credit for ArtEduc 655.

666 Marching Band Techniques UGRD 3
A study of the marching band including laboratory work in marching techniques, computerized charting, and show design.
Sp Qtr. 1 3-hr cl. Not open to freshmen. Open to non-music majors with written permission of instructor.

688 Instrument Repair GRAD 3
Development of practical skills in identifying and correcting minor repair problems on band and orchestral instruments and their accessories.
Su Qtr. 5 days, 4 hrs/day. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs. Some musical knowledge an asset.
Music

669 Music Methods for Elementary Classroom GRAD 3
Teachers
Analysis and appraisal of the music program in elementary schools; relationship of music to
total school program; some emphasis on integrating the arts in education.
Su, Su Term 1, Qtrs. 2-3 hr cl. Prereq: 270 or permission of instructor.

672 Introduction to Ethnomusicology UGRD 3
General concepts of ethnomusicology applied to the study of different ways in which music has
been used outside the Western European tradition of the fine arts.
Wi Qtr. 2 1.5-hr cl. Prereq: Jr or sr grad standing.

674 Russian Opera: Meanings and Identities UGRD 5
Study of Russian opera from 1836-1936 in relation to concurrent literary, cultural and social
developments. * Wi Qtr. 2 1.5-hr cl. Not open to students with credit for Russian 674. Cross-listed in Russian.

675 Music of the Russian Folk Tradition UGRD 3
An interdisciplinary study of traditional music of Russian peasants.
* Wi Qtr. 2 1.5-hr cl. Prereq: Jr or sr grad standing.

676 Music Technology GRAD 2
A graduate-level overview of music technology as used in research, education, performance
and composition.
Su, Wi Qtrs. 2-1 hr cl. Prereq: Permission of instructor. Not open to students with credit for 220.

677 Multimedia for Musicians UGRD 3
Designed to provide musicians with the tools to create multimedia works for use in music education,
research, or as a creative medium.
Sp Qtr. 3 1 hr cl. Prereq: 220 or 676 or permission of instructor.

679 Music Theory and Composition Senior Project UGRD 2
Composition students: preparation of senior composition and half recital of student's compositions;
theory students: preparation of senior paper and presentation of paper.
Au, Wi, Sp Qtr. Prereq: Admission into music theory and composition major and permission of instructor.
Repeatable to a maximum of 6 cr hrs. This course is graded SU/NC.

692 Workshop in Music GRAD 1-15
Concentrated study in an area of music; content of workshop depends on selected emphasis.
Su, Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 15 cr hrs.

693 Individual Studies UGRD 1-15
Individual studies in specified problems in the field of music.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.
This course is graded SU/NC.

694 Group Studies UGRD 1-5
Supervised group studies of special problems in the field of music.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

695 The Art of Teaching Strings in the Schools GRAD 3
A graduate seminar on the key elements and research on teaching string instruments in K-12 schools.
Su Qtr. Prereq: Undergrad degree in music education.

697 Study at a Foreign Institution UGRD 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that
work.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs.
This course is Progress (P) graded. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

698.01 Study Tour: Domestic UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office
for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only.

698.02 Study Tour: Foreign UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office
for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only.

699 Undergraduate Scholarship: Research and Creative Activity in Music UGRD 1-15
Undergraduate research or creative activities in varying topics. 699H (honors) may be available
This course is graded SU/NC.

701.11 Applied Music (Non-Major): Piano UGRD 1-2
Applied music study with special emphasis on literature and performance practices: Piano.
Prereq: Placement exam or permission of applied area faculty. Repeatable to a maximum of 12 cr hrs.

701.21 Applied Music (Non-Major): Voice GRAD 1-2
Applied music study with special emphasis on literature and performance practices: Voice.
Prereq: Placement exam or permission of applied area faculty. Repeatable to a maximum of 12 cr hrs.

701.31 Applied Music (Non-Major): Violin UGRD 1-2
Applied music study with special emphasis on literature and performance practices: Violin.
Prereq: Placement exam or permission of applied area faculty. Repeatable to a maximum of 12 cr hrs.

701.32 Applied Music (Non-Major): Viola UGRD 1-2
Applied music study with special emphasis on literature and performance practices: Viola.
Prereq: Placement exam or permission of applied area faculty. Repeatable to a maximum of 12 cr hrs.

701.33 Applied Music (Non-Major): Cello UGRD 1-2
Applied music study with special emphasis on literature and performance practices: Cello.
Prereq: Placement exam or permission of applied area faculty. Repeatable to a maximum of 12 cr hrs.

701.34 Applied Music (Non-Major): Double Bass UGRD 1-2
Applied music study with special emphasis on literature and performance practices: Double Bass.
Prereq: Placement exam or permission of applied area faculty. Repeatable to a maximum of 12 cr hrs.

701.41 Applied Music (Non-Major): Flute UGRD 1-2
Applied music study with special emphasis on literature and performance practices: Flute.
Prereq: Placement exam or permission of applied area faculty. Repeatable to a maximum of 12 cr hrs.

701.42 Applied Music (Non-Major): Oboe UGRD 1-2
Applied music study with special emphasis on literature and performance practices: Oboe.
Prereq: Placement exam or permission of applied area faculty. Repeatable to a maximum of 12 cr hrs.

701.43 Applied Music (Non-Major): Clarinet UGRD 1-2
Applied music study with special emphasis on literature and performance practices: Clarinet.
Prereq: Placement exam or permission of applied area faculty. Repeatable to a maximum of 12 cr hrs.

701.44 Applied Music (Non-Major): Bass Clarinet UGRD 1-2
Applied music study with special emphasis on literature and performance practices: Bass Clarinet.
Prereq: Placement exam or permission of applied area faculty. Repeatable to a maximum of 12 cr hrs.

701.45 Applied Music (Non-Major): Saxophone UGRD 1-2
Applied music study with special emphasis on literature and performance practices: Saxophone.
Prereq: Placement exam or permission of applied area faculty. Repeatable to a maximum of 12 cr hrs.

701.46 Applied Music (Non-Major): Bassoon UGRD 1-2
Applied music study with special emphasis on literature and performance practices: Bassoon.
Prereq: Placement exam or permission of applied area faculty. Repeatable to a maximum of 12 cr hrs.

701.51 Applied Music (Non-Major): Horn UGRD 1-2
Applied music study with special emphasis on literature and performance practices: Horn.
Prereq: Placement exam or permission of applied area faculty. Repeatable to a maximum of 12 cr hrs.

701.52 Applied Music (Non-Major): Trumpet UGRD 1-2
Applied music study with special emphasis on literature and performance practices: Trumpet.
Prereq: Placement exam or permission of applied area faculty. Repeatable to a maximum of 12 cr hrs.

701.53 Applied Music (Non-Major): Trombone UGRD 1-2
Applied music study with special emphasis on literature and performance practices: Trombone.
Prereq: Placement exam or permission of applied area faculty. Repeatable to a maximum of 12 cr hrs.

701.54 Applied Music (Non-Major): Euphonium UGRD 1-2
 Applied music study with special emphasis on literature and performance practices: Euphonium.
Prereq: Placement exam or permission of applied area faculty. Repeatable to a maximum of 12 cr hrs.

701.55 Applied Music (Non-Major): Tuba UGRD 1-2
Applied music study with special emphasis on literature and performance practices: Tuba.
Prereq: Placement exam or permission of applied area faculty. Repeatable to a maximum of 12 cr hrs.

701.71 Applied Music (Non-Major): Percussion UGRD 1-2
Applied music study with special emphasis on literature and performance practices.
Prereq: Placement exam or permission of applied area faculty. Repeatable to a maximum of 12 cr hrs.

701.91 Applied Music (Non-Major): Harp UGRD 1-2
Applied music study with special emphasis on literature and performance practices: Harp.
Prereq: Placement exam or permission of applied area faculty. Repeatable to a maximum of 12 cr hrs.

710 Introduction to Operatic Stage Techniques GRAD 2
An introduction to stage movement techniques, character analysis, role preparation, and aria
interpretation as applied to the operatic stage.
Au Qtr. 3 cl. Prereq: Grad standing in voice or permission of instructor.

715 Structure and Function of the Singing Mechanism GRAD 3
Anatomy and acoustics of the voice as they relate to developmental vocal pedagogy.
Au Qtr. 3 cl. Prereq: Permission of instructor. Not open to students with credit for 615.
727 Keyboard Harmony for Graduate Students     GRAD  3
Application of keyboard musicianship, including sight reading, harmonization of melodies,
harmony, improvisation, transposition, realization of figured bass and modulation.
Au Qtr. 3 cl  PreReq: 294.01, 423, or equiv with written permission of instructor.
730.01 The Musical Object: Toward Musical Sound     GRAD  5
An introduction to musicology focused on sounding music.
730.02 The Musical Subject: Toward Musical Context     GRAD  5
An introduction to musicology focused on music contexts.
740 Studies in Medieval Music     GRAD  4
An introduction to scholarly issues in the music of the Middle Ages.
** Au Qtr. 2 1.5-hr cl  PreReq: 241 or equiv; 521 or 531 or equiv; grad standing. Not open to students with credit for 640.
741 Studies in Renaissance Music     GRAD  4
An introduction to scholarly issues in the music of the Renaissance.
** Wi Qtr. 2 1.5-hr cl  PreReq: 241 or equiv; 521 or 531 or equiv; grad standing. Not open to students with credit for 641.
742 Studies in Baroque Music     GRAD  4
An introduction to scholarly issues in the music of the Baroque era.
** Sp Qtr. 2 1.5-hr cl  PreReq: 242 or equiv; 521 or 531 or equiv; grad standing. Not open to students with credit for 642.
743 Studies in Classic Music     GRAD  4
An introduction to scholarly issues in the music of the classic era.
* Au Qtr. 2 1.5-hr cl  PreReq: 242 or equiv; 521 or grad standing. Not open to students with credit for 643.
744 Studies in Romantic Music     GRAD  4
An introduction to scholarly issues in the music of the romantic era.
* Wi Qtr. 2 1.5-hr cl  PreReq: 243 or equiv; 521 or equiv; grad standing. Not open to students with credit for 644.
745 Studies in 20th-Century Music     GRAD  4
An introduction to scholarly issues in the music of the twentieth century.
* Sp Qtr. 2 1.5-hr cl  PreReq: 243 or equiv; 521 or 531 or equiv; grad standing. Not open to students with credit for 645.
746 Studies in 19th-Century Russian Music     GRAD  5
An introduction to scholarly issues in 19th-century Russian music.
Sp Qtr. 2 1.5-hr cl  PreReq: Grad standing in music or Slavic. Not open to students with credit for 673.
747 Studies in 20th-Century Russian Music     GRAD  5
An introduction to scholarly issues in 20th-century Russian music.
* Au Qtr. 2 1.5-hr cl  PreReq: Grad standing in music or Slavic. Not open to students with credit for 674.
748 Contemporary Art Music Traditions of Africa and the Diaspora     UGRD  5
An examination of selected published and unpublished musical works by contemporary composers of sub-Saharan Africa and of African descent.
** Sp Qtr. 2 1.5-hr cl  PreReq: Jr or Sr or grad standing. Not open to students with credit for AMNAST 748. Cross-listed in African-American and African Studies.
752.01 Performance Literature: Piano     GRAD  3
Intensive study of representative literature for the instrument from each style period: Piano.
Au, Wi Qtrs. PreReq: Admission to MM curriculum or permission of instructor. Repeatable to a maximum of 6 cr hrs.
752.02 Performance Literature: Voice     GRAD  3
Intensive study of representative literature for the instrument from each style period: Voice.
PreReq: Admission to MM curriculum or permission of instructor. Repeatable to a maximum of 6 cr hrs.
752.03 Performance Literature: Strings     GRAD  3
Intensive study of representative literature for the instrument from each style period: Strings.
Au, Wi, Sp Qtrs. PreReq: Admission to MM curriculum or permission of instructor. Repeatable to a maximum of 6 cr hrs.
752.04 Performance Literature: Woodwinds     GRAD  3
Intensive study of representative literature for the instrument from each style period: Woodwinds.
Au, Wi Qtrs. PreReq: Admission to MM curriculum or permission of instruction. Repeatable to a maximum of 6 cr hrs.
752.05 Performance Literature: Brass     GRAD  3
Intensive study of representative literature for the instrument from each style period: Brass.
Wi Qtr. PreReq: Admission to MM curriculum or permission of instructor. Repeatable to a maximum of 6 cr hrs.
752.07 Performance Literature: Percussion     GRAD  3
Intensive study of representative literature for the instrument from each style period: Percussion.
* Wi, Sp Qtrs. PreReq: Admission to MM curriculum or permission of instructor. Repeatable to a maximum of 6 cr hrs.
753 Teaching the Technology-Centered Music Curriculum     GRAD  3
The application of current technology to teaching music concept development in elementary music programs.
* Su Qtr. Arr. PreReq: Baccalaureate degree in music or music education.
754 Midwest Summer String Teachers Seminar     GRAD  3
Annual seminar on current materials, music, assessment procedures, and strategies for teaching music in schools.
Su Qtr. PreReq: Grad standing. Open to only those with undergraduate degrees in music.
Repeatable to a maximum of 30 cr hrs.
756 Improvisation with Orff Instruments     UGRD  3-5
A study of the development of children's musical concepts through improvisation experiences and the use of Orff instruments.
Su (2nd term), Sp Qtr. 1 d, 2 1.5-hr labs. PreReq: 570 or equiv with written permission of instructor.
757 Dalcroze Eurhythmics     UGRD  3
A training in musical rhythm through body experience; eurhythmics is the process of educating the body to internalize rhythmic structures in music and dance.
Wi Qtr. 2 1.3-hr cl  Open to music, dance, and theatre majors. Repeatable to a maximum of 6 c hrs.
759 Teaching Music to Culturally Diverse Learners     GRAD  3
Examination of the importance of music as a cultural indicator in learners' responses to and participation in music.
** Wi Qtr. 2 1.5-hr cl  PreReq: Grad standing or permission of instructor.
760 Basic Concepts in Music Education     GRAD  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.
Au Qtr. 3 cl  PreReq: 566 or 567 or equiv.
761 Principles of Music Learning     GRAD  3
Analysis of the learning process in music as related to problems of music instruction to the public school.
Sp Qtr. 3 cl  PreReq: 566 or 567 or equiv.
762 Principles and Practices in Elementary School Music     GRAD  3
Analysis and appraisal of the music program in elementary schools including the relationship of music to the total school program.
** Sp Qtr. 3 cl  PreReq: 578 or equiv.
763 Literature of Elementary School Music     GRAD  3
A critical study of folk and art music of various cultures and historic periods for the general music class.
* Sp Qtr. 3 cl  PreReq: 571 or 578 or equiv.
764 Principles and Practices in Vocal Music Education     GRAD  3
Analysis and appraisal of the organization, purpose, and development of the vocal music program in secondary schools.
Sp Qtr. 3 cl  PreReq: 575 or equiv.
765 Literature for Vocal Music Education     GRAD  3
A study of vocal literature of various cultures and historic periods for the general music program.
** Sp Qtr. PreReq: 575 or equiv.
766 Teaching Practices in General Music     UGRD  3
Study of current concepts in organizing and teaching general music in the secondary school.
** Wi Qtr. 3 cl  PreReq: 572 or equiv.
768 Principles and Practices in Instrumental Music Education     GRAD  3
Role of instrumental music in the public schools; relationship of music to society and the total music program; historical development, evaluation, and future trends.
* Sp Qtr. 3 cl  PreReq: 577 or equiv.
769 Literature for Instrumental Music Education     GRAD  3
Relationship of teaching materials and performance repertory to education objectives: selection of literature, interpretation, rehearsal procedures, conducting problems, attainment of musical understanding through literature.
* Su, Su Term 1 Qtr. 3 cl  PreReq: 577 or equiv.
770 Introduction to Research in Music Education     GRAD  3
A study of methods of research as applied to problems in school music.
Wi Qtr. 3 cl  PreReq: 586 or 587 or equiv.
771 Instrumental Techniques     GRAD  3
Introduces and reviews pedagogical techniques and instructional strategies for the teaching of brass, woodwind, percussion and string instruments.
Su Qtr. 3 1-hr cl  PreReq: Grad standing.
Music

772 Music in Early Childhood UGRD 3-5
Analysis of research, principles, and practices in early childhood music and application to programs of learning for young children.
* Sp Qtr. 2 1.5-hr cl. Prereq: Advanced undergrad standing or above and permission of instructor. For students interested in teaching or research in early childhood music and for experienced personnel in teaching young children.

773 Introduction to Music for Exceptional Learners GRAD 3
Overview of issues, principles, practices, and research related to the music education of exceptional persons.
** Su, Su Term 1 Qtrs. 2 2.5-hr cl. Prereq: Advanced undergrad standing and permission of instructor.

774 Directive Teaching in Music GRAD 3
Principles and practices of music classroom management; directive teaching emphasizing clarity of objectives, assessment, and systematic instructional procedures for skill and concept teaching.
** Su, Su Term 1 Qtrs. 2 2.5-hr cl. Prereq: Advanced undergrad standing and permission of instructor.

775 Teaching Music for Exceptional Learners GRAD 3
An analysis and concentrated study of materials and practices appropriate to teaching music for exceptional learners.
* Sp Qtr. Prereq: Advanced undergrad standing and permission of instructor.

777 Practicum in Teaching Music for Handicapped UGRD 4-10 Learners
Assignment to area schools and institutions for observation and music teaching experiences with groups of handicapped teenagers and cooperating teachers.
Su, Au, Wi, Sp Qtrs. 5-15 hrs per wk in schools or institutions. Prereq: Advanced undergrad standing and permission of instructor. Repeatable to a maximum of 10 cr hrs.

780.01 Ensemble: Choral GRAD 1-2
Study and performance of repertoire determined by student's specific ensemble: Choral. Prereq: Admission by audition and permission of instructor. Repeatable to a maximum of 24 cr hrs.

780.02 Ensemble: Orchestral GRAD 1-2
Study and performance of repertoire determined by student's specific ensemble: Orchestral. Prereq: Admission by audition and permission of instructor. Repeatable to a maximum of 24 cr hrs.

780.03 Ensemble: Band GRAD 1-2
Study and performance of repertoire determined by student's specific ensemble: Band. Prereq: Admission by audition and permission of instructor. Repeatable to a maximum of 24 cr hrs.

780.04 Ensemble: Chamber and Small Ensembles GRAD 1-2
Study and performance of repertoire determined by student's specific ensemble: Chamber and Small Ensembles. Prereq: Admission by audition and permission of instructor. Repeatable to a maximum of 24 cr hrs.

780.05 Ensemble: Piano Accompanying Practicum GRAD 1-2
Study and performance of repertoire determined by student's specific ensemble: Piano Accompanying Practicum. Prereq: Admission by audition and permission of instructor. Repeatable to a maximum of 24 cr hrs.

780.11 Ensemble: Opera Scenes GRAD 1-2
Study and performance of repertoire determined by student's specific ensemble. A performance ensemble class devoted to the rehearsing and performing of opera scenes; basic rehearsal and performing techniques for operatic literature. 3 1.5-hr cl. Prereq: Admission by audition and permission of instructor. Prereq: 710 or permission of instructor, and admission by audition. Repeatable to a maximum of 24 cr hrs.

780.12 Ensemble: Opera Performance GRAD 2
Study and performance of repertoire determined by student's specific ensemble. A performance ensemble class devoted to the rehearsing and performing of full-length operas/advanced rehearsal and performance techniques for operatic literature. Repeatable to a maximum of 24 cr hrs.

780.15 Ensemble: Early Music Ensemble GRAD 1-2
Study and performance of repertoire determined by student's specific ensemble. Early Music Ensemble. A performance ensemble class devoted to the rehearsing and performing of early music; being, including contrapuntal techniques, for performance in ensembles. Prereq: 710 or permission of instructor, and admission by audition. Repeatable to a maximum of 24 cr hrs.

780.20 Ensemble: African Performing Ensemble GRAD 1
801.33 Applied Music (Principal): Cello
Advanced applied music study with emphasis on musicianship, pedagogical techniques, and literature: Cello.
Prereq: Placement exam or permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of director of School of Music. Repeatable to a maximum of 24 cr hrs.

801.34 Applied Music (Principal): Double Bass
Advanced applied music study with emphasis on musicianship, pedagogical techniques, and literature: Double Bass.
Prereq: Placement exam or permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of director of School of Music. Repeatable to a maximum of 24 cr hrs.

801.41 Applied Music (Principal): Flute
Advanced applied music study with emphasis on musicianship, pedagogical techniques, and literature: Flute.
Prereq: Placement exam or permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of director of School of Music. Repeatable to a maximum of 24 cr hrs.

801.42 Applied Music (Principal): Oboe
Advanced applied music study with emphasis on musicianship, pedagogical techniques, and literature: Oboe.
Prereq: Placement exam or permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of director of School of Music. Repeatable to a maximum of 24 cr hrs.

801.43 Applied Music (Principal): Clarinet
Advanced applied music study with emphasis on musicianship, pedagogical techniques, and literature: Clarinet.
Prereq: Placement exam or permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of director of School of Music. Repeatable to a maximum of 24 cr hrs.

801.44 Applied Music (Principal): Bass Clarinet
Advanced applied music study with emphasis on musicianship, pedagogical techniques, and literature: Bass Clarinet.
Prereq: Placement exam or permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of director of School of Music. Repeatable to a maximum of 24 cr hrs.

801.45 Applied Music (Principal): Saxophone
Advanced applied music study with emphasis on musicianship, pedagogical techniques, and literature: Saxophone.
Prereq: Placement exam or permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of director of School of Music. Repeatable to a maximum of 24 cr hrs.

801.46 Applied Music (Principal): Bassoon
Advanced applied music study with emphasis on musicianship, pedagogical techniques, and literature: Bassoon.
Prereq: Placement exam or permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of director of School of Music. Repeatable to a maximum of 24 cr hrs.

801.51 Applied Music (Principal): Horn
Advanced applied music study with emphasis on musicianship, pedagogical techniques, and literature: Horn.
Prereq: Placement exam or permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of director of School of Music. Repeatable to a maximum of 24 cr hrs.

801.52 Applied Music (Principal): Trumpet
Advanced applied music study with emphasis on musicianship, pedagogical techniques, and literature: Trumpet.
Prereq: Placement exam or permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of director of School of Music. Repeatable to a maximum of 24 cr hrs.

801.53 Applied Music (Principal): Trombone
Advanced applied music study with emphasis on musicianship, pedagogical techniques, and literature: Trombone.
Prereq: Placement exam or permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of director of School of Music. Repeatable to a maximum of 24 cr hrs.

801.54 Applied Music (Principal): Euphonium
Advanced applied music study with emphasis on musicianship, pedagogical techniques, and literature: Euphonium.
Prereq: Placement exam or permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of director of School of Music. Repeatable to a maximum of 24 cr hrs.

801.55 Applied Music (Principal): Tuba
Advanced applied music study with emphasis on musicianship, pedagogical techniques, and literature: Tuba.
Prereq: Placement exam or permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of director of School of Music. Repeatable to a maximum of 24 cr hrs.

801.71 Applied Music (Principal): Percussion
Advanced applied music study with emphasis on musicianship, pedagogical techniques, and literature: Percussion.
Prereq: Placement exam or permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of director of School of Music. Repeatable to a maximum of 24 cr hrs.

802.11 Applied Music (Major): Piano
A specialized and intense study of literature and techniques of performance: Piano.
Prereq: Placement exam. Repeatable to a maximum of 24 cr hrs.

802.21 Applied Music (Major): Voice
A specialized and intense study of literature and techniques of performance: Voice.
Prereq: Placement exam. Repeatable to a maximum of 24 cr hrs.

802.31 Applied Music (Major): Violin
A specialized and intense study of literature and techniques of performance: Violin.
Prereq: Placement exam. Repeatable to a maximum of 24 cr hrs.

802.41 Applied Music (Major): Flute
A specialized and intense study of literature and techniques of performance: Flute.
Prereq: Placement exam. Repeatable to a maximum of 24 cr hrs.

802.42 Applied Music (Major): Oboe
A specialized and intense study of literature and techniques of performance: Oboe.
Prereq: Placement exam. Repeatable to a maximum of 24 cr hrs.

802.43 Applied Music (Major): Clarinet
A specialized and intense study of literature and techniques of performance: Clarinet.
Prereq: Placement exam. Repeatable to a maximum of 24 cr hrs.

802.44 Applied Music (Major): Bass Clarinet
A specialized and intense study of literature and techniques of performance: Bass Clarinet.
Prereq: Placement exam. Repeatable to a maximum of 24 cr hrs.

802.45 Applied Music (Major): Saxophone
A specialized and intense study of literature and techniques of performance: Saxophone.
Prereq: Placement exam. Repeatable to a maximum of 24 cr hrs.

802.46 Applied Music (Major): Bassoon
A specialized and intense study of literature and techniques of performance: Bassoon.
Prereq: Placement exam. Repeatable to a maximum of 24 cr hrs.

802.51 Applied Music (Major): Horn
A specialized and intense study of literature and techniques of performance: Horn.
Prereq: Placement exam. Repeatable to a maximum of 24 cr hrs.

802.52 Applied Music (Major): Trumpet
A specialized and intense study of literature and techniques of performance: Trumpet.
Prereq: Placement exam. Repeatable to a maximum of 24 cr hrs.

802.53 Applied Music (Major): Trombone
A specialized and intense study of literature and techniques of performance: Trombone.
Prereq: Placement exam. Repeatable to a maximum of 24 cr hrs.

802.54 Applied Music (Major): Euphonium
A specialized and intense study of literature and techniques of performance: Euphonium.
Prereq: Placement exam. Repeatable to a maximum of 24 cr hrs.
Music

802.55 Applied Music (Major): Tuba
A specialized and intense study of literature and techniques of performance: Tuba.
Prereq: Placement exam. Repeatable to a maximum of 24 cr hrs.

802.71 Applied Music (Major): Percussion
A specialized and intense study of literature and techniques of performance: Percussion.
Prereq: Placement exam. Repeatable to a maximum of 24 cr hrs.

803.01 Conducting: Choral
A specialized and intense study of conducting techniques: Choral.
Prereq: Placement exam. Open only to conducting majors in the MM curriculum. Repeatable to a maximum of 12 cr hrs.

803.02 Conducting: Orchestral
A specialized and intense study of conducting techniques: Orchestral.
Prereq: Placement exam. Open only to conducting majors in the MM curriculum. Repeatable to a maximum of 12 cr hrs.

803.03 Conducting: Band
A specialized and intense study of conducting techniques: Band.
Prereq: Placement exam. Open only to conducting majors in the MM curriculum. Repeatable to a maximum of 12 cr hrs.

805 Masters Degree Recital
Intended for the graduate student who is preparing the master recital as a requirement for the Master of Music degree, and the Master of Arts in Music Pedagogy degree.
Au, Wi, Sp Qtr. 3 cl. Prereq: Grad music major. Repeatable to a maximum of 4 cr hrs. This course is graded S/U.

810.11 Music Pedagogy: Practicum in Teaching
Application of theoretical knowledge in piano pedagogy (teaching applied music); supervised teaching assignments.
** Au, Wi, Sp Qtr. 3-9 hrs per week of laboratory teaching. Prereq: 613 and Music grad standing. Repeatable to a maximum of 6 cr hrs.

810.21 Music Pedagogy: Vocal
An analysis of the principles and practices current in the teaching of voice.
** Wi Qtr. 3 cl. Prereq: Music grad standing and minimum of 6 cr hrs of applied study in voice.

810.22 Music Pedagogy: Vocal Practicum
Observation of applied voice instruction, participation in and discussion of voice teaching, development of teaching skills and fluency of communications.
* Sp Qtr. 3 cl. Prereq: 615.

810.30 Music Pedagogy: String Instrument
An analysis of the principles and practices current in the teaching of strings. Gillespie.
* Sp Qtr. 5 cl. Prereq: Music grad standing and minimum of 6 cr hrs of applied study in string instruments.

810.31 Pedagogy for Applied Teaching
Course examines pedagogy and repertoire for teaching beginning and intermediate string instrument lesson in an applied studio.
Au Qtr. Prereq: Music major.

810.32 Pedagogy for Beginning Lower Strings
Course examines pedagogy and instructional materials designed to teach first and second year cello and bass playing skills.
Wi Qtr. Prereq: Music major enrolled in the Masters of Arts String Pedagogy degree program.

810.33 Pedagogy for Beginning Upper Strings
Course examines pedagogy and instructional materials designed to teach first and second year violin and viola playing skills.
Prereq: Music major enrolled in the Masters of Arts String Pedagogy degree program.

810.40 Music Pedagogy: Woodwind Instrument
An analysis of the principles and practices current in the teaching of woodwinds.
* Sp Qtr. 5 cl. Prereq: Music grad standing and minimum of 6 cr hrs of applied study in woodwind instruments.

810.50 Music Pedagogy: Brass Instrument
An analysis of the principles and practices current in the teaching of brass instruments.
* Sp Qtr. 5 cl. Prereq: Music grad standing and minimum of 6 cr hrs of applied study in brass instruments.

810.70 Music Pedagogy: Percussion Instruments
An analysis of principles and practices in the teaching of percussion instruments.
* Au Qtr. 3 cl. Prereq: Music grad standing and a minimum of 6 cr hrs of applied study in percussion instruments, or permission of instructor.

812 Graduate Voice Diction and Repertoire Coaching
Coaching the singer in the authentic sound and production of the Italian, French and German languages.
Au Qtr. 3 cl. Prereq: Grad voice major. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.
<table>
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<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Prerequisites</th>
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| 850         | History of Performance Practices           | GRAD 5  | A study of primary sources pertaining to contemporary attitudes and practices in the performance of music from the Middle Ages to the present.
| 852.01      | Performance Literature: Piano              | GRAD 3  | Concentrated study of representative literature from each style period: Piano. Prereq: 752 and admission to DMA program. Repeatable to a maximum of 9 cr hrs. |
| 852.02      | Performance Literature: Voice              | GRAD 3  | Concentrated study of representative literature from each style period: Voice. Prereq: 752 and admission to DMA program. Prereq: Admission to DMA program. Repeatable to a maximum of 9 cr hrs. |
| 852.03      | Performance Literature: Strings            | GRAD 3  | Concentrated study of representative literature from each style period: Strings. Prereq: 752 and admission to DMA program. Repeatable to a maximum of 9 cr hrs. |
| 852.04      | Performance Literature: Woodwinds         | GRAD 3  | Concentrated study of representative literature from each style period: Woodwinds. Prereq: 752 and admission to DMA program. Repeatable to a maximum of 9 cr hrs. |
| 852.05      | Performance Literature: Brass              | GRAD 3  | Concentrated study of representative literature from each style period: Brass. Prereq: 752 and admission to DMA program. Repeatable to a maximum of 9 cr hrs. |
| 852.07      | Performance Literature: Percussion         | GRAD 3  | Concentrated study of representative literature from each style period: Percussion. Prereq: 752 and admission to DMA program. Repeatable to a maximum of 9 cr hrs. |
| 860.01      | Conducting Repertoire: Band                | GRAD 3  | Concentrated study of instrumentation and repertoire of bands in Western music from the standpoint of the conductor. Open only to DMA conducting majors or PhD students or by permission of instructor. |
| 860.02      | Conducting Repertoire: Choral              | GRAD 3  | Concentrated study of choral literature from the Renaissance to the present. Open only to DMA conducting majors or PhD students or by permission of instructor. |
| 860.03      | Conducting Repertoire: Orchestral          | GRAD 3  | Concentrated study of orchestral repertoire from Monteverdi through the present from the standpoint of the conductor. Open only to DMA conducting majors or PhD students or by permission of instructor. |
| 874         | Seminar: The Development of Music Education| GRAD 3-5| The development of music education from the early Greek society to the present day tracing major trends and the influence of certain persons. Prereq: Written permission of instructor. |
| 875         | Seminar: Psychological Factors in Music Education | GRAD 3-5| A study of the psychological factors, theory, and research in the musical development of children and adolescents with implications for school music education programs. |
| 877         | Seminar: Social Factors in Music Education | GRAD 3-5| A study of the social influences on music education and their relationship to school music programs and practices. Prereq: 752 or 760. |
| 879         | Seminar: Music in Higher Education         | GRAD 3-5| The role of music in higher education historically and in contemporary times, including its philosophical bases, degree programs, and organizations. Prereq: 752 or 760. |
| 885         | Fieldwork in Ethnomusicology               | GRAD 5  | A study of the theory and practice of ethnomusicological fieldwork. Prereq: Written permission of instructor. |
| 886         | Theories and Methods of Ethnomusicology    | GRAD 5  | A study of scholarly approaches and research methods in ethnomusicology. Prereq: Written permission of instructor. |
| 887         | Representations and Analyses of Musical Sound | GRAD 5  | An exploration of the relationship between musical sound and its non-acoustico-temporal representations. Prereq: Written permission of instructor. |
| 893         | Individual Studies                         | GRAD 1-15| Individual research projects not connected with the dissertation. Prereq: Written permission of instructor. |
| 894.01      | Seminar in Music Theory                    | GRAD 3-5| Seminar in Music Theory. Repeatable to a maximum of 15 cr hrs. |
| 894.02      | Seminar in Music Education                 | GRAD 3-5| Seminar in Music Education. Repeatable to a maximum of 15 cr hrs. |
Music

902.71 Applied Music (Major): Percussion
GRAD  2-4
Advanced study of music literature in performance including concert recital presentation: Percussion.
Prereq: Placement exam. Open only to students admitted to DMA program. Repeatable to a maximum of 32 cr hrs.

903.01 Advanced Conducting: Band/Winds
GRAD  4
Study of advanced conducting technique and application to appropriate repertoire: Band/Winds.
Prereq: Acceptance into the DMA conducting program. Repeatable to a maximum of 8 cr hrs.

903.02 Advanced Conducting: Choral
GRAD  4
Study of advanced conducting technique and application to appropriate repertoire: Choral.
Prereq: Acceptance into the DMA conducting program. Repeatable to a maximum of 8 cr hrs.

903.03 Advanced Conducting: Orchestral
GRAD  4
Study of advanced conducting technique and application to appropriate repertoire: Orchestral.
Prereq: Acceptance into the DMA conducting program. Repeatable to a maximum of 8 cr hrs.

905 Doctoral Degree Recital
GRAD  2
Intended for the graduate student who is preparing the doctoral recital as a requirement for the Doctor of Music degree.
Au, Wi, Sp Qtr. Arr. Prereq: Grad music major. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

950.01 Seminar in Musicology
GRAD  5
Seminar in Musicology: Research topic to be announced. 2 1.5-hr cl. Repeatable to a maximum of 45 cr hrs.

950.02 Seminar in Music Theory
GRAD  5
Seminar in Music Theory: Research topic to be announced. 2 1.5-hr cl. Repeatable to a maximum of 45 cr hrs.

970 Masters Project - Plan B
GRAD  2-6
Research and practical investigations of selected topics for purposes of the Plan B Masters Project.
Su, Au, Wi, Sp Qtr. Arr. Prereq: Gradstanding in music. Repeatable to a maximum of 6 cr hrs. Required of students enrolled in Master of Arts - Plan B program.

995 Advanced Research Practicum
GRAD  1-5
Utilization of research processes and creative techniques appropriate to the field of inquiry-analysis, survey, experimentation, historiography, philosophy.
Su, Au, Wi, Sp Qtr. Prereq: 45 grad cr hrs and permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

998 Research in Music: Thesis
GRAD  1-18
Research for thesis purposes only.
Su, Au, Wi, Sp Qtr. Repeatable. This course is graded S/U.

999 Research in Music: Dissertation
GRAD  1-18
Research for dissertation purposes only.
Su, Au, Wi, Sp Qtr. Repeatable. This course is graded S/U.

Naval Science

111 Survey of Naval Science
UGRD  3
An introduction to and survey of disciplines peculiar to naval science including a discussion of naval tasks and missions, regulations, customs, traditions, and organizational relationships.
Au Qtr. 2 1.5-hr cl, 1 2-hr lab. Prereq: Enrollment in NROTC Unit or permission of instructor. Students enrolling in this course are to contact the Naval Science Department (292-6015) to receive information about an orientation program.

121 Naval History
UGRD  3
An analysis of maritime affairs as related to the United States naval forces, from pre-Revolutionary War through World War II.
Wi Qtr. 2 1.5-hr cl, 1 2-hr lab. Prereq: 111 or permission of instructor.

131 Sea Power and Maritime Affairs
UGRD  3
A continuing analysis of sea power and maritime affairs as related to the naval forces of the United States from WW II to present day.
Sp Qtr. 2 1.5-hr cl, 1 2-hr lab. Prereq: 121 or permission of instructor.

211 Navigation I
UGRD  4
A study of navigation and piloting vessels at sea, including the determination of position by dead reckoning, visual bearings, and electronic methods.
Au Qtr. 2 2-hr cl, 1 2-hr lab. Prereq: 131 or Math 148 or permission of instructor.

221 Navigation II
UGRD  4
A study of fleet operations including the study of relative motion of ships at sea, maneuvering board, tacts and naval communications.
Wi Qtr. 2 2-hr cl, 1 2-hr lab. Prereq: 211 or permission of instructor.

231 Naval Leadership and Management
UGRD  2
A seminar study of naval leadership.
Sp Qtr. 2 cl, 1 2-hr lab. Prereq: 221 or permission of instructor.

311 Naval Engineering
UGRD  4
Study of fundamental thermodynamics, conventional and nuclear ship propulsion systems.
Au Qtr. 2 1.5-hr cl, 1 2-hr lab. Prereq: Permission of instructor.

321 Naval Engineering and Weapons
UGRD  3
This course completes naval engineering principles, transitions to applications of naval weapons systems as they relate to the ships of today's Navy.
Wi Qtr. 2 1.5-hr cl, 1 2-hr lab. Prereq: 311 or permission of instructor.

331 Naval Weapons
UGRD  3
A continuation of 321, theoretical presentation of fundamental weapons concepts including electromagnetic principles, feedback controls, and basic ballistics.]
Sp Qtr. 2 1.5-hr cl, 1 2-hr lab. Prereq: 321 or permission of instructor.

351 Evolution of the Art of War, Part I
UGRD  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 Pussian war.
Au Qtr. 2 1.5-hr cl, 1 2-hr lab. Prereq: 131 or permission of instructor.

352 Evolution of the Art of War, Part II
UGRD  3
A continuation of the study of evolution of the art of war from the age of Mahan through the present day.
* Wi Qtr. 2 1.5-hr cl, 1 2-hr lab. Prereq: 351 or permission of instructor.

353 Modern Basic Military Strategy and Tactics
UGRD  1
A survey of modern strategic and tactical principles, and current military developments.
Sp Qtr. 2 1-hr sem. Prereq: Permission of instructor.

411 Naval Leadership and Ethics
UGRD  2
A study of issues related to naval law and the UCMJ.
Au Qtr. 2 1-hr cl, 1 2-hr lab. Prereq: Permission of instructor.

421 Naval Officer Senior Seminar
UGRD  2
A seminar study for preparing future Naval officers for commissioning. Wi Qtr. 2 cl, 1 2-hr lab.

431 Naval Operations and Seamanship
UGRD  3
A study of fleet operations and tactics focusing on case studies of successful operations and mishaps, also covering Coast Guard Rules of the Road.
Sp Qtr. 2 1-hr cl, 1 2-hr lab. Prereq: 421 or permission of instructor.

451 Amphibious Warfare, Part I
UGRD  3
The history of amphibious warfare and its development from the battle of Marathon through the Marshall's campaign.
^ Au Qtr. 2 1.5-hr cl, 1 2-hr lab. Prereq: 131 or permission of instructor.

452 Amphibious Warfare, Part II
UGRD  3
A study of the doctrinal techniques and present concepts of amphibious warfare from the Marianas campaign through present day.
^ Wi Qtr. 2 1.5-hr cl, 1 2-hr lab. Prereq: 451 or permission of instructor.

Near Eastern Languages and Cultures

241 The Culture and Cultures of the Middle East
UGRD  5
Introduction to the culture of the Middle East as lived in its villages, towns, and cities. Not open to students with credit for Anthrop 241. Cross-listed in Anthropology. GEC arts and humanities cultures and ideas and social diversity - international issues (Global) course.

244 Films of the Middle East
UGRD  5
Overview of contemporary films from different Middle Eastern countries; how filmmakers of the region view, present, and construct their countries using particular modes of representation. Prereq: English 110. GEC arts and humanities cultures and ideas and social diversity - international issues (Global) course.

294 Group Studies
UGRD  1-5
Special topics to be announced in the quarter previous to the one in which the course is offered.
Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

311 Language Evolution and Language Change
UGRD  5
A study of how and why languages change and evolve over time, taking into account the historical, historical, ideological and cultural factors involved.
2 2-hr cl. Not open to students with credit for Linguist 301, 311 or 385. Cross-listed in Linguistics. GEC arts and humanities cultures and ideas course.

341 Islam in the United States
UGRD  5
An examination of the main elements of Islamic belief as well as particular characteristics of each major Islamic group in the United States. GEC arts and humanities cultures and ideas course.

344 The Middle East in the Media
UGRD  5
Examination of contemporary Middle Eastern cultures through critical evaluation of the media which inform our understanding of international politics. Prereq: English 110 or 111. GEC arts and humanities cultures and ideas and social diversity - international issues (Global) course.

345 Women in the Muslim Middle East
UGRD  5
Examination of position of women in the contemporary Middle East; impact of regional environment on gender identity; gender bias studies in various Middle Eastern countries. 2 2-hr cl. Prereq: English 110. GEC arts and humanities cultures and ideas and social diversity - international issues (Global) course.
Near Eastern Languages and Cultures

331

644 Culture and Politics in Central Asia UGRD 5
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: Rank 3 minimum or grad standing, or permission of instructor.

645 Contemporary Issues in the Middle East UGRD 5
Intensive examination of contemporary issues in the Middle East by applying an interdisciplinary approach.
Prereq: IntStds 245 or jr standing. Not open to students with credit for IntStds 645. Cross-listed in International Studies.

646 Colonial Cities in Postcolonial Memory: The Politics of Urban Development in the Near East UGRD 5
Introduction to colonial and postcolonial studies through a comparative examination of various cities that developed in the Near East during the late nineteenth century.
Prereq: Permission of instructor.

648 Studies in Orality and Literacy UGRD 5
Examination of major theories of writing and of oral composition and transmission, in juxtaposition to case material deriving from a variety of Middle Eastern cultures.
Prereq: Permission of instructor. Not open to students with credit for CompStd 648. Cross-listed in Comparative Studies.

671 Canon and Communities in the Near East UGRD 5
Investigation of the process by which Near Eastern sacred texts (Bible, Qur'an, and others) became sacred and the interaction between texts and communities holding them sacred.

672 Poetry and Politics in the 20th-Century Mediterranean UGRD 5
Exploration of several poets and poetic traditions around the Mediterranean in relation to modern political struggles: resistance to fascism; dilemmas of imperialism and underdevelopment.
Wi Qtr. Prereq: English 110 or 111, or grad standing. Not open to students with credit for CompStd 672. Cross-listed in Comparative Studies.

675 Intellectuals in the Middle East UGRD 5
Concerns and conditions of intellectuals in the modern Middle East.
2-2 hr cl. Prereq: Permission of instructor.

678 Islamic Law and Society UGRD 5
Examination of the relationship between Islamic law and society; the concept of justice in Islam.
Prereq: Permission of instructor. Not open to students with credit for 694, Sp 2007.

680 Basic Bibliographic and Reference Tools in Near Eastern Languages and Cultures UGRD 5
Basic Bibliographic and Reference Tools in Near Eastern Languages and Cultures.
Prereq: 10 cr hrs in Middle Eastern history or literature or equiv. Not open to students with credit for Arabic 680.

692 Workshop UGRD 6
Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it.
Su Qtr. Prereq: Teaching experience and written permission of workshop director. Repeatable to a maximum of 15 cr hrs.

694 Group Studies UGRD 1-5
Special topics to be announced in the quarter previous to the one in which the course is offered.
Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

697 Study at a Foreign Institution UGRD 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This course is Progress (P) graded. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

792 Interdepartmental Studies in the Humanities UGRD 3-5
Two or more departments present colloquia on subjects of mutual interest; topics to be announced.
Su, Au, Wi, Sp Qtrs. Prereq: Grad standing or permission of instructor(s). Repeatable to a maximum of 15 cr hrs.

998 Research in Near Eastern Languages and Cultures GRAD 1-10
Research for thesis purposes only.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

Neurological Surgery

693 Independent Studies in Neurological Surgery MED 1-12
Independent research in neurological surgery.
Su, Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 40 cr hrs. This course is graded S/U.

825 Biology of the Tumor Microenvironment GRAD 2
Cellular and molecular biology of the microenvironment in solid cancers: Signals and mechanisms that promote tumor initiation and progression.
Au Qtr. 1-2 hr cl. Prereq: Graduate students that have completed their laboratory rotations (second year or higher).
332 Neurological Surgery
999 Research in Neurological Surgery GRAD 1-18
Research for Thesis only. Repeatable. This course is graded S/U.

Neurology
999 Research in Neurology MED 1-15
Research in neurology. Repeatable to a maximum of 99 cr hrs.

Neuroscience Department
300 Introduction to Neuroscience UGRD 4
Introductory course covering organization and function of the nervous system at a level understandable to science and non-science majors.
Sp Qtr. 3 hr cl. Prereq: Biology 114, or Biology 116H or equiv, or permission of instructor.

305 Structure and Function of the Nervous System UGRD 3
The course will discuss the basic principles of the anatomical and neurophysiological organization of the nervous system.
Au Qtr. Prereq: Permission from Instructor.

644 Hormones and Behavior UGRD 3
Exploration of the interactions among hormones, brain, and behavior through an integrative approach.
Prereq: Psych 313 or grad standing or permission of instructor.

693 Individual Studies in Neuroscience MED 2-18
Designed to enable the student to pursue a minor investigation in the field of neuroscience department.
Su, Au, Wi, Sp Qtrs. 1 month, offered all months. Prereq: Permission of instructor. Repeatable 24 hrs for professional credit. This course is graded S/U.

694 Group Studies in Neuroscience GRAD 1-15
Selected topics in Neuroscience.
Prereq: permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

702 Introduction to Topics in Cell Biophysics GRAD 3
* This is a team taught introductory course for the first year students of the Biophysics Graduate Program.
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. Cross-listed in Biophysics.

705 Neurobiology of Disease GRAD 3
Neurobiology of Disease will explore the basis of major diseases affecting the nervous system.
Su Qtr. 3 hr cl. Prereq: Permission of instructor. Not open to students with credit for Pharmacol 705. Cross-listed in Pharmacology.

723 Cellular and Molecular Neurobiology GRAD 5
Introduction to cellular components of nervous system, cell and molecular biology of nervous tissue, membrane properties and function in neural cells, brief overview of nervous system development.
Au Qtr. 2-2 hr lectures. Prereq: Permission of instructor. Not open to students with credit for Neurosci 723. Cross-listed in Neuroscience Graduate Studies Program.

724 Neurophysiology GRAD 3
Interdisciplinary approach to the physiology and neurobiology of the nervous system.
Prereq: 2-4 cl. Prereq: Permission of instructor. Not open to students with credit for Neurosci 724 or Dent 724. Cross-listed in Neuroscience Graduate Studies Program and Dentistry.

725 Structure and Function of the Nervous System GRAD 6
Interdisciplinary approach to the anatomy, neurobiology, physiology, and biochemistry of the nervous system.
Wi Qtr. 2-4 cl. Prereq: Permission of instructor. Not open to students with credit for Neurosci 725 or Dent 725. Cross-listed in Neuroscience Graduate Studies Program and Dentistry.

790 Developmental Neurobiology GRAD 3
Interdisciplinary approach to the development of neural cells and the formation and maturation of vertebrate and invertebrate nervous systems.
* Sp Qtr. 2.5-5 hr cl. Prereq: Neurosci 723, 724 and 725, or permission of instructor. Cross-listed in Neuroscience Graduate Studies Program.

797 Seminar Topics in Neuroscience GRAD 1
Selected topics in current neuroscience department research.
Su, Au, Wi, Sp Qtrs. 1 hr cl. Prereq: Grad standing and permission of instructor. Not open to students with credit for Neurosci 797. Repeatable to a maximum of 24 cr hrs. Cross-listed in Neuroscience. This course is graded S/U.

800 Molecular Neurobiology GRAD 3
Survey of recent advances in the understanding of the structure and function of molecules known to be of key importance in the nervous system.
* Sp Qtr. 3 1-hr cl. Prereq: Permission of instructor. Not open to students with credit for Neurosci 800. Cross-listed in Neuroscience Graduate Studies Program.

Neuroscience Graduate Studies Program
723 Cellular and Molecular Neurobiology GRAD 5
Introduction to cellular components of nervous system, cell and molecular biology of nervous tissue, membrane properties and function in neural cells, brief overview of nervous system development.
Au Qtr. 3 2-hr lectures. Prereq: Permission of instructor. Not open to students with credit for NeuroSci 723. Cross-listed in Neuroscience Department.

724 Neurophysiology GRAD 3
Interdisciplinary approach to the physiology and neurobiology of the nervous system.
Au Qtr. 2-4 cl. Prereq: Permission of instructor. Not open to students with credit for NeuroSci 724 or Dent 724. Cross-listed in Neuroscience Department and Dentistry.

725 Structure and Function of the Nervous System GRAD 6
Interdisciplinary approach to the anatomy, neurobiology, physiology, and biochemistry of the nervous system.
Wi Qtr. 4.1 hr lec, 2.2 hr lab. Prereq: Permission of instructor. Not open to students with credit for Psych 726. Cross-listed in Neuroscience Department and Dentistry.

726 Behavioral Neuroscience GRAD 5
Concepts in behavioral neuroscience (motivation, cognition, development, aging, sensory systems, and homeostasis).
Sp Qtr. 2.5-5 hr cl. Prereq: 725 or permission of instructor. Not open to students with credit for Psych 726. Cross-listed in Psychology.

750 Principles of Neuroimmunology GRAD 3
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).
* Sp Qtr. 2.5-5 hr cl. Prereq: MVIMG 701, NeuroGSP 725 or equiv, or permission of instructor. Not open to students with credit for MVIMG 750. Cross-listed in Molecular Virology, Immunology and Medical Genetics.

790 Developmental Neurobiology GRAD 3
Interdisciplinary approach to the development of neural cells and the formation and maturation of vertebrate and invertebrate nervous systems.
Wi Qtr. 2.5-5 hr cl. Prereq: NeuroSci 723, 724 and 725, or permission of instructor. Not open to students with credit for AnatME 790, NeuroSci 790 or CbnAnat 790. Cross-listed in Anatomy and Medical Education and Neuroscience Department.

797 Seminar Topics in Neuroscience GRAD 1
Selected topics in current neuroscience research.
Su, Au, Wi, Sp Qtrs. 1-2 hr cl. Prereq: Grad standing and permission of instructor. Not open to students with credit for NeuroSci 797. Repeatable to a maximum of 24 cr hrs. Cross-listed in Neuroscience Department. This course is graded S/U.

824 Neuropharmacology GRAD 3
A study of the central nervous system including neurochemistry, neurotransmission, receptors, signal transduction, CNS disorders, treatments and the pharmacology of drugs that act on the CNS.
Sp Qtr. 2 cl arr. Prereq: Pharmacol 600 and IBGP 702.02 or permission of instructor/course director. Not open to students with credit for Pharmacol 824. Cross-listed in Pharmacology.

Nuclear Engineering
294 Group Studies in Nuclear Engineering UGRD 1-5
Special group studies of a selected area of nuclear engineering not provided in other courses.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

505 Introduction to Nuclear Science and Engineering GRAD 3
Discussion of nuclear energy and nuclear radiation; sources, methods of utilization, and projections for future engineering uses.
Au, Sp Qtrs. 2.5-5 hr cl. Prereq: Math through Math 153 and Physics 133, or permission of instructor. Not open to students with credit for MechEng 505. Cross-listed in Mechanical Engineering.

606 Radiological Safety UGRD 3
General principles of radiation, radioactivity, and protection methodology with emphasis on approved operating, handling, and waste disposal procedures, and regulations and biological interactions.
Au Qtr. 2.2 hr cl.

610 Reactor Safety I UGRD 3
Introductory course covering concepts of reactor safety, the history of reactor accidents and methods of safety analysis.
Wi Qtr. Prereq: MechEng 505 or permission of instructor. Available to undergrad minor students.
Nuclear Engineering 333

694 Group Studies in Nuclear Engineering UGRD 1-5
Special group studies of a selected area of nuclear engineering not provided in other courses.
Su, Au, Wi, Sp Qtr. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs.

701 Introduction to Nuclear Power Engineering UGRD 3
A course for advanced undergraduate/graduate students in nuclear engineering focusing on the physics and engineering of nuclear reactors and nuclear power plants.
Sp Qtr. 505 or permission of instructor.

704 Reactor Theory I UGRD 3
Introduction to the concepts of neutron flux, neutron current, fission chain reactions, diffusion theory, criticality of nuclear assemblies and time dependent behavior.
Au Qtr. Prereq: 505 or equiv, Math 205 or 415 or equiv with permission of instructor. Not open to students with credit for 605.

705 Reactor Theory II GRAD 3
An analytical and mathematical treatment of multi-energy, multi-dimension neutron diffusion theory including reactivity, criticality and rigorous deviation of power reactor kinetics.
Wi Qtr. 2 1.5-hr cr. Prereq: 704 or equiv or permission of instructor.

707 Numerical Methods in Particle Diffusion, Heat Transfer, and Radiation Transport UGRD 3
Computer solutions of neutron diffusion, heat conduction, and radiation transport equations based on finite difference methods using marching, iterative, and direct solution schemes.
Wi Qtr. 2 1.5-hr cr. Prereq: 605 or 708, or Math 512 or MechEng 510 and CptrInf 541. Not open to students with credit for MechEng 707. Cross-listed in Mechanical Engineering.

708 Reactor Theory UGRD 4
Methods for the design and analysis of nuclear reactor cores. Covers both time-dependent and steady state analysis.
Wi Qtr. 2 2-hr cr. Prereq: 505 or equiv. Required course.

710 Reactor Safety II UGRD 3
Provides experience with three computer codes that are widely used for safety analysis in the nuclear industry: RELAP5/TRACE, Saphire and Melcor/Macros.
Sp Qtr. Prereq: 610 and 505 or MechEng 505 or permission of instructor.

716 Probabilistic Reliability and Safety Analysis UGRD 3
Modeling techniques for probabilistic reliability and safety analysis of large process systems such as found in nuclear, chemical and mechanical systems.
Sp Qtr. 1 1.5-hr cr. Prereq: Grad standing in NuclrEng or MechEng or permission of instructor. Not open to students with credit for MechEng 716.

720 Reactor Dynamics and Control UGRD 3
Nuclear reactor and nuclear reactor system operation; control system performance requirements and control mechanisms; automatic control systems and their performance with transient and with steady state operation.
Au Qtr. 3 1.5-hr cr. Prereq: 701 or 705.

735 Nuclear Power Plant Operations I UGRD 5
Introduction to power plant systems, regulatory requirements, and integrated plant operations.
Sp Qtr. 2 1.5-hr cr. Prereq: 505 or permission of instructor.

736 Nuclear Power Plants UGRD 3
A study of thermal and mechanical design aspects and economics of nuclear power plants and processes. The thermodynamics of operating nuclear power plants (BWR and PWR) are emphasized.
Wi Qtr. 2 1.5-hr cr. Prereq: 505 and MechEng 501 or 500 with permission of instructor. Not open to students with credit for 636 or MechEng 636 or 736. Cross-listed in Mechanical Engineering.

737 Heat Transfer Applications in Nuclear Reactor UGRD 3
Systems
The heat transfer applications in nuclear reactor systems include but are not limited to: heat transfer in PWR and BWR fuel rods, coolant, and reactor internals.
Sp Qtr. 2 1.5-hr cr. Prereq: 736, or MechEng 736, and MechEng 510 or 500 with permission of instructor. Not open to students with credit for MechEng 637 or 737. Cross listed in Mechanical Engineering.

738 Introduction to Two-phase Flow and Heat Transfer UGRD 3
Introduction to two-phase flow and heat transfer in mechanical and nuclear engineering applications. Students learn analytical tools for system design and performance evaluation.
Au Qtr. 2 1.5-hr cr. Prereq: MechEng 510 or CivEn 521 or equiv or permission of instructor. Not open to students with credit for MechEng 738. Cross-listed in Mechanical Engineering.

742 Nuclear Radiations and Their Measurement UGRD 3
A theoretical and experimental study of nuclear radiation sources, interactions with matter, and detection.
Wi Qtr. 2 1.5-hr cr, 1 3-hr lab. Prereq: 606 and 704 or permission of instructor;

743 Nuclear Radiations and Their Shielding UGRD 3
A theoretical and experimental study of nuclear radiation, interactions with matter, and shielding
Sp Qtr. 2 1.5-hr cr, 1 3-hr lab. Prereq: 742.

744 Nuclear Reactor Laboratory UGRD 3
An experimental study of nuclear reactor operating characteristics and fundamental concepts of reactor design.
Sp Qtr. 1 cl, 1 4-hr lab. Prereq: 701 or 704 or 705, and 742 or permission of instructor.

745 Power Plant Operations II UGRD 3
Provides experience with integrated plant operations at a nuclear power plant simulator.
Sp Qtr. Arr. Prereq: 735 or permission of instructor. Repeatable to a maximum of 6 cr hrs.

750 Nuclear Materials and their Degradation in Radiation Fields UGRD 3
Introduction to nuclear materials; the interaction of materials with radiation; and the changes in materials properties resulting from radiation.
Prereq: Grad standing in MatScEn or NuclEn; or permission of instructor. Not available to students with credit for MatScEn 750. Cross-listed in Materials Science Engineering.

766 Nuclear Engineering Design GRAD 3
Practice in the analysis and design of nuclear systems and the use of nuclear engineering principles.
Au Qtr. 1 cl, 2 2-hr lab, Prereq: 704 or 705, 720, and 742 or permission of instructor.

771 Radioactive Waste Management UGRD 3
Overview of radioactive waste management. Covers waste categories, sources, treatment and disposal methods, minimization, transportation and current research topics.
Au Qtr. Prereq: 505 or 608 or permission of instructor. Not open to students with credit for EnvEng 771 or CivEn 771. Cross-listed in Environmental Engineering.

776 Nuclear Fuel Cycles UGRD 3
A study of the production, utilization, waste disposal, safeguards, and economic aspects of nuclear fuel cycles of importance in nuclear power technology.
Au Qtr. 2 1.5-hr cr. Prereq: 505 and 736 or permission of instructor.

777 Risk and Reliability for Digital Instrumentation and Control Systems GRAD 3
Introduction to the risk and reliability assessment of digital instrumentation and control systems. Prereq: MechEng 570 or equivalent or permission of instructor.

793 Individual Studies in Nuclear Engineering UGRD 1-10
Awards the qualified student the opportunity for independent reading, study, or laboratory work in a specialized field of interest.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 18 or hrs.

794 Group Studies in Nuclear Engineering UGRD 1-5
Special group studies of a selected area of Nuclear Engineering not provided in other courses.
Su, Wi, Au, Sp Qtr. Prereq: Written permission of instructor. Repeatable to a maximum of 20 or hrs. May be taught in distance learning format. This course is graded S/U.

845 Advanced Laboratory Studies GRAD 1-6
Experimental treatment of advanced nuclear engineering concepts.
Su, Au, Wi, Sp Qtrs. Prereq: 743 and 744, and permission of instructor.

865 Neutron Slowdown and Thermalization GRAD 3
Neutron slowing down in infinite and finite media, thermal spectrum calculations, and cell calculations in heterogeneous core lattices.
Sp Qtr. 1 1-hr cr. Prereq: 704 or 705, and Math 512 or equiv with permission of instructor.

880.01 Advanced Topics: Reactor Kinetics, Dynamics and Controls GRAD 1-3
An advanced course of study for special topics in nuclear engineering; topics will be announced each quarter: Reactor Kinetics, Dynamics and Controls.
Au Qtr. Prereq: Permission of instructor. Offered as demand warranted. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

880.02 Advanced Topics: Reactor Design GRAD 1-3
An advanced course of study for special topics in nuclear engineering; topics will be announced each quarter: Reactor Design.
Au Qtr. Prereq: Permission of instructor. Offered as demand warrants. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

880.03 Advanced Topics: Fuel Management GRAD 1-3
An advanced course of study for special topics in nuclear engineering; topics will be announced each quarter: Fuel Management.
Au Qtr. Prereq: Permission of instructor. Offered as demand warrants. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

880.04 Advanced Topics: Radiation Effects GRAD 1-3
An advanced course of study for special topics in nuclear engineering; topics will be announced each quarter: Radiation Effects.
Au Qtr. Prereq: Permission of instructor. Offered as demand warrants. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

880.05 Advanced Topics: Radiation Fields GRAD 1-3
An advanced course of study for special topics in nuclear engineering; topics will be announced each quarter: Radiation Fields.
Au Qtr. Prereq: Permission of instructor. Offered as demand warrants. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

880.08 Advanced Topics: Nuclear Instrumentation GRAD 1-3
An advanced course of study for special topics in nuclear engineering; topics will be announced each quarter: Nuclear Instrumentation.
Au Qtr. Prereq: Permission of instructor. Offered as demand warrants. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

880.09 Advanced Topics: Special Studies in Radioactive Waste Management GRAD 1-3
An advanced course of study for special topics in nuclear engineering; topics will be announced each quarter: Special Studies in Radioactive Waste Management.
Au Qtr. Prereq: Permission of instructor. Offered as demand warrants. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.
### Nursing

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>Nursing Survey</td>
<td>1</td>
<td>Introduction to the University Community, the College of Nursing and the profession of nursing. Emphasis on strategies for success, resources and procedures. See Arts and Sciences catalog for prerequisites. This course is graded S/U. Course fee includes a $5 Material fee.</td>
</tr>
<tr>
<td>101</td>
<td>Introduction to the Profession of Nursing</td>
<td>2</td>
<td>An introduction to the profession of nursing; exposure to personal and professional boundaries; analysis of trends in nursing and health care.</td>
</tr>
<tr>
<td>293</td>
<td>Individual Studies in Nursing</td>
<td>1-8</td>
<td>Individual investigation of selected areas in introductory nursing studies.</td>
</tr>
<tr>
<td>294</td>
<td>Group Studies in Nursing</td>
<td>2-6</td>
<td>Selected topics in nursing.</td>
</tr>
<tr>
<td>301.01</td>
<td>Foundational Nursing Concepts for Health</td>
<td>6</td>
<td>Introduction to the profession, nursing process, and natural history model for disease as a framework for disease prevention, health promotion and restoration across the life span. Requires materials and/or equipment for which an additional fee has been assessed. Course fees listed at <a href="http://register.osu.edu">http://register.osu.edu</a>.</td>
</tr>
<tr>
<td>301.02</td>
<td>Foundational Nursing Concepts for Health</td>
<td>6</td>
<td>Promotion and Restoration across Lifespan Cultures and Sett</td>
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<tr>
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<td>6</td>
<td>Promotion and Restoration across Lifespan Cultures and Sett</td>
</tr>
<tr>
<td>302</td>
<td>Transition into Baccalaureate Nursing</td>
<td>4</td>
<td>Provides the framework for transition for registered nurses pursuing a baccalaureate degree in nursing. Su (1st term) Qtr. Prereq: Admission to nursing major, Registered Nurse status. Required in the Bachelor of Science in Nursing degree program for Registered Nurse students. Distance learning course (web taught).</td>
</tr>
<tr>
<td>320.01H</td>
<td>Honors Seminar I</td>
<td>1</td>
<td>Discussion of topics relevant to academic, professional, and personal development in nursing. First in a series of threehonors Seminars.</td>
</tr>
<tr>
<td>320.02H</td>
<td>Honors Seminar II</td>
<td>1</td>
<td>Discussion of topics relevant to academic, professional, and personal development in nursing. Second in a series of three honors seminars. Wk Qtr: Prereq: Soph standing in nursing major, enrolled in Honors Program.</td>
</tr>
<tr>
<td>337</td>
<td>A Nursing Perspective: Life Span Development</td>
<td>3</td>
<td>Growth and development of individuals within the context of family from the beginning to death with an emphasis on assessment and interventions used by nurses.</td>
</tr>
<tr>
<td>360.01</td>
<td>Introduction to Scientific Inquiry in Nursing</td>
<td>1</td>
<td>Practice through Information Literacy</td>
</tr>
<tr>
<td>360.02</td>
<td>Introduction to Scientific Inquiry in Nursing</td>
<td>1</td>
<td>Practice through Research Methods</td>
</tr>
<tr>
<td>360.03</td>
<td>Introduction to Scientific Inquiry in Nursing</td>
<td>1</td>
<td>Practice through Evidence-Based Practice</td>
</tr>
<tr>
<td>367</td>
<td>Healthcare Issues in the United States</td>
<td>5</td>
<td>Designed to enhance students' critical and analytical reading and writing skills through a study of current health issues in the United States.</td>
</tr>
<tr>
<td>390</td>
<td>Introduction to Research for Evidence-Based</td>
<td>3</td>
<td>Practice for Evidence-Based Practice</td>
</tr>
<tr>
<td>390.01</td>
<td>Integrated Sciences for Nursing Practice I</td>
<td>5</td>
<td>Normal and cellular and systemic homeostatic function and local and systemic responses to cellular structure and function.</td>
</tr>
<tr>
<td>390.02</td>
<td>Integrated Sciences for Nursing Practice II</td>
<td>5</td>
<td>Normal and abnormal renal, musculoskeletal, cardiac and respiratory physiology and principles related to pharmacological management of major diseases of each of these body systems.</td>
</tr>
<tr>
<td>390.03</td>
<td>Integrated Sciences for Nursing Practice III</td>
<td>5</td>
<td>Normal and abnormal neurological, endocrine, gastrointestinal, hepatic, and reproductive physiology and principles related to pharmacological management of major diseases of each of these body systems.</td>
</tr>
<tr>
<td>402</td>
<td>Nursing Care of Adults</td>
<td>8</td>
<td>Nursing knowledge essential to caring for adults; emphasis on health promotion, risk assessment, disease prevention and management of common acute and chronic health problems.</td>
</tr>
<tr>
<td>403</td>
<td>Nursing Care of Older Adults</td>
<td>8</td>
<td>Nursing knowledge essential to caring for older adults; emphasis on health promotion, risk assessment, disease prevention and common acute and chronic health problems.</td>
</tr>
<tr>
<td>404</td>
<td>Nursing Care of Childbearing Families</td>
<td>5</td>
<td>Nursing knowledge essential to caring for childbearing families; emphasis on health promotion, risk assessment, disease prevention and complications from pregnancy, acute and chronic health problems.</td>
</tr>
</tbody>
</table>
405 Nursing Care of Children and their Families UGRD 5
Nursing knowledge essential to caring for children and their families; emphasis on health promotion, risk assessment, disease prevention and common acute and chronic health problems.
Au, Wi, Sp Qtr. 3 cl, 6 hrs clinical. Prereq: Jr standing in Nursing, 301.03, 385.03, HumnNtr 310, Microbl 509, and Nursing 337 or Psych 340 or HDF5 364 or permission of instructor. Can be taken with Nursing 404. Cannot be taken with Nursing 402 or 403.

420.01H Honors Seminar IV UGRD 1
Discussion of topics relevant to the senior thesis proposal. First in a series of three junior honors seminars.
Au Qtr. 4 2.5-hr cl/qtr. Prereq: Jr. standing in nursing, enrolled in Honors Program, 320.03H.

420.02H Honors Seminar V UGRD 1
Discussion of topics relevant to the senior thesis proposal development. Second in a series of three junior honors seminars.
Wi Qtr. 4 2.5-hr cl/qtr. Prereq: 420.01H.

420.03H Honors Seminar VI UGRD 1
Discussion of topics relevant to the senior thesis proposal development. Third in a series of three junior honors seminars.
Sp Qtr. 4 2.5-hr cl/qtr. Prereq: 420.02H.

440 Cultural Competence in Health Care UGRD 3
Development of health care concepts and techniques used by nurses and other health care professionals in providing culturally competent care of individuals, families and communities.
Au, Wi, Sp Qtrs. 3 cl. Prereq: Enrollment in nursing major or permission of instructor. Summer quarter enrollment is limited to RN to BSN students only.

450 Interpersonal Relationships: Personal and Professional Boundaries UGRD 1-2
In-depth study of interpersonal relationship boundary issues, including the interrelationship of personal relationship issues and professional relationship issues.
Wi Qtr. 2 cl. This course is graded S/U.

493 Individual Clinical Studies in Nursing UGRD 0-5
Clinical skills development for individuals which takes place in the College of Nursing's Teaching Learning Centers.
Su, Au, Wi, Sp Qtrs. Prereq: Enrollment in the College of Nursing; permission of instructor. Repeatable to a maximum of 5 cr hrs. Credit does not count toward BSN degree. This course is graded S/U.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

501 High Acuity Nursing UGRD 8
Nursing knowledge essential to management of high acuity patients and their families in a variety of health care settings.
Au, Wi Qtrs. 4 cl, 16 hrs clinical. Prereq: Sr standing in nursing major, 390, 402, 403, 404, 405 and 440 or permission of instructor. Cannot be taken with Nursing 503, 511 or 512.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

503 Leadership in Clinical Nursing Practice UGRD 2-8
Study of leadership principles and refinement of clinical expertise in a focused area of nursing practice.
Au, Sp Qtrs. 2 cl and additional 14 hrs clinical for 8 week offering. Prereq: Senior standing in nursing major. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

506 Evidence Based Nursing: Transforming Clinical Practice UGRD 5
Study of concepts, application and implementation of evidence based nursing for transforming quality health care.
Au Qtr. Prereq: 302D, 390D, 440D, and concurrent enrollment in 507D, or permission of instructor.

507 Health Care Informatics UGRD 3
Examines informatics in health care emphasizing clinical information systems and the use of the information technology applications to support health care practitioners.
Au Qtr. Prereq: 302D, 390D, 440D, concurrent with 506D, or permission of instructor.

508 Concepts in High Acuity Nursing UGRD 8
Study of nursing knowledge for Registered Nurse students essential to management of high acuity patients and their families in a variety of health care settings.
Au Qtr. 4 hr cl, 4 hrs clinical. Prereq: 302, 380, and 440 or permission of instructor. Open only to students in the RN to BSN program. Distance Learning course (Web taught).

509 Concepts in Community Care of Vulnerable Populations UGRD 6
Application of public health and community health theory and principles to the nursing care of vulnerable populations.
Wi Qtr. 4 hrs cl, 2 hrs clinical. Prereq: Nursing 506 and Nursing 507 and student in RN to BSN program in Nursing or permission of instructor. Distance learning course (Web taught).
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

510 Concepts in Leadership and Management UGRD 8
The study of leadership and management principles as they apply to nursing practice and the health care environment.
Sp Qtr. 4 hrs cl, 4 hrs clinical. Prereq: 506 and 507, or 508, or permission of instructor. Distance Learning course (Web taught).
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://www.ureg.ohio-state.edu.

511 Community Care of Vulnerable Populations UGRD 6
Application of public health and community health theory and principles to the nursing care of vulnerable populations.
Au, Wi, Sp Qtrs. 4 cl, 1 hr clinical. Prereq: Sr standing in nursing major, 390 or 541H, 401, 402, 403 and 440 or permission of instructor. Cannot be taken with Nursing 501 or 503.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

512 Psychiatric Mental-Health Nursing UGRD 6
Nursing knowledge applied to the promotion of mental health and to the recovery of individuals with psychiatric diagnoses.
Au, Wi, Sp Qtrs. 4 cl, 1 hr clinical. Prereq: Sr standing in nursing major, 401, 402, 403 and 440 or permission of instructor. Cannot be taken with Nursing 501 or 503.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

520.01H Honors Seminar VII UGRD 1
Discussion of topics relevant to the senior thesis process. First In a series of three senior level honors seminars.
Au Qtr. 3.5-hr cl qtr. Prereq: 420.03H.

520.02H Honors Seminar VIII UGRD 1
Discussion of topics relevant to the senior thesis process. Second in a series of three senior level honors seminars.
Wi Qtr. 3.5-hr cl qtr. Prereq: 520.01H.

520.03H Honors Seminar IX UGRD 1
Discussion of topics relevant to the senior thesis process. Third in a series of three senior level honors seminars.
Sp Qtr. 3.5-hr cl qtr. Prereq: 520.02H.

525 Introduction to ECG Monitoring UGRD 2
Designed to introduce nursing students to basic ECG interpretation. Primary focus is electrical and mechanical conduction correlated to common causes and nursing interventions.
Au, Sp Qtrs. 2 hr cl. Prereq: Jr or sr standing in nursing, professional nurse, or permission of instructor.

541H Introduction to Nursing Research UGRD 3-5
Introduction to nursing research methods intended to foster an understanding of and appropriation for nursing research by direct involvement in the research process.
Wi Qtr. 2 cl. Prereq: 380.02 and 320.02H and/or or honor standing in the College of Nursing or permission of instructor. Not open to students with credit for 390.

580H Ethical Conflicts in Health Care Research, Policy, and Practice UGRD 5
An interdisciplinary approach to an analysis of central moral dilemmas in health care research, policy, and practice.
Su, 2 hr cl. Prereq: Jr or Sr in college of nursing or permission of instructor. Not open to students with credit for Philos 580H. Cross-listed in Philosophy.

593 Individual Studies UGRD 1-8
Study of selected problems in nursing.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 16 hrs. This course is graded S/U.

601 Scientific Thought in Nursing GRAD 3
Study of the nature of scientific thought, critical thinking and moral reasoning in the discipline of nursing.
Au, Sp Qtrs. 3 cl. Prereq: Admission to master's program in nursing or permission of instructor.

602 Theoretical Foundations for Advanced Practice GRAD 3
Non-credit course for Advanced Practice nursing students to introduce a theoretical foundation for practice. Course Fees listed at http://registrar.osu.edu.

603 Nursing within the American Health Care System GRAD 3
Application of American health care delivery system and policy making process with an emphasis on social, political, and economic factors affecting delivery of nursing services.
Su, Au Qtrs. 3 cl. Prereq: Admission to master's program in nursing or permission of instructor.

Nursing 335
604 Introductory Pharmacology for Healthcare Professionals
An overview of pharmacokinetics principles, drug mechanism of action, survey of medications used, and reviews of nursing implications for common classes of medications.
Su Qtr. 3 cl. Prereq: Jr or sr rank, or CED or Grad college, or permission of instructor. Not open to College of Nursing students, students with credit for 706 or to current RNs. Course meets the pharmacology prerequisite for Graduate Entry applicants and is not for prescriptive privileges.

605 Human Health Assessment
Development of basic human health assessment skills with emphasis on health history taking, physical examination techniques, and recording concise summaries.
2 cl, 3 lab. Prereq: Upper division health professions student, graduate health professional or permission of instructor.

606 Pharmacology for Clinical Nurse Leaders
Pharmacology related to acute ill, hospitalized clients. Emphasis on pharmacotherapeutics for CNS practice in a microsystem (client group within a clinical unit).
Su Qtr. 3 cl. Prereq: Undergraduate pharmacology course or equiv and 703.

607 Palliative and End of Life Care
Explores the needs of individuals and families as they face life's end and provide a foundation for palliative and hospice care.
Sp Qtr. 3 cl. Prereq: Sr standing in CON, grad student in Nursing, or related major by permission. This course is graded S/U.

608 Clinical Management for the Healthcare Provider
Theories, concepts, and issues needed to provide leadership, management, and oversight for strategic, operational, clinical, and administrative aspects for primary healthcare settings.
Wi Qtr. Prereq: Graduate nursing student, graduate healthcare professional, or permission from instructor.

609 Interdisciplinary Healthcare in the Global Community
Develop strategies for culturally competent interdisciplinary healthcare in selected world communities.
Au, Wi. Sp Qtrs. Prereq: 440 or 640 or permission of instructor.

611 Professional Nursing Practice
Introduction to professional nursing practice, emphasis on knowledge and skills required for disease prevention, health promotion and restoration across the life span.
Au Qtr. 5 cl, 14 hrs lab and clinical. Prereq: Admission to the Graduate Entry Program in Nursing.

614 Cancer in Women
An examination of the most common gynecologic and other cancers in women with discussion of issues related to genomics and personalized health care.
Sp Qtr. Prereq: Enrollment as a student in the graduate nursing program. Senior undergraduate nursing students or students from other disciplines may request permission to take the course.

616 Clinical Decision Making in Nursing: Pharmacotherapeutics
Case study driven course provides the student with an in-depth understanding of the relationship between evidence-based practice and the pharmaceutical management of patients.
Wi Qtr. 5 cl and 16 hrs clinical. Prereq: Student in Nursing Graduate Entry Program. Nursing 611, 703, or permission of instructor.

622 Nursing Care of Adults and Older Adults
Nursing knowledge essential to caring for adults and older adults, emphasis on health promotion, risk assessment, disease prevention and management of common acute and chronic health problems.
Wi Qtr. 3 cl and 16 hrs clinical. Prereq: Student in Nursing Graduate Entry Program. Nursing 611, 703, or permission of instructor.

623 Nursing Care of the Childbearing Family
Nursing theory and clinical care of childbearing and childrearing families with emphasis on health promotion, risk assessment, disease prevention and common acute/chronic health problems.
Sp Qtr. 3 credits class, 2 credits clinical. Prereq: Student in Nursing Graduate Entry Program. Nursing 622, 704 or permission of instructor.

625 Nursing Care of Children and their Families
Nursing theory and clinical care of children and their families with emphasis on health promotion, risk assessment, disease prevention and common acute/chronic health problems.
Sp Qtr. 3 credits lecture/class, 2 credits clinical. Prereq: Student in Nursing Graduate Entry Program. Nursing 622, 704 and 637 or permission of instructor.

631 Nursing Care of High Acuity Patients
Nursing knowledge essential to management of high acuity patients and their families in a variety of health care settings.
Su Qtr. 4 cl, 16 hrs clinical. Prereq: Student in Nursing Graduate Entry Program. Nursing 623, 625 or permission of instructor.

633 Transition to Advanced Practice Nursing
Analysis of complex issues in clinical decision-making, ethical dilemmas, and inter-professional dynamics as applied to contemporary health care and the transition into advanced practice nursing.
Wi Qtr. 3 cl. Prereq: 634 and 635 or permission of instructor. Required course in the graduate entry program in nursing.

634 Community Care of Vulnerable Populations
Application of public health and community health theory and principles to the nursing care of vulnerable populations.
Au Qtr. 3 cl, 2 sem/lab, 8 clinical. Prereq: Student in Nursing Graduate Entry Program. Nursing 631 or permission of instructor. The course has been approved by the University Service Learning Outreach and Engagement Office for service learning designation.

635 Psychiatric Mental Health Nursing
Nursing knowledge applied to the promotion of mental health and to the recovery of individuals with psychiatric diagnoses.
Au Qtr. 3 cl, 2 sem/lab, 8 clinical. Prereq: Student in Nursing Graduate Entry Program. Nursing 631 or permission of instructor.

667 A Nursing Perspective: Life Span Development of Individuals within a Family Context
Individual growth and development within a family context from beginning to death, emphasis on nursing assessment and interventions with various theoretical perspectives integrated throughout course.
Wi Qtr. 3 cl. Prereq: Admission to the Graduate Entry Program in Nursing or permission of instructor.

662 Nursing Care of the Adult
Nursing care of the adult

663 Transition to Advanced Practice Nursing
Analysis of complex issues in clinical decision-making, ethical dilemmas, and inter-professional dynamics as applied to contemporary health care and the transition into advanced practice nursing.
Wi Qtr. 3 cl. Prereq: 634, 635 and 633.01 (precon or concur) or permission of instructor. Repeatable to a maximum of 9 cr hrs. Required course in the graduate entry program in the Master of Science program in the College of Nursing. This course is graded S/U.

665 Oncology Nursing
Use of nursing theory and nursing process to study sexual health and aberrations in sexual health across the life span.
3 cl. Prereq: Sr or grad standing in nursing major, RN, or permission of instructor.

680 Community Care of Vulnerable Populations
Application of public health and community health theory and principles to the nursing care of vulnerable populations.
Au Qtr. 3 cl, 2 sem/lab, 8 clinical. Prereq: Student in Nursing Graduate Entry Program. Nursing 631 or permission of instructor. The course has been approved by the University Service Learning Outreach and Engagement Office for service learning designation.

692 Nursing Process in the Operating Room
Study of nursing process with clients in the pre-operative, intra-operative, and post-operative phase; emphasis on scrub nurse and circulating nurse roles.
Su Qtr. 2 cl and 16 hrs clinical. Prereq: Admission to the Graduate Entry Program in Nursing or permission of instructor.

693 Nursing Assessment of Early Parent-Child Interaction: Theory and Measurement
Examination of theory and research relevant to nursing assessment of early parent-child interaction and its application to nursing interventions to improve child health outcomes.
Su Qtr. 2 cl, 2 hrs lab. Prereq: Sr or grad standing in nursing major or permission of instructor.

694 Human Sexuality and Nursing Practice
Use of nursing theory and nursing process to study sexual health and aberrations in sexual health across the life span.
3 cl. Prereq: Sr or grad standing in nursing major, RN, or permission of instructor.

695 Oncology Nursing
Basic and intermediate level information for nursing care of people with cancer including prevention, detection, and treatment in acute, ambulatory or home care settings.
Au, Wi. Sp Qtrs. 2 cl. Prereq: Sr undergrad student in nursing major or RN student or permission of instructor.

697 Study at a Foreign Institution
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs.

698 Group Studies in Nursing
Group studies of special problems in nursing; topics vary for quarters.
Su, Au. Wi, Sp Qtrs. Prereq: 4th yr nursing major or nursing grad student. Repeatable to a maximum of 15 cr hrs.

699 Group Studies in Nursing
Group studies of special problems in nursing; topics vary for quarters.
Su, Au. Wi, Sp Qtrs. Prereq: 4th yr nursing major or nursing grad student. Repeatable to a maximum of 15 cr hrs.
Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation. Interprofessionally explores issues in the identification and treatment of chemical dependency within the family context. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs. Limited to students in allied medical professions, education, law, nursing, medicine, social work, and theology (Columbus seminaries).

700.05 Interprofessional Education: Interprofessional UGRD 3 Seminar in Policy Analysis Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation. Interprofessionally explores issues in the identification and treatment of chemical dependency within the family context. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs. Limited to students in allied medical professions, education, law, nursing, medicine, social work, and theology (Columbus seminaries).

700.06 Interprofessional Education: Care of Chemically UGRD 3 Dependent Families Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation. Interprofessionally explores issues in the identification, treatment, and prevention of child abuse and neglect. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs. Limited to students in allied medical professions, education, law, nursing, medicine, social work, and theology (Columbus seminaries).

700.07 Interprofessional Education: Interprofessional UGRD 3 Approaches to Child Abuse and Neglect Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation. Interprofessionally explores issues in the identification, treatment, and prevention of child abuse and neglect. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs. Limited to students in allied medical professions, education, law, nursing, medicine, social work, and theology (Columbus seminaries).

702 Research for Evidence Based Clinical Practice GRAD 4 Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation. Interprofessionally explores issues in the identification, treatment, and prevention of child abuse and neglect. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs. Limited to students in allied medical professions, education, law, nursing, medicine, social work, and theology (Columbus seminaries).

703 Pathophysiology of Altered Health States I GRAD 5 Analysis of theories and research regarding alterations of health states across the life span, with an emphasis on pathophysiological processes. Prereq: Admission to master's program in nursing or permission of instructor.

704 Pathophysiology of Altered Health States II GRAD 5 Analysis of theories and research regarding alterations of health states across the life span, with an emphasis on pathophysiological processes. Prereq: Admission to master's program in nursing or permission of instructor.

705 Advanced Health Assessment GRAD 5-6 Development of advanced health assessment skills. Emphasis on the acquisition of normal and abnormal assessment data relevant to clinical reasoning in advanced nursing practice. Prereq: 703 or permission of instructor.

706 Pharmacology in Advanced Nursing Practice GRAD 5 Covers pharmacokinetic principles of drugs. Use of drugs and therapeutic devices by advanced practice nurses in health and illness. Also, relevant laws regarding prescriptive authority. Prereq: 703 or permission of instructor. This course meets the Ohio Administrative Code requirements for prescriptive privileges.

707 Reimbursement and Cost Methods for Advanced Practice Nurses GRAD 3 Examination of reimbursement methods for health care services and the concepts of cost analysis necessary for program development/monitoring and management of an independent nursing practice. Prereq: 703 or permission of instructor. Not open to students with credit in 710 in any other program.

708 Advanced Newborn/Infant Pharmacology GRAD 5 Pharmacotherapy of high-risk neonates and infants with applications to newborn/infant physiology, and special considerations of drug therapy and advanced nursing management. Prereq: 703 or permission of instructor. Not open to students with credit in 708 in any other program.

709 Developmental Care of the High-Risk Neonate and Family Examination of concepts and research that impact the developmental trajectory of the high-risk neonate and family. Prereq: 703.
718 Instructional Strategies in Clinical Teaching UGRD 3 Preparation of health professionals to assume the role of clinical educator with focus on best pedagogical practices in the classroom. Clinical and virtual learning environments. Su (1st term) Qtr. Prereq: 302 or grad standing or permission of instructor. Computer assisted course.

719 Early Intervention Interdisciplinary Team Dynamics GRAD 3 Interdisciplinary team-taught course with a focus on early intervention/early childhood education services for children birth to three and their families.
Au Qtr. 2.5-hr cl. Prereq: Permission of instructor. Not open to students with credit for AllMed 719, EduPAES 719, HDFS 719, or SpHrng 719. Crosslisted in Education: Physical Activity and Educational Services, Human Development and Family Science, and Speech and Hearing Science.

721 Theories, Concepts and Issues in Advanced Family Nursing GRAD 3 Theories, concepts, and issues from nursing and related sciences relevant to the development and care of women, children and families in various states of health and illness. Su, Au Qtrs. Prereq: Grad standing.

722 Advanced Reproductive Dynamics GRAD 4 Analysis and synthesis of principles of reproductive physiology, genetics and fetal development, menarche, pregnancy, parturition, puerperium and menopause related to advanced nursing practice in women's health care.
Wi Qtr. 4 cl/sem. Prereq: 703.

723 Child and Adolescent Assessment for the School Nurse GRAD 3 Theory, knowledge and skills in health and physical assessment of children and adolescents for nursing practice in school settings.
Su Qtr. 2 cl, 3-hr lab. Prereq: Grad standing.

Au Qtr. Seminar and independent learning. Prereq: Admission to the master's program in nursing and the nurse-midwifery area of study, or permission of instructor.

727 Developmental Physiology, Pathophysiology and Pharmacology of High-Risk Neonate I GRAD 6 Biological basis of case management of the high-risk neonate incorporating analysis and synthesis of principles of embryology, developmental physiology, pathophysiology, and pharmacology.
Wi Qtr. 6 cl. Prereq: Grad standing in Nursing.

728 Developmental Physiology, Pathophysiology and Pharmacology of High-Risk Neonate II GRAD 6 Biological basis of case management of the high-risk neonate incorporating analysis and synthesis of principles of embryology, developmental physiology, pathophysiology, and pharmacology. Continuation of 727.
Sp Qtr. 6 cl. Prereq: 727 or permission of instructor.

729 Advanced Health Assessment of the Neonate GRAD 4 Development of advanced health assessment skills to comprehensively assess full-term and preterm neonatal clients.
Sp Qtr. 3 cl, 4 lab. Prereq: Knowledge of health assessment skills, 727 and concurrent enrollment in 728.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

731 Instructional Strategies in Human Patient Simulation GRAD 3 Addresses the education theory, instructional design, technical support and evaluation knowledge associated with the use of human patient simulation in nursing education.
Prereq: Enrollment in graduate nursing program or permission of instructor.

733 Introduction to Clinical Nurse Leader Practice GRAD 10 This course is designed to introduce the graduate student to the role of the Clinical Nurse Leader through relevant classroom content and clinical experiences.
Sp Qtr. 4 cl, 6 clinical (24 hrs/week). Prereq: RN license or 633.01 and 633.02.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

735 Comprehensive Health Assessment GRAD 3 Comprehensive health assessment of acutely and chronically ill clients across the life span; specific skills for practice in a microsystem (client group within a clinical unit).
Wi Qtr. 3 cl. Prereq: Grad nursing major and 703.

740 Neuroscience Principles and Concepts Relevant to Psychiatric/Mental Health Nursing GRAD 3 Neurobiological bases of brain-mind-behavior relationships in mental health and illness, including chemical dependence. Emphasis on promotion, maintenance and restoration of central nervous system homeostasis.
Au Qtr. 3 hrs lecture/discussion. Prereq: Admission to master's program in nursing or permission of instructor.

745 Advanced Psychiatric/Mental Health Nursing: Individuals and Families GRAD 3 Advanced clinical therapeutic nursing interventions with persons who have psychiatric disorders, and/or chemical dependence, and their families.
Wi Qtr. 4-hr seminar/discussion. Prereq: Grad standing in nursing or permission of instructor.

752 Community Health Nursing: Society as Client GRAD 3 Overview of contemporary community health nursing theory, research, and practice skills necessary to provide nursing care to selected groups or aggregates within a community setting.
3 cl. Prereq: Admission to master's program in nursing or permission of instructor.

755 Nursing Ethics for Advanced Practice GRAD 3 Study of the central ethical dilemmas facing nursing in health care practice, research, and policy.

760 Foundations for Making the Link between Practice, Theory and Research GRAD 5 Theory and practice with identifying clinical research questions, appraising evidence, applying theories to research, and translation of theory and research-based evidence to clinical practice.
Au Qtr. 2.5-hr cl. Prereq: Grad standing or permission of instructor.

777 Group Process for the Health Professional GRAD 3 Theoretical approaches to group work in the health professions. Focus on group process, approaches to group therapy and approaches to groups in health care treatment.
Au Qtr. 3 cl. Prereq: Grad standing or permission of instructor.

783H Honors Research UGRD 1-5 A project or research study conducted by each honors student with the guidance of a faculty mentor. Student project or thesis presentations are included.
Au, Wi, Sp Qtrs. Arr. Prereq: 420.03H. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

783 Individual Studies in Nursing GRAD 1-5 Reading, conferences, and minor investigation by an individual student who wishes to study a particular nursing problem intensively.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

797 Interdepartmental Seminars UGRD 1-5 Two or more departments may collaborate in presenting seminars in subjects of mutual interest to be announced.
Su, Au, Wi, Sp Qtrs. Repeatable. Permission of college secretary needed to repeat.

803 Introduction to Global Health Research Methods and Design GRAD 4 Examination of quantitative, qualitative and mixed method approaches for the study of global health issues.
Au Qtr. Prereq: Graduate student enrolled in the Graduate Interdisciplinary Specialization in Global Health (GISGH) or permission of instructor.

807 Foundational Knowledge for Nursing and Health Systems Management GRAD 4-7 Study of the theoretical knowledge that provides the foundation for nursing leadership in program and health systems management across the continuum of care.
Au Qtr. 0-4 hrs cl, 9-12 hrs clinical. Prereq: Admission to NUR or permission of instructor.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

808 Skills for Nursing and Health Systems Management GRAD 3-7 Study of the skill sets necessary for program and health systems management across the continuum of care.
Wi Qtr. 0-3 hrs cl, 10-16 hrs clinical. Prereq: Completion of 807 or permission of instructor.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

809 Practicum for Nursing and Health Systems Management GRAD 2-7 An in-depth guided clinical experience for the application of theoretical and skill-based knowledge. Strategies and techniques for evaluation of outcomes are included.
Sp Qtr. 0-2 hrs cl, 16-20 hrs clinical. Prereq: Completion of 808 or permission of instructor.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

810 Clinical Practicum for Nursing and Health Systems Management GRAD 1-10 A guided clinical experience for the application of theoretical and skill-based knowledge in nursing and health systems management.
Su Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

833 Transition to Clinical Nurse Leader Practice GRAD 10 This is the final course in the Clinical Nurse Leader program. Emphasis is on clinical experience and application of theoretical material learned throughout the program.
Su Qtr. 1 cr. hr. to 4 clinical hr/week. Prereq: RN licensure and 733.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

338 Nursing
834 Physiological Monitoring in Pediatric Acute and Critical Care
Development of essential skills for monitoring and managing acutely and critically ill infants, children, and adolescents.
Su Qtr. Prereq: 715 or permission of instructor.

835 Adult Acute Care Nurse Practitioner Skills and Procedures
Theoretical, practical and evidence-based nursing knowledge and psychomotor skills essential to caring for adults across the continuum of acute delivery systems.
Su Qtr. Prereq: 705 and 706 or permission of instructor.

859 Advanced Practice Nursing
Application of theories, research findings, skills and interventions including pharmacological management for advanced practice nursing in primary, acute and chronic care.
Su, Au, Wi, Sp Qtrs. 4-hr seminar; clinical. Prereq: All specialty core courses or permission of instructor. Repeatable.
Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://register.osu.edu

862.05 Practicum in Nursing: Teaching in Nursing
Supervised experiences which permit in-depth study of the roles and relationships in administration, practice, or teaching of nursing. The focus of this course is the application of best pedagogical practices in selected nursing education experiences. A supervised experiential teaching component is included.
1 hr sem; practicum 6 hrs. Prereq: 716 or permission of instructor. Clinical sites arranged with faculty.

862.07 Practicum in Nursing: Administration and Case Management for Clinical Nurse Specialists
Supervised experiences which permit in-depth study of the roles and relationships in administration, practice, or teaching of nursing. Seminar focusing on the understanding and analysis of current trends, challenges, practice and research related to case management and administration by clinical nurse specialists.
Sp Qtr. 3 cl. Prereq: Grad standing in nursing or permission of instructor.

871 Primary Prevention and Health Issues Related to Chemical Use, Misuse and Dependency in Children and Biopsychosocial effects of alcohol and other drugs on the physical, intellectual and emotional lives of users and significant others. Primary prevention approaches for children and adolescents addressed.
3 cl. Prereq: Grad standing or permission of instructor. This course is graded S/U.

872 Intervention Assistance Team: A Strategy for Working with At-Risk Youth in Schools
Responses to a wide range of student/family needs including: adequate services, appropriate non-discriminatory placement, crisis resolution, effective discipline practices and safe and drug-free schools programs.
3 cl. Prereq: Grad standing or permission of instructor. This course is graded S/U.

880 Seminar
Discussion of issues, trends, and problems in nursing; topics to be announced.
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 30 or hrs.

885 Informatic Enabled Health Information
Addresses the appraisal of sources, validity and reliability of health information for clinicians in order to effectively use information to develop personalized health messages for consumers. Prereq: Enrollment in graduate nursing program or permission of instructor. Open only to graduate nursing students and nursing practice students (DNP). Course to familiarize students with using informatics in patient care settings.

893 Individual Studies
Advanced individual studies in selected areas not otherwise offered in nursing.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Enrollment in graduate program or permission of instructor. Repeatable to a maximum of 30 or hrs. This course is graded S/U.

894 Group Studies in Nursing
Reading and group conferences for graduate students who desire to study a particular trend in nursing or nursing education.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 5 or hrs.

900 Pro Seminar in Nursing
Examination of current health care problems, national research priorities, issues within nursing science, career patterns of women and doctorally prepared nurses.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 6 or hrs. This course is graded S/U.

901 Theoretical Foundations of Nursing Science
Study of the major philosophies of nursing from a historical perspective and analysis of methods for theory development in nursing science.
Au Qtr. 5 cl. Prereq: PhD student in nursing, permission of instructor; precon or concur: 900.

902.01 Qualitative Methods in Nursing Science
Study of qualitative methods used in conducting nursing research; laboratory experience will include field work; data management and analysis.
3 cl, 4-hrs lab. Prereq: 901 or permission of instructor.

903 Theory Synthesis I
In-depth analysis of health theories from nursing, biological, and behavioral sciences; emphasis on theories derived from a nursing perspective.
3 cl. Prereq: 901 or permission of instructor.

904 Theory Synthesis II
In-depth synthesis of theories and models of relevance to a program of research in nursing.
Sp Qtr. 3 cl. Prereq: 917.01 or 917.02 or permission of instructor.

912 Introduction to Methods of Nursing Science
Survey of research methods used to describe, explain, predict, and manipulate phenomena relevant to the discipline of nursing. Emphasis on systematic development of nursing knowledge.
Wi Qtr. 5 cl. Prereq: PhD student in nursing or permission of instructor.

914 Principles of Measurement in Health Related Sciences
Study of measurement principles for concepts relevant to nursing science. Emphasis on psychobiobehavioral measurement and measurement of variables for the study of health disciplines.
Sp Qtr. 4 cl. 4 hrs lab. Prereq: 912 or permission of instructor. Required in the PhD program in nursing.

915 Psychobiobehavioral Phenomena Underlying Determinants of Health Status
Study of theoretical and analytical approaches used in psychobiobehavioral nursing research as a foundation for understanding phenomena underlying determinants of health status. Wi Qtr. 5 cl. Prereq: 901. Required in the PhD program in nursing.

916 Psychosocial Mechanisms Underlying Determinants of Health Disparities
Study of theoretical and analytical approaches used in psychosocial research as a foundation for understanding determinants of health disparities. Sp Qtr. 5 cl. Prereq: 901, 915. Required in the PhD program in nursing.

917.01 Seminars in Determinants of Health
Integration of the theoretical and methodological approaches in the study of psycho-biobehavioral phenomena underlying determinants of health. Prereq: 916 or permission of instructor. Required in the Nursing Ph.D program.

917.02 Seminars in Determinants of Health
Integration of the theoretical and methodological approaches in the study of psychosocial phenomena underlying determinants of health. Prereq: 916 or permission of instructor. Required in the Nursing Ph.D program.

940 DNP Professional Seminar
Socialization to leadership and excellence in multiple dimensions of the Doctor of Nursing Practice role.
Au, Wi, Sp Qtrs. Prereq: Enrollment in DNP program or permission of instructor.

999 Research in Nursing
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. Prereq: Graduate student in Nursing. Repeatable. This course is graded S/U.

913 Health Promotion in the Age of Personalized Health Care
Critical analysis of the social determinants of health contributing to health disparities, their synthesis with theories of behavior, and development of strategies to improve outcomes.
Sp Qtr. Prereq: Enrollment as a student in the Doctor of Nursing Practice (DNP) program.

940.01 Doctor of Nursing Practice Professional Seminar I
Socialization to leadership and excellence in multiple dimensions of the Doctor of Nursing Practice role.
Prereq: Enrollment in DNP program or permission of instructor.

940.02 Doctor of Nursing Practice Professional Seminar II
Socialization to leadership and excellence in multiple dimensions of the Doctor of Nursing Practice role.
Prereq: Enrollment in DNP program or permission of instructor.

940.03 Doctor of Nursing Practice Professional Seminar III
Socialization to leadership and excellence in multiple dimensions of the Doctor of Nursing Practice role.
Prereq: Enrollment in DNP program or permission of instructor.

945 Nursing Management for the Doctor of Nursing Practice
Integration of theoretical, technological, leadership and communication principles to design management strategies for evidence based practice approaches to improve health care to selected populations.
Wi Qtr. Prereq: Enrollment in the DNP program.
340 Nursing Practice

951 Scholarly Inquiry in Clinical Nursing Science GRAD 4
Theory and survey of methods for analyzing clinical situations, appraising data, applying theory to research, and translation of theory and research-based evidence to clinical practice.
Au Qtr. 2 hr of sync disc, 2 hr of asyn learning. Prereq: Admission to the Doctor of Nursing Practice (DNP) Program or permission of the instructor. Distance Learning format.

952 Methods and Measurement in Clinical Nursing Science GRAD 4
Theory and survey of research methods and measurement issues related to clinical nursing science. Emphasis is on the systematic identification and utilization of nursing knowledge.
Wi Qtr. Prereq: Enrollment in the Doctor of Nursing Practice (DNP) program. Distance Learning format.

953 Clinical Effectiveness and Translation in Clinical Science GRAD 4
Theory and survey of methods of critical appraisal of clinically relevant nursing research related to clinical effectiveness and translational science.
Sp Qtr. Prereq: Admission to the Doctor of Nursing Practice (DNP) Program or permission of the instructor. Distance Learning format.

959 Doctor of Nursing Practice Clinical Immersion GRAD 7
Integration and synthesis of knowledge and practice experiences designed to help students achieve essential and specialty components of the DNP role.
Au, Wi, Sp Qtr. Prereq: Successful completion of the DNP Professional Doctoral Exam. Repeatable to a maximum of 21 cr hrs. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

998 Doctor of Nursing Practice Final Document GRAD 1-3
Project
Students complete a scholarly clinical or research centered project depending upon their goals and interests.
Prereq: Enrollment in the Doctor of Nursing Practice program and completion of the DNP Professional Doctoral Examination. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

Occupational Therapy

694 Group Studies UGRD 1-5
Supervised group studies of special topics pertinent to the practice of occupational therapy.
Su, Au, Wi, Sp Qtr. Open only to students enrolled in Occupational Therapy Division.
Repeatable to a maximum of 15 cr hrs.

700 Introduction to Occupational Therapy GRAD 2
Introductory course covers professional standards of occupational therapy, scope of practice, models of practice, and history of the profession.
Su Qtr. 1 2-hr cl. Prereq: Admission to the Masters of Occupational Therapy program.

701 Occupational Therapy in Early Intervention GRAD 3
Research/theoretical basis of occupational therapy in early intervention; principles and strategies for working with families; therapy approaches with young children; models of service delivery.
Au Qtr. 1 3-hr cl. Prereq: AMP grad standing. Permission of the instructor.

702 Theoretical Approaches in Occupational Therapy with Children GRAD 3
Neurophysiological and sensory integration approaches used in occupational therapy with young children in a variety of settings.
Wi Qtr. 1 3-hr cl. Prereq: AMP grad standing. Permission of instructor.

703 Occupational Therapy in the Schools GRAD 3
An overview of occupational therapy best practice in the public schools. Students gain understanding of educational regulations, service delivery models, educational research and trends.
Au Qtr. 3 hrs lecture. Prereq: AMP grad standing or permission of instructor.

711 Functional Group Dynamics in Occupational Therapy GRAD 3
Therapy
Identification, examination, and analysis of factors involved in the development and functioning of task oriented groups in occupational therapy practice.
Au Qtr. 1 2-hr cl, 1 2-hr lab. Prereq: Admission to MOT program

712 Occupational Development Across the Life Span and Life Events GRAD 4
Explores the impact of illness, disease, and injury on participation in activities of daily life and engagement in human occupation across the life span.
Au Qtr. 2 2-hr cl. Prereq: Admission to the MOT program.

713 Occupational Therapy and Task Analysis GRAD 3
Analysis of occupation and occupation tasks in self-care, work, and leisure.
Wi Qtr. 2 cl, 1 2-hr lab. Prereq: Admission to MOT program.

714 Foundation of Occupational Therapy Practice GRAD 4
Development of professional skills through analysis of and participation in interaction in health care.
Au Qtr. 1 2-hr cl, 2 2-hr labs. Prereq: Admission to MOT program.

715 Neuroscience: Fundamentals for Occupational Therapists GRAD 4
Fundamentals for neuroanatomy and neurophysiology for occupational therapy practice.
Au Qtr. 2 2-hr cl. Prereq: Admission to MOT program.

716 Conditions in Occupational Therapy GRAD 3
Analysis of conditions seen in occupational therapy with emphasis on orthopedic conditions.
Sp Qtr. 1 1.5-hr cl.

717 Splinting in Occupational Therapy GRAD 2
Applies biomechanical principles and knowledge of medical conditions to increase occupational performance through the fabrication of basic splints and related supportive devices.
Au Qtr. 1 1-hr lec, 1 2-hr lab. Prereq: Anatomy 600 and OccTher 743.

718 Directed Practicum: Experience of Disability GRAD 3
In-depth interactions with persons with disability to explore the experience of disability from the person's perspective. Introduction to disabilities studies and qualitative research methodology.
Wi Qtr. 2 hrs lec, 2 hrs practical. Prereq: Admission to Occupational Therapy program.

720 Guided Practicum in Mental Health GRAD 3
Supervised clinical experience with people who have emotional/behavioral problems or mental disorders.
Wi Qtr. 1 cl, 2 2-hr clinics. Prereq: 712, 713.

721 Guided Practicum: Physical Function in Occupational Therapy GRAD 3
Supervised clinical experience in settings with individuals who have problems of physical function.
Wi Qtr. 1 cl, 2 2.5-hr clinics. Prereq: 712, 713.

724 Guided Practicum: Children and Public School GRAD 3
Supervised clinical experience with children with disabilities in schools.
Wi Qtr. 1 cl, 4 hr clinic. Prereq: Admission to MOT program; 745, 746.

725 Service Learning in Occupational Therapy GRAD 1
Designed to provide students with service learning opportunities, to enhance their civic skills, and to facilitate an interdisciplinary approach to treatment.
Au, Wi. Sp Qtr. 2-hr cl, 5 sessions. Prereq: Admission to Occupational Therapy program. Repeatable to a maximum of 3 cr hrs. Some travel to participant locations required within central Ohio area. This course is graded S/U.

741 Occupational Therapy in Mental Health I GRAD 3
Description and explanation of competing theoretical propositions and techniques used by occupational therapy to bring about change for people with serious emotional/behavioral problems.
Wi Qtr. 1 2-hr cl, 1 2-hr lab.

742 Occupational Therapy in Mental Health II GRAD 5
Systematic observation, assessment, and development of occupational therapy intervention plans for people with serious emotional/behavioral problems and mental disorders.
Sp Qtr. 1 4-hr cl, 1 2-hr lab. Prereq: 712.

743 Occupational Therapy in Physical Function I GRAD 5
Evaluation, remediation principles, and disability prevention used in occupational therapy practice with a focus on musculoskeletal diagnoses.
Au Qtr. 4 cl, 1 2-hr lab. Prereq: 715.

744 Occupational Therapy in Physical Function II GRAD 5
Application of assessment techniques and intervention strategies for clients with physical dysfunction.
Sp Qtr. 3 cl, 2 2-hr labs. Prereq: 715.

745 Occupational Therapy for Children GRAD 4
Evidence based practice models and techniques to enhance children's occupations.
Wi Qtr. 2 2-hr cl. Prereq: Admission to MOT program.

746 Occupational Therapy Assessment of Children GRAD 4
Describes assessment purposes and selective instruments for those purposes; problem based models, test validity, and reliability are emphasized.
Sp Qtr. 2 2-hr cl.

747 Occupational Therapy for Neurological Conditions GRAD 6
Examines performance abilities in persons with central nervous system dysfunction. Course also includes principles and strategies for evaluation and treatment.
Wi Qtr. 3 2-hr cl. Prereq: 712, 715.

748 Occupational Therapy in Gerontology GRAD 4
Activity based intervention, rehabilitation, and environmental adaptations specific to frail and well aging adults will be examined. Social policies affecting the lives of older adults will be explored.
Sp Qtr. 2 2-hr cl. Prereq: 716, 741, 747, 743.

750 Applied Technology in Occupational Therapy GRAD 3
Evaluation of client's assistive technology needs, recommendations for assistive technology and environmental modifications to maximize function.
Wi Qtr. 1 cl, 2 2-hr labs. Prereq: 713, 716.
Occupational Therapy 341

751 Research Methods Used in Occupational Therapy  GRAD 3
Research methods and designs used in occupational therapy; analysis of occupational therapy research.
Au Qtr. 2 1.5-hr cl.

752 Planning and Management of Occupational Therapy Services  GRAD 3
Examination of the impact of health care delivery systems and public policy on planning and management of occupational therapy services.
Au Qtr. 2 1.5-hr cl. Prereq: 714; 720; 721.

753 Occupational Therapy Consultation and Supervision  GRAD 3
Examines consultation theories, models, principles and strategies. Consultation models will be applied to occupational therapy services in medical, community, and educational systems.
Sp Qtr. 2 1.5-hr cl. Prereq: 714.

755 Occupational Therapy Fieldwork Preparation and Early Professional Practice  GRAD 1
Selected topics relating to preparation for Level II fieldwork and early professional practice.
Sp Qtr. 1 cl, 2 2-hr labs. Prereq: 751; 786.01. This course is graded S/U.

785.01 Full Time Fieldwork in Occupational Therapy: II-A  GRAD 6
Full time fieldwork in selected occupational therapy service settings.
40 clinic. Prereq: Completion of all required academic and level 1 fieldwork courses. Open only to students who complete occupational therapy academic courses at Ohio State University. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

785.02 Full Time Fieldwork in Occupational Therapy: II-B  GRAD 6
Full time fieldwork in selected occupational therapy service settings.
40 clinic. Prereq: Completion of all required academic and level 1 fieldwork courses. Open only to students who complete occupational therapy academic courses at Ohio State University. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

785.03 Full Time Fieldwork in Occupational Therapy: Advanced Placement  GRAD 2-6
Full time fieldwork in selected occupational therapy service settings. Elective full time fieldwork in specialty practice occupational therapy settings.
1, 2 or 3 months, with instructor. Prereq: Completion of all academic coursework in MOT program. Open only to students who complete occupational therapy academic courses at Ohio State University. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

786.01 Guided Research Projects I  GRAD 3
Submit an IRB protocol; collect quantitative or qualitative data specific to research plan developed in Occ Ther 751.
Wi Qtr. 1 cl, 2 2-hr labs. Prereq: 751. This course is graded S/U.

786.02 Guided Research Projects II  GRAD 3
Development of a research proposal or program plan; data collection and analysis, interpretation of results and completion of a written report.
Sp Qtr. 1 cl, 2 2-hr labs. Prereq: 751; 786.01. This course is graded S/U.

798 Guided Research Practicum  GRAD 3
Students learn evidence based practice by finding research papers to answer clinical questions analyzing research reports, and synthesizing findings to make clinical recommendations. Wi Qtr. 3 hrs cl. Prereq: Admission to MOT program.

793 Individual Studies  GRAD 1-5
Guided study with occupational therapy readings, research, and/or experiences selected by the individual and approved by the faculty.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

795 Seminar  GRAD 1-3
Analysis and group discussion of selected topics.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

889.01 Advanced Clinical Practicum in Occupational Therapy: Pediatric Area of Specialization  GRAD 2-4
Advanced clinical experience in occupational therapy: Pediatric Area of Specialization. Prereq: Permission of instructor and enrollment in AMP grad program. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

Ohio State Biochemistry Program

760 First-Year Student Orientation  GRAD 1
Orientation for first-year students in the OSBP; lectures on topics important for successful graduate experience; training in presenting scientific papers.
Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in OSBP. Repeatable to a maximum of 4 cr hrs.

790 Colloquium-Advanced Biochemistry Topics  GRAD 1
Seminars presented by Ohio State faculty and by faculty and professionals from outside the University.
Su, Wi, Sp Qtrs. 1 cl. Open only to students in the Ohio State biochemistry program. Repeatable to a maximum of 21 cr hrs. This course is graded S/U.

793 Individual Studies  GRAD 1-10
A qualified graduate student may conduct a minor laboratory research investigation in biochemistry under the direction of program faculty members.
Su, Au, Wi, Sp Qtrs. 1-5 cl. Prereq: Admission to the OSBP. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

794 Group Studies  GRAD 1-5
Designed for students to investigate advanced selected topics in biochemistry.
Su, Au, Wi, Sp Qtrs. 1-5 cl. Prereq: Admission to the OSBP. Repeatable to a maximum of 10 cr hrs.

796 Interdisciplinary Seminar in Advanced Biochemistry  GRAD 1
Interdisciplinary Seminar in Advanced Biochemistry.
Au, Wi, Sp Qtrs. 1 cl. Repeatable to a maximum of 21 cr hrs.

999.01 Research in Biochemistry  GRAD 1-18
Research inBiochemistry for thesis or dissertation purposes only. Prereq: Permission of Instructor. This course will not serve as a replacement for the 999 course offering within a faculty’s academic department. Repeatable. This course is graded S/U.

Ophthalmology

999 Research in Ophthalmology  GRAD 1-18
Research for thesis purposes only.
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

Optometry

401 Survey of Optometry  OPT 1
Development of optometry and optometric education; scope of optometric services; sources of vision information; kinds of current vision research.
Au Qtr. 1 cl. Prereq: Optometry 1st yr standing.

402 Rights and Responsibilities of Optometrists  OPT 2
Professional behaviors, ethics and communication skills necessary for patient care; patient rights; confidentiality and licensing requirements for health care professionals.
Sp Qtr. 2 cl. Prereq: Optometry 1st yr standing.

420 Optometric Career Options and Financing  OPT 2
Goal setting, modes of optometric practice, and budgeting/debt management principles for achieving personal financial success while in school and after graduation.
Au Qtr. 2 cl. Prereq: Optometry 1st yr standing.

422 Financial Issues in Optometric Health Care  OPT 1
Overview and history of managed care; Medicaid, Medicare, and other third-party payment plans; rules for documenting patient histories, examinations, and decision-making.
Su Qtr. 1 cl. Prereq: Optometry 1st yr standing.

423 Coding and Reimbursement  OPT 1
ICD-9 and CPT coding procedures for vision and management/evaluation services; reimbursement issues related to fee schedules, insurance audits, and third-party billing.
Sp Qtr. 1 cl. Prereq: Optometry 2nd yr standing.

424 Third-Party Payment Plans  OPT 1
Issues related to joining a third-party payment plan; integrating managed care into the optometric office; evaluation of managed care contracts.
Au Qtr. 1 cl. Prereq: Optometry 3rd yr standing.

431 Ophthalmic Optics I  OPT 4
Ophthalmic optics of single-vision and multifocal spectacle lenses; measurement and inspection of spectacle lenses; manufacturing processes.
Au Qtr. 3 cl. 1 2-hr lab. Prereq: Optometry 2nd yr standing.

432 Ophthalmic Optics II  OPT 4
Ophthalmic lens design; minimizing lens aberrations; theory and practice in fitting and adjusting spectacles.
Wi Qtr. 3 cl. 1 2-hr lab. Prereq: 431.

433 Introduction to Contact Lenses  OPT 3
The optics of corneal and scleral contact lenses, laboratory exercises in inspecting, measuring, edging, surfacing, and modifying contact lenses.
Su Qtr. Prereq: 432.

441 Practical Optometry I  OPT 4
Theory and techniques of case history, keratometry, retinoscopy, objective and subjective tests of refraction.
Au Qtr. 3 cl. 1 3-hr lab. Prereq: Optometry 2nd yr standing.
342 Optometry

442 Practical Optometry II OPT 4
Correlation and analysis of vision examination data; accommodation and extra-ocular muscles; systematic determination of the etiology of vision anomalies and sources of visual discomfort and inefficiency.
Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 441.

443 Practical Optometry III OPT 2
Techniques of investigating special types of vision anomalies; diagnosing and prescribing for vision anomalies; coding and billing. Emphasis on case analysis.
Sp Qtr. 2 cl. Prereq: 442 and 711.

445.01 Introduction to General Practice OPT 2
Introduction to clinical practice in examining the visual system and carrying out corrective procedures.
Sp Qtr. Prereq: 442; 711; Optometry 2nd yr standing; minimum of 3 clinical hrs. Repeatable to a maximum of 4 cr hrs.

541 Keystone 1: Introduction to Clinical Diagnostic OPT 2
Reasoning in Optometry
Using a problem-based learning format, optometric cases will be utilized to model and develop diagnostic reasoning skills emphasizing basic science and systemic disease.
Su Qtr. Prereq: Optometry 3rd year standing.

542 Keystone 2: Intermediate Clinical Diagnostic OPT 2
Reasoning in Optometry
Using a problem-based learning format, optometric cases will be utilized to further develop clinical diagnostic and management skills requiring basic and clinical science integration.
Su Qtr. Prereq: Optometry 3rd year standing.

632 Vision of Children OPT 5
Vision screening; the prevalence of visual anomalies and eye diseases in children; basic visual skills required in school and methods for their improvement.
Au Qtr. 3 cl, 1 4-hr lab. Prereq: Optometry 3rd yr standing.

640 Clinical Practice in Optometry I OPT 1
Consideration of selected problems and conditions encountered in the delivery of patient care.
Su Qtr. 1 cl. Prereq: 443.

641 Clinical Practice in Optometry II OPT 2
Glaucoma diagnosis and management including epidemiology, pathophysiology, risk assessment, differential diagnosis, and surgical management and coding.
Au Qtr. 2 cl. Prereq: Optometry 3rd yr standing.

642 Clinical Practice in Optometry III OPT 1
Continuation of 641.
Wi Qtr. 1 cl. Prereq: 641.

643 Clinical Practice in Optometry IV OPT 1
Continuation of 642.
Sp Qtr. 1 cl. Prereq: 642.

645.01 Intermediate Special Clinical Practice: General Practice OPT 1-6
Clinical practice in examining the visual system and carrying out corrective procedures. Prereq: 443, 712 and 681. Repeatable to a maximum of 30 cr hrs.

645.02 Intermediate Special Clinical Practice: Ophthalmic Dispensing OPT 1-6
Clinical education and practice in ophthalmic design and dispensing; education and experience in dispensary management.
Prereq: 432 and 443 or permission of instructor. Repeatable to a maximum of 30 cr hrs.

645.03 Intermediate Special Clinical Practice: Contact Lenses OPT 1-5

645.04 Intermediate Special Clinical Practice: Ocular Disease Practice OPT 2
Clinical experience in specialized phases of optometric diagnosis and treatment. Prereq: Optometry 3rd yr standing. Repeatable to a maximum of 5 cr hrs.

653 Contact Lenses I OPT 4
The uses of contact lenses; theory and methods of prescribing and fitting; specification and verification; post-fitting care; contact lens solutions.
Wi Qtr. 3 cl, 1 2-hr lab. Prereq: Optometry 3rd yr standing and 443.

654 Contact Lenses II OPT 4
Theory and clinical methods involving meridional and bifocal contact lenses; fitting: astigmatic corneas and aphakic eyes, haptic and keratoconic lenses, cosmetic shells and prosthetic eyes. Wi, Sp Qtrs. 3 cl, 1 2-hr lab. Prereq: 653.

656 Low Vision Rehabilitation OPT 4
Epidemiology, clinical measurement, and classification of visual impairment; design of optical and optoelectronic aids; clinical rehabilitation strategies.
Sp Qtr. 3 cl, 1 2-hr lab. Prereq: Optometry 3rd yr standing.

660 Advanced Diagnosis and Management of Ocular Disease OPT 3
Advanced management, pre and post-operative management, and surgical procedures will be covered. 3 cl. Prereq: Optometry 712 and Optometry 682.

671 Clinical Binocular Vision I OPT 5
Classification, epidemiology, phenomenology, diagnosis, and management of nonstrabismic and strabismic binocular vision disorders, accommodative anomalies, amblyopia, oculomotor deficiencies, and visual perceptual lags.
Wi Qtr. 4 cl, 1 2-hr lab. Prereq: Optometry 3rd yr standing and 443.

672 Clinical Binocular Vision II OPT 2
Continuation of 671.
Sp Qtr. 1 cl, 1 2-hr lab. Prereq: 671.

681 Ocular Pharmacology for Optometrists OPT 3
Pharmacological agents used in clinical optometric care.
Sp Qtr. 3 cl. Prereq: VisSci 680 and Optometry 2nd yr standing.

682 Clinical Ocular Pharmacology OPT 4
Case-based learning of ocular pharmacology with an emphasis on systemic disease will be presented.
Su Qtr. 4 cl. Prereq: 681 and Optometry 3rd yr standing. Open only to students registered in the College of Optometry.

709 Differential Diagnosis in Anterior Segment Disease OPT 2
In the first course of the ocular disease series, differential diagnosis techniques for anterior segment disease including epidemiology, temporal patterns, and associated conditions are presented.
Au Qtr. Prereq: Optometry 2nd yr standing or permission of instructor.

710.01 Diagnostic Techniques Lab I OPT 2
Prediagnostic experience in testing and treatment procedures to manage health and disease in optometric practice. Testing and treatment procedures to manage health and disease.
Au Qtr. 1 cl, 1 2-hr lab. Prereq: Optometry 2nd yr standing. Repeatable to a maximum of 4 cr hrs.

710.02 Diagnostic Techniques Lab II OPT 2
Prediagnostic experience in testing and treatment procedures to manage health and disease in optometric practice. Testing and treatment procedures to manage health and disease.
Continuation of 710.01.
Wi Qtr. 1 cl, 1 2-hr lab. Prereq: 710.01 and Optometry 2nd yr standing. Repeatable to a maximum of 4 cr hrs.

711 Introduction to Ocular Disease I OPT 4
Introduction to abnormalities and diseases of anterior and posterior segments of the eye with an emphasis on identification, diagnosis, and general management.
Au Qtr. 4 cl. Prereq: VisSci 680 and Optometry 2nd yr standing or permission of instructor.

712 Introduction to Ocular Disease II OPT 5
Continuation of 711 with an emphasis on disorders of the posterior segment.
Sp Qtr. 4 cl. 1 2-hr lab. Prereq: Optometry 2nd yr standing and 711 or permission of instructor.

713 Introduction to Ocular Disease III OPT 4
Continuation of 712, with emphasis on neurological diseases of the eye and visual system, and on assessment of the visual field.
Su Qtr. 4 cl. Prereq: 712.

714 Systemic Disease for Optometry OPT 4
The biological basis for understanding disease processes, the clinical characteristics of diseases, and approaches to diagnosis and treatment of diseases.
Au Qtr. 3 cl. 1 2-hr lab. Prereq: Optometry 3rd yr standing or permission of instructor.

721 Optometric Economics and Jurisprudence; Practice Analysis and Practice Systems OPT 3
Benchmarks, statistical and financial data analysis systems to determine practice viability; the administrative and logistical systems used in an optometric practice; jurisprudence and malpractice.
Sp Qtr. 3 cl. Prereq: Optometry 3rd yr standing.

722 Public Health and Community Optometry OPT 3
Public health/community aspects of providing vision care; epidemiology; health care policy; ethical and cultural issues in eye care; role of the optometrist as a community health care leader.
Au Qtr. 3 cl. Prereq: Optometry 3rd yr standing.

741 Clinical and Business Aspects of Practice OPT 1-6
Contemporary topics in clinical and business aspects of optometry including new diagnostic and treatment methodologies and the preparation of business plans.
Su, Au, Wi, Su Qtrs. Prereq: Optometry 4th yr standing. Repeatable to a maximum of 6 cr hrs.

745.01 Special Clinical Practice: General Practice OPT 1-15
Clinical experience in specialized phases of optometric practice. Prereq: 645.01; 654; Optometry 4th yr standing. Repeatable to a maximum of 45 cr hrs.

745.02 Special Clinical Practice: Contact Lenses and Primary Care Optometry OPT 1-15
Clinical experience in specialized phases of optometric practice. Prereq: Optometry 4th yr standing. Repeatable to a maximum of 45 hrs.
745.03 Special Clinical Practice: Strabismus and Orthoptics
Clinical experience in specialized phases of optometric practice.
Prereq: Optometry 4th yr standing. Repeatable to a maximum of 45 cr hrs.

745.04 Special Clinical Practice: Ocular Disease
Clinical experience in specialized phases of optometric practice.
Prereq: Optometry 4th yr standing. Repeatable to a maximum of 45 cr hrs.

745.05 Special Clinical Practice: Aniseikonia
Clinical experience in specialized phases of optometric practice.
Prereq: Optometry 4th yr standing. Repeatable to a maximum of 45 cr hrs.

745.06 Special Clinical Practice: Vision Rehabilitation Clinic
Clinical experience in specialized phases of optometric practice.
Prereq: Optometry 4th yr standing. Repeatable to a maximum of 45 cr hrs.

745.07 Special Clinical Practice: Perceptual-Motor Problems
Clinical experience in specialized phases of optometric practice.
Prereq: Optometry 4th yr standing. Repeatable to a maximum of 45 cr hrs.

745.08 Special Clinical Practice: Ophthalmic Dispensing
Clinical experience in specialized phases of optometric practice. Advanced clinical education and practice in ophthalmic design and dispensing; specialized ophthalmic designs; education and experience in dispensary management.
Prereq: 443 and 445.02 and Optometry 4th yr standing, or permission of instructor. Repeatable to a maximum of 45 cr hrs.

745.09 Special Clinical Practice: Geriatric Optometry
Clinical experience in specialized phases of optometric practice. Specialized techniques, evaluation methods, patient instructions, and lens design appropriate to the vision problems of the older patient.
Prereq: Optometry 4th yr standing. Repeatable to a maximum of 45 cr hrs.

745.10 Special Clinical Practice: Pediatric Optometry
Clinical experience in specialized phases of optometric practice. Specialized testing techniques and methods of evaluation appropriate to infants and children (through age 12) as well as exceptional children of any age.
Prereq: Optometry 4th yr standing. Repeatable to a maximum of 45 cr hrs.

745.11 Special Clinical Practice: Ocular Disease Extern Experience
Clinical experience in specialized phases of optometric practice.
Prereq: Optometry 4th yr standing. Repeatable to a maximum of 45 cr hrs.

745.12 Special Clinical Practice: Primary Care Extern Experience
Clinical experience in specialized phases of optometric practice.
Prereq: Optometry 4th yr standing. Repeatable to a maximum of 45 cr hrs.

745.13 Special Clinical Practice: Advanced Clinical Practice
Clinical experience in specialized phases of optometric practice. Emphasis on patients at high risk for ocular disease for advanced clinical optometric practice in pediatrics, vision therapy, contact lenses, low vision or other areas.
Prereq: Optometry 4th yr standing. Repeatable to a maximum of 45 cr hrs.

780.01 Topics in Optometry: General Optometry
Clinical and theoretical aspects of areas of current interest in optometry: General Optometry.
Prereq: Enrollment in College of Optometry and permission of dean. Repeatable to a maximum of 10 cr hrs.

780.02 Topics in Optometry: Contact Lenses
Clinical and theoretical aspects of areas of current interest in optometry: Contact Lenses.
Prereq: Enrollment in College of Optometry and permission of dean. Repeatable to a maximum of 10 cr hrs.

780.03 Topics in Optometry: Ocular Disease
Clinical and theoretical aspects of areas of current interest in optometry: Ocular Disease.
Prereq: Enrollment in College of Optometry and permission of dean. Repeatable to a maximum of 10 cr hrs.

780.04 Topics in Optometry: Ocular Disease
Clinical and theoretical aspects of areas of current interest in optometry: Ocular Disease.
Prereq: Enrollment in College of Optometry and permission of dean. Repeatable to a maximum of 10 cr hrs.

780.05 Topics in Optometry: Low Vision
Clinical and theoretical aspects of areas of current interest in optometry: Low Vision.
Prereq: Enrollment in College of Optometry and permission of dean. Repeatable to a maximum of 10 cr hrs.

780.06 Topics in Optometry: Low Vision
Clinical and theoretical aspects of areas of current interest in optometry: Low Vision.
Prereq: Enrollment in College of Optometry and permission of dean. Repeatable to a maximum of 10 cr hrs.

780.10 Environmental Vision
Clinical and theoretical aspects of areas of current interest in optometry: Environmental Vision.
Prereq: Enrollment in College of Optometry and permission of dean. Repeatable to a maximum of 10 cr hrs.

780.11 Topics in Optometry: Pediatric Optometry
Clinical and theoretical aspects of areas of current interest in optometry: Pediatric Optometry.
Prereq: Enrollment in College of Optometry and permission of dean. Repeatable to a maximum of 10 cr hrs.

803 Observations in Clinical Voice Pathology
Provides students with an opportunity to observe the clinical management of voice disorders including the assessment, treatment and rehabilitation process. Su, Au, Wi. Sp Qtr. Must be admitted to the Interdisciplinary Singing Health Specialization Program. Repeatable to a maximum of 6 cr hrs. Credit counts toward Singing Health Specialization. This course is graded S/U.

804 Observations in Surgical Laryngology
Provides students with an opportunity to observe the surgical management of voice disorders including those pertaining to singers. Su, Au, Wi. Sp Qtr. Must be admitted to the Interdisciplinary Singing Health Specialization Program. Repeatable to a maximum of 6 cr hrs. Credit counts toward Singing Health Specialization. This course is graded S/U.

809 Issues in Laryngology for the Vocal Health Professional
Introduces students to the medical management of voice disorders including surgical techniques and associated instrumentation, advanced anatomy/physiology, and vocal pathologies. Wi Qtr. 1 cr hr. Must be admitted to the Interdisciplinary Singing Health Specialization Program. Credit counts toward Singing Health Specialization. This course is graded S/U.

Pathology

640 Fundamentals of Oncology
4 Lecture/seminars covering aspects of oncology, chemical and biologic carcinogenesis, epidemiology, genetics, development biology, biochemistry, cell kinetics, clonality, metastases, hormonal and immunologic factors, and therapy. Wi Qtr. 4 cl. Prereq: Permission of instructor. Cross-listed in Vet Biosciences.

650 Pathology
MED 5 Overview of molecular and cellular mechanisms of the pathogenesis of inflammation, cell death neoplasia, immunological disorders, infectious disease, genetic disease, and others.

655 General Pathology
MED 4 General pathology, including the etiology of diseases, disturbances of nutrition, inflammation, regeneration, and organ pathology. Au Qtr. 4 cl. Prereq: Dent 2nd yr standing.

670 Medical Cytogenetics
GRAD 3 Overview of cytogenetics in medical diagnosis and evaluation, including laboratory techniques, nomenclature, structural and numerical chromosome abnormalities; prenatal, constitutional, and cancer cytogenetics; molecular cytogenetics and molecular diagnostics; and clinical correlations.

733 Human Genetics
GRAD 3 The principles of human genetics covering mapping of disease genes, defects causing human disease, the cloning of disease genes, gene therapy and transgenes. Sp Qtr. 3 cl and cptr time arr. Prereq: MolGen 500 or 501 or 606 or equiv. Not open to students with credit for MBiochem 733 or MolGen 733. Cross-listed in MBiochem and MolGen.

792.20 Essential Readings in Immunology
MED 2 Review of classical papers in immunology.

793.01 Individual Studies: Pathologic Anatomy
MED 3-18 Pathologic Anatomy. 1, 2, or 3 months; offered all months. (prof cr). Prereq: Med III and IV standing, grad standing, or undergrad standing with permission of instructor. When registration is for 3 professional cr hrs, an additional 3 hr professional course must be taken. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

793.05 Individual Studies: Neuropathology
MED 3-18 Neuropathology. 1, 2, or 3 months; offered all months. (prof cr). Prereq: Med III and IV standing, grad standing, or undergrad standing with permission of instructor. When registration is for 3 professional cr hrs, an additional 3 hr professional course must be taken. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.
Pathology

793.09 Individual Studies: Surgical Pathology UGRD 3-18
Surgical Pathology, 1, 2, or 3 months; offered all months. (prof cr.)
Prereq: Med III and IV standing, grad standing, or undergrad standing with permission of
instructor. When registration is for 3 professional cr hrs, an additional 3 hr professional course
must be taken. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

793.11 Individual Studies: Special Topics in Pathologic Anatomy MED 3-18
Special Topics in Pathologic Anatomy. 1, 2, or 3 months, offered all months. (prof cr.)
Prereq: Med III and IV standing, grad standing, or undergrad standing with permission of
instructor. When registration is for 3 professional cr hrs, an additional 3 hr professional course
must be taken. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

793.15 Individual Studies: Problems in Pathology and Clinical Pathology MED 3-18
Problems in Pathology and Clinical Pathology. 1, 2, or 3 months; offered all months. (prof cr.)
Prereq: Med III and IV standing, grad standing, or undergrad standing with permission of
instructor. When registration is for 3 professional cr hrs, an additional 3 hr professional course
must be taken. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

847 Cellular Mechanisms and Pathogenesis of Inflammation GRAD 3
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.
Wi Qtr. Prereq: M/V/MG 701 or Med Micro 701 or Microbio 701. Not open to students with credit for
Med Micro 847. Cross listed in M/V/MG.

850 Seminar in Pathology and Clinical Pathology GRAD 1
Discussion of pertinent literature, presentation and discussion of research work, and
demonstration of fresh specimens and slides.
Su, Au, Wi, Sp Qtrs. 1-2 hr cr. Prereq: Grad standing in pathol. Repeatable. This course is
graded S/U.

891.01 Interdisciplinary Seminar on Biomedical Images GRAD 1-2
Graduate seminar for Graduate Interdisciplinary Specialization in Comprehensive Engineering
and Science of Medical Images.
Au, Wi, Sp Qtrs. 1 cl. Prereq: Grad standing. Cross-listed in BioMedEd, BioMed, Biophys, CSE,
ECE, IBGP, Radiol, Stat, and VisSci. Repeatable to a maximum of 3 cr hrs. This course is
graded S/U.

999 Research in Pathology GRAD 1-18
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

Pediatrics

699 Undergraduate Research in Pediatrics UGRD 1-15
Undergraduate research experience in pediatrics.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr
hrs. This course is graded S/U.

793.03 Individual Studies: Infectious Diseases MED 1-18
Infectious Diseases.
1, 2, 3, or 4 months; offered all months. Prereq: Permission of instructor. This course is graded
S/U. Repeatable to a maximum of 24 cr hrs.

793.06 Individual Studies: Blood Diseases of Infants and Children MED 1-6
Blood Diseases of Infants and Children.
1 month, offered all months except June. Prereq: Permission of instructor. This course is
graded S/U.

Persian

101 Elementary Persian I UGRD 5
Introduction to Persian; development of listening, reading, speaking, and writing skills.
Au Qtr. 5 cl. Not open 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. This course is available for EM credit. GEC for lang course. FL Admins Cond course.

102 Elementary Persian II UGRD 5
Further development of listening, reading, speaking, and writing skills.
Wi Qtr. 5 cl. Prereq: 101. Not open to native speakers of this language through regular course enrollment or
EM credit. This course is available for EM credit. GEC for lang course. FL Admins Cond course.

103 Elementary Persian III UGRD 5
Development of listening, reading, speaking, and writing skills; reading of simplified literary texts
about Persian culture.
Sp Qtr. 5 cl. Prereq: 102. Not open to native speakers of this language through regular course enrollment or
EM credit. This course is available for EM credit. GEC for lang course.

104 Intermediate Persian I UGRD 5
Reading of Persian short stories and poems with attention to literary and cultural appreciation;
development of basic language skills.
Au Qtr. 5 cl. Prereq: 103. Not open to native speakers of this language through regular course enrollment or
EM credit. This course is available for EM credit. GEC for lang course.

201 Intermediate Persian II UGRD 5
Extensive reading from literary texts, with practice in conversation and composition.
2-2 hr cl. Prereq: 201 or 401 or equiv. Not open to students with credit for 401.

202 Intermediate Persian III UGRD 5
Continued reading from literary texts, with further practice in conversation, composition, and
translation.
2-2 hr cl. Prereq: 201 or 401 or equiv. Not open to students with credit for 402.

241 Persian Culture UGRD 5
A survey of Persian culture through the reading of Persian literature in translation, viewing of
Persian films, and listening to Persian music.
GEC arts and hums cultures and ideas and social diversity - international issues (Global)
course.

293 Individual Studies UGRD 1-5
Individual Studies.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr
hrs. This course is graded S/U.

294 Group Studies UGRD 1-5
Group Studies.
Special topics to be announced in the quarter previous to the one in which the course is offered
Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

301 Advanced Persian: Reading and Composition UGRD 5
Extensive reading of classical and modern Persian literary texts, with practice in grammar and
composition at an advanced level.
Wi Qtr. Prereq: 202 or permission of instructor.

370 Persian Mythology and Folklore UGRD 5
Mythology and folklore of Persian-speaking lands, from cosmological texts through popular
theater and narrative performance to popular customs and beliefs.
Prereq: English 110 or 111. GEC arts and hums lit and social diversity - international issues (Global)
course.

371 Persian Literature in Translation UGRD 5
A study of Persian literature in translation and the history of its discourses, genres, and styles.
* GEC arts and hums lit and social diversity - international issues (Global) course.

374 Introduction to Persian Epic UGRD 5
An introduction, in English, to The Shahnameh of AbolQasem Ferdowsi.
Prereq: English 110.xx. Taught in English. No knowledge of Persian required. GEC arts and
hums literature course.

651 Persian Prose UGRD 5
Selected readings reflecting the major genres of classical Persian prose, plus a modern novel.
Prereq: 402 or permission of instructor.

652 Persian Poetry UGRD 5
Selected topics in Persian poetry; concentrating primarily on the medieval poetic narrative, as
exemplified by epic, romance, and the mystical/didactic poem.
Prereq: 402 or permission of instructor.

693 Individual Studies UGRD 1-5
Individual Studies.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr
hrs. This course is graded S/U.

694 Group Studies UGRD 1-5
Group Studies.
Special topics to be announced in the quarter previous to the one in which the course is offered
Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

697 Study at a Foreign Institution UGRD 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that
work.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a
maximum of 45 cr hrs. This course is Progress (P) graded. Students will pay Ohio State fees
and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

721 Studies in Persian Poetry UGRD 5
Advanced study of specific poetic periods, figures, and/or topics involving extensive reading
and discussion of appropriate primary and secondary source materials.
Prereq: 10 cr hrs of Persian literature at the 600 level or equiv. Repeatable to a maximum of 15 cr
hrs.

783H Honors Research UGRD 3-5
A program of research for each student which includes individual conferences and which
culminates in an honors thesis or oral defense.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Approved candidacy for graduation with distinction, which
includes faculty adviser and ASC Honors Committee approval of project, a minimum 3.50 pt-hr
ratio in the field of distinction, or standing, and CPRH/commensurate with honors program
membership. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.
Pharmacology

600 General Pharmacology UGRD 3
Introduction to the general principles of pharmacology, drug classification, and the sites and mechanisms of drug action.
Su, Au, Wi, Sp Qtrs. Prereq: Some background in biochemistry and/or physiology or permission of instructor. A distance learning section D is a totally online course in pharmacology. Students are expected to learn the material posted on the course web site.

625 Undergraduate Independent Study in Pharmacology/Pharmacogenomics UGRD 1-10
Offers undergraduate students the opportunity to gain research experience in laboratories in Pharmacology/Pharmacogenomics and learn the latest techniques and approaches.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.
This course is graded S/U.

824 Neuropharmacology GRAD 3
A study of the central nervous system including neurochemistry, neurotransmission, receptors, signal transduction, CNS disorders, treatments and the pharmacology of drugs that act on the CNS.
Sp Qtr. 2 cl arr. Prereq: 600, 700, or permission of instructor. Not open to students with credit for NeuroGSP 824. Cross-listed in Neuroscience Graduate Studies Program.

825 Clinical Trials I GRAD 10
To provide an introduction to clinical trials, including federal regulations, standard operating procedures and design of studies.
Wi Qtr. Prereq: 600 (Web based), Pharmacy 731, 732, VsSci 780.07. lays the foundation for conducting clinical trials. Students will learn the fundamentals of protocols, writing consent forms, and completing other procedures related to clinical pharmacology.

826 Clinical Trials II GRAD 10
To provide instructions in all aspects of conducting clinical trials.
Sp Qtr. Prereq: 825. Instructs students in all aspects of clinical research, from writing proposals and consent forms to designing advertisements.

830 Molecular Pharmacology and Human Disease GRAD 3
Molecular mechanisms of drug actions in the treatment of human disease.
Au Qtr. 3 cl. Prereq: 600 or 600D or IBGP 702 or permission of instructor/course director.

999 Research in Pharmacology GRAD 1-18
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

Pharmacy

100 Pharmaceutical Sciences Survey UGRD 1
Introduction to the University, strategies for student success, academic programs, opportunities in the pharmaceutical sciences and practice, and contemporary issues.
Au Qtr. 1 cl, 1 rec. Prereq: Enrollment limited to students in the Pharmacy Honors and Scholars Program.

200 The Rational and Irrational Use of Drugs UGRD 3
Survey of the fundamentals of drug action with special emphasis on drugs of abuse; discussion of medical, social, legal, and educational aspects of drug use.
Sp Qtr. 3 cl. Not open for credit to professional students in the College of Pharmacy. NS Admis Cond course.

400 Introduction to Pharmacy UGRD 2
A survey of the profession of pharmacy, dealing with its history, educational requirements, organization, regulation, and current developments.
Sp Qtr. 2 cl.

410 Introduction to Medicinal Chemistry UGRD 3
Chemical and biochemical principles governing the design, synthesis and properties of drugs.
Sp Qtr. 3 cl. 1 recitation. Prereq: 462 and Chem 253. Enrollment restricted to students in the BSPS program or with permission of instructor.

411 Medicinal and Natural Products Chemistry Laboratory UGRD 2
Laboratory experiences in the isolation and synthesis of pharmaceutically relevant compounds.
Au Qtr. 2-3 hr labs. Prereq: 410, 462, and Chem 253. Enrollment restricted to students in the BSPS program or with permission of instructor.

420 Pharmacometrics I UGRD 4
Principles of pharmacometrics, the science of dosage form design.
Au Qtr. 2-2 hr cl, 1 recitation. Prereq: Physics 113 or 133, Chem 253, Math 152, Physiol 312 or EEB 232 or Zoology 232. Enrollment restricted to students in the BSPS program or with permission of instructor.

421 Pharmacometrics Laboratory I UGRD 2
An application of basic pharmacometrics principles and methods used to develop and evaluate drug, drug delivery systems and treatment regimens.
Wi Qtr. 1 cl, 1 hr lab. Prereq: 420. Enrollment restricted to students in the BSPS program or with permission of instructor.

425 Drug Discovery and Development UGRD 3
An introduction to research methods used for drug discovery and development with a focus on division faculty research labs.
Sp Qtr. 3 cl. Prereq: Rank 3 or 4 BSPS students, Physics 113 or 133, Chem 253, Math 152, Physiol 312 or EEB 232 or Zoology 232.

461 BiomedicalChemistry I UGRD 3
Fundamentals of biological chemistry for the study of pharmaceutical sciences.
Au Qtr. 3-1 hr cl, 1 recitation. Prereq: Chem 253. Enrollment restricted to students in the BSPS program or with permission of instructor.
Pharmacy

462 Biomedical Chemistry II UGRD 3
Fundamentals of biological chemistry for the study of pharmaceutical sciences.
Wi Qtr. Prereq: 461 and Chem 253. Enrollment restricted to students in the BSPS program or with permission of instructor.

471 Concepts in Pharmacology I: Discovery of Drug UGRD 2
Action
Discussions and presentations on general principles and techniques used in pharmacology research.
Au Qtr. 2 cl. Prereq: Enrollment in College of Pharmacy.

472 Concepts in Pharmacology II: Pharmacology Literature
Discussions and presentations dealing with recently published papers of general interest in the discipline of pharmacology.
Wi Qtr. 2 cl. Prereq: 480.

473 Concepts in Pharmacology III: Therapeutic Frontiers
Discussion of recent developments in one or more areas of pharmacology.
Sp Qtr. 1 2-hr cl. Prereq: Enrollment in College of Pharmacy.

480 Integrated Pharmacology UGRD 3
An overview of pharmacoegological, biochemical, and physiological effects of drugs to facilitate an understanding of drug mechanism and pharmacotherapy.
Wi Qtr. 3 cl. Prereq: 461 or equiv; EECB 232 or Zoology 232 or equiv. Enrollment restricted to students in the BSPS program, exercise science or with permission of instructor.

481 Laboratory Pharmacology UGRD 2
Laboratory experiences in studying the effects of drugs and their mechanisms of action.
Sp Qtr. 1 cl, 1 3-hr lab. Prereq: 480. Enrollment restricted to students in the BSPS program or with permission of instructor.

493 Individual Studies in Pharmaceutical Sciences UGRD 1-12
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.
Su, Au, Wi, Sp Qtrs. Prereq: Rank 2 standing, a cumulative pt/hr ratio of 2.50, and permission of instructor. Repeatable to a maximum of 30 or hrs. This course is graded S/U.

494.01 Group Studies UGRD 1-3
Group studies topics in various fields of Pharmacy.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

494.02 Group Studies UGRD 1-3
Group studies topics in various fields of Pharmacy.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

513 History of Pharmacy: Lecture UGRD 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.
* Au Qtr. 3 cl. Prereq: Rank 3 or permission of instructor.

515 Pharmaceutical Distribution and Health Care Systems UGRD 3
A study of the pharmaceutical distribution system in the United States and its relation to the health care system.
Wi Qtr. 2 cl, 1 hr rec. Prereq: Math 152. Enrollment restricted to students in the BSPS program with at least rank 3 or 4 standing or with instructor’s permission.

601 Biopharmacy I PHP 3
The first in a two-course sequence which provides the fundamental background in modern molecular life science required for pharmacy studies.
Au Qtr. 3 1-hr d, 1 rec. Prereq: First-year standing in Pharm D program.

602 Biopharmacy II PHP 3
The second in a two-course sequence which provides the fundamental background in modern molecular life science for pharmacy studies.
Wi Qtr. 3 1-hr cl. 1 rec. Prereq: First-year standing in Pharm D program.

605 Medicinal Chemistry I PHP 3
An introduction to functional group properties of importance to drugs, heterocycles, acidity and basicity, metabolism, prediction of ionization constants and physicochemical properties of drugs.
Au Qtr. 3 1-hr d. 1 rec. Prereq: First-year standing in Pharm D program.

606 Medicinal Chemistry II PHP 3
Chemical and biochemical principles governing the properties of drugs. Drug categories include: CNS depressants, CNS stimulants, analgesics, and cardiac drugs.
Wi Qtr. 3 1-hr cl. 1 rec. Prereq: First-year standing in Pharm D program.

607 Medicinal Chemistry III PHP 5
Chemical and biochemical principles governing the properties of drugs. Drug categories include: cholesterol, adrenocorticoids, hormones, prostaglandins, analgesics, hypoglycemics, cancer agents, antihistamines, anticoagulants, and radiopharmaceuticals, antiviral and others.
Sp Qtr. Prereq: First-year standing in Pharm D program.

613 Chemical Dependency for Health Care Professionals PHP 1
To prepare healthcare students to recognize, understand, and respond effectively to chemical dependency. Epidemiology, pathophysiology, presentation, consequences, and management of chemical dependency will be characterized.
Wi Qtr. 1 1-hr cl. Prereq: Admission to Pharm D program.

614 Professional Ethics PHP 2
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.
Sp Qtr. 1 2-hr cl. Prereq: Rank 3 or permission of instructor.

616 Medical Applications of Radionuclides and Radiopharmaceuticals UGRD 3
A study of the theoretical and clinical aspects of the preparation, use, control, and handling of radionuclides and radiopharmaceuticals used in medicine.
Au Qtr. 3 cl. Open to non-pharmacy students with instructor’s permission.

617 Introduction to Clinical Pharmacy Research UGRD 2
An introduction to research in clinical pharmacy and to the interpretation of clinical research literature.
Au Qtr. 1 2-hr cl. Prereq: Enrollment in the Pharm D program or enrollment in the BSPS program with completion of Pharmacy 480. This course is graded S/U.

619 Nonprescription Drug Products UGRD 3
Didactic and practical experience in appropriate nonprescription drug product selection, monitoring, and patient information.
Au Qtr. 3 cl. Prereq: Second-year standing in the Pharm D program.

621 Drug Delivery I PHP 3
Principles that govern the design and use of solution dosage forms, including physicochemical properties, ionization, solubility and stability.
Au Qtr. 2 1-hr cl, 1 2-hr workshop. Prereq: First-year standing in Pharm D program.

622 Drug Delivery II PHP 3
Routes of drug administration and the physiologic and physicochemical factors that influence drug penetration, absorption and bioavailability.
Wi Qtr. 2 1-hr cl, 1 2-hr workshop. Prereq: First-year standing in Pharm D program.

623 Drug Delivery III PHP 4
Application of physicochemical principles to the design, formulation, manufacture and use of colloid suspensions, emulsions, solid and topical drug delivery systems.
Sp Qtr. 3 1-hr cl, 1 2-hr workshop. Prereq: First-year standing in Pharm D program.

624 Pharmaceutical Calculations PHP 1
Introduction to prescription terminology and pharmaceutical calculations; emphasis on measurement systems, conversions, percent preparations, units of concentrations, calculation of doses, dilutions, milliequivalents, and millimoles.
Sp Qtr. 3 1-hr cl. Prereq: First-year standing in Pharm D program.

661 Pharmacy Practice I PHP 3
The first in a three-course sequence covering concepts fundamental to pharmacy practice. Topics include orientation to the profession, history, ethics, communications, and jurisprudence.
Au Qtr. 3 1-hr cl, 1 rec. Prereq: First-year standing in Pharm D program.

662 Pharmacy Practice II PHP 3
The second in a three-course sequence covering concepts fundamental to pharmacy practice with a focus on techniques used to evaluate the medical/pharmaceutical literature.
Wi Qtr. 3 1-hr cl. Prereq: First-year standing in Pharm D program.

664 Introductory Pharmacy Practice Experience PHP 1
Introductory experiences in pharmacy practice including hospital pharmacy, community pharmacy and a service learning geriatric rotation. Students also have opportunities to shadow pharmacists and pharmacy students to explore potential career options.
Au, Wi, Sp Qtrs. 4 hrs per week. Prereq: First-year standing in Pharm D program. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

673 Pharmacy Practice Management I PHP 3
The first in a four-course pharmacy practice management sequence. Topics include the US health care and pharmaceutical distribution systems; product research, development and promotion.
Sp Qtr. 2 cl, 1 2-hr rec. Prereq: First-year standing in Pharm D program. Not open to students with credit for T73.

693 Individual Studies in the Pharmaceutical Sciences PHP 1-20
Group studies of selected topics in various fields of pharmacy.
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

695 Seminar in Clinical Pharmacy Career Pathways UGRD 2
Discussion and analysis of career pathways in clinical pharmacy and preparation of a career plan paper.
Au Qtr. 1 2-hr cl. Prereq: Rank 2 in the BSPS or Pharm D program.
705 Pharmacy-Based Cultural Competence in PHP 2

Health Care
A review of issues relating to cultural diversity in health care and techniques to improve pharmacist-patient interactions among those from diverse backgrounds.
Sp Qtr. 1 1-hr weekly cl, 1 1-hr workshop. Prereq: Third-year standing in Pharm D program or permission of instructor. This course is graded S/U.

709 Health Literacy PHP 3

Examines the issues and challenges of low health literacy, including research; development and testing of information in plain language; health communication techniques; and organizational approaches to meet these challenges.
Not open to students with credit for MedColl 710, AlliMed 710, Nursing 710 or ArtsSci 709. Cross-listed with MedColl 710, AlliMed 710, Nursing 710 and ArtsSci 709.

710 Introduction to Clinical Immunology PHP 2

This course is intended to introduce the application of immunology principles to pharmacology, therapeutics and patient care.
Au Qtr. Prereq: Second-year standing in Pharm D program.

711 Dietary Supplements and Herbal Products PHP 2

Students will learn to understand and describe the fundamental principles of dietary supplements and herbal products. They will learn methods of preparation, storage, regulation and standardization with these supplements and products.
Sp Qtr. Prereq: Second-year standing in Pharm D program.

715 Pediatric Pharmacotherapy PHP 2

A review of pediatric pharmacotherapy of selected diseases with pharmaceutical care ramifications in various settings.
Sp Qtr. 1 1-hr cl. Prereq: Third-year standing in Pharm D program.

717 Palliative Care Pharmacotherapy PHP 2

An elective course in pain management and hospice care designed for third-year Pharm D students. Topics address interdisciplinary viewpoints on palliative care.
Wi Qtr. 1 1-hr cl. Prereq: Third-year standing in Pharm D program.

724 Clinical Pharmacogenomics PHP 3

Principles and techniques necessary to understand the role of genetic variation in the pharmacokinetics of drugs and therapeutic management of disease.
Wi Qtr. 2 1.5-hr cl. Prereq: Third-year standing in Pharm D program.

731 Clinical Pharmacokinetics I PHP 4

The first in a three-course sequence in clinical pharmacokinetics and pharmacodynamics and their application to pharmacotherapy.
Au Qtr. 3 cl, 1 1-hr workshop. Prereq: Second-year standing in Pharm D program.

732 Clinical Pharmacokinetics II PHP 4

The second in a three-course sequence in clinical pharmacokinetics and pharmacodynamics and their application to pharmacotherapy.
Wi Qtr. 3 cl, 1 1-hr workshop. Prereq: Second-year standing in Pharm D program.

733 Clinical Pharmacokinetics III PHP 3

The third in a three-course sequence in clinical pharmacokinetics and pharmacodynamics and their application to pharmacotherapy.
Sp Qtr. 2 cl, 1 1-hr workshop. Prereq: Second-year standing in Pharm D program.

735 Drug Discovery and Drug Design PHP 3

A study of the discovery and design of new drugs; topics include natural products isolation, molecular modeling, molecular targets, and biosynthesis and metabolism.
Sp Qtr. 3 cl. Prereq: Permission of instructor.

737 Advanced Pharmaceutical Analysis GRAD 5

The use of NMR in the assay and control methods of drug and drug preparations.
Su Term 2 cl, 1 1-hr lab. Prereq: Permission of instructor. This course is graded S/U.

474 Pharmacology I PHP 3

The first in a six-course sequence providing a comprehensive study of the therapeutic effects, pharmacodynamics, mechanistic actions, and toxicological effects of important drug classes.
Au Qtr. 3 cl. Prereq: Second-year standing in Pharm D program.

478 Pharmacology II PHP 3

The second in a six-course sequence providing a comprehensive study of the therapeutic effects, pharmacodynamics, mechanistic actions, and toxicological effects of important drug classes.
Wi Qtr. 3 cl. Prereq: Second-year standing in Pharm D program.

479 Pharmacology III PHP 3

The third in a six-course sequence providing a comprehensive study of the therapeutic effects, pharmacodynamics, mechanistic actions, and toxicological effects of important drug classes.
Sp Qtr. 3 cl. Prereq: Second-year standing in Pharm D program.

500 Pharmacology IV PHP 3

The fourth in a six-course sequence providing a comprehensive study of the therapeutic effects, pharmacodynamics, mechanistic actions, and toxicological effects of important drug classes.
Au Qtr. 2 1.5-hr cl. Prereq: Third-year standing in Pharm D program.

510 Pharmacology V PHP 3

The fifth in a six-course sequence providing a comprehensive study of the therapeutic effects, pharmacodynamics, mechanistic actions, and toxicological effects of important drug classes.
Wi Qtr. 2 1.5-hr cl. Prereq: Third-year standing in Pharm D program.

520 Pharmacology VI PHP 3

The sixth in a six-course sequence providing a comprehensive study of the therapeutic effects, pharmacodynamics, mechanistic actions, and toxicological effects of important drug classes.
Sp Qtr. 2 1.5-hr cl. Prereq: Third-year standing in Pharm D program.

760 Geriatrics-Pharmacological Care PHP 2

Increases the student's knowledge of geriatric pharmacotherapy and pertinent issues in geriatric health care.
Sp Qtr. Prereq: Third year student in PharmD program or permission of instructor.

761 Success and Leadership in Pharmacy PHP 2

Explore the meaning of success and leadership, attributes of successful leaders and what can be done to be a successful leader.
Sp Qtr. Prereq: Enrolled in the College of Pharmacy or permission of instructor. This course is graded S/U.

762 Topics in Emergency Medicine Pharmacotherapy PHP 2

Selected topics in Emergency Medicine Practice and Pharmacotherapy. Lecture, in addition to the participation in round-table discussion with active participation.
Prereq: Third year standing in PharmD program or permission of instructor. This course is graded S/U.

763 Nonprescription Therapeutics PHP 3

An overview of non prescription therapeutics with a focus on patient assessment, product recommendations and patient care plans.
Au Qtr. 2 1.5-hr cl, 1 1-hr workshop. Prereq: Third-year standing in Pharm D program. Not open to students with credit for 663.

774 Professional Practice Laboratory I PHP 3

The first in a three-course professional practice laboratory sequence. Topics include preparation/dispensing of various dosage forms, extemporaneous compounding, and use of instruments and references.
Au Qtr. 2 cl, 1 1-hr lab. Prereq: Second-year standing in Pharm D program.

775 Professional Practice Laboratory II PHP 3

The second in a three-course professional practice laboratory sequence. Topics include preparation/dispensing of various dosage forms, extemporaneous compounding, and use of instruments and references.
Sp Qtr. 2 cl, 1 1-hr lab. Prereq: Second-year standing in Pharm D program.

776 Professional Practice Laboratory III PHP 3

The third in a three-course professional practice laboratory sequence. Topics include preparation/dispensing of various dosage forms, extemporaneous compounding, and use of instruments and references.
Sp Qtr. 2 cl, 1 1-hr lab. Prereq: Second-year standing in Pharm D program.

777 Pathophysiology and Therapeutics I PHP 5

The first in a six-course sequence in pathophysiology and pharmacotherapy. Development of patient assessment and problem solving skills to construct therapeutic plans.
Au Qtr. 3 cl, 1 2-hr workshops. Prereq: Second-year standing in Pharm D program.

778 Pathophysiology and Therapeutics II PHP 4

The second in a six-course sequence in pathophysiology and pharmacotherapy. Cardiovascular and renal disorders.
Wi Qtr. 3 cl, 1 1-hr case conference. Prereq: Second-year standing in Pharm D program.

779 Pathophysiology and Therapeutics III PHP 4

The third in a six-course sequence in pathophysiology and pharmacotherapy. Psychiatric and other central nervous system disorders.
Sp Qtr. 3 cl, 1 1-hr case conference. Prereq: Second-year standing in Pharm D program.

780 Pathophysiology and Therapeutics IV PHP 4

The fourth in a six-course sequence in pathophysiology and pharmacotherapy. Endocrine, hematologic, obstetric/gynecologic, geriatric, women's health and respiratory disorders.
Au Qtr. 2 1.5-hr cl, 1 1-hr case conference. Prereq: Third-year standing in Pharm D program.

781 Pathophysiology and Therapeutics V PHP 4

The fifth in a six-course sequence in pathophysiology and pharmacotherapy. Infectious diseases, immunologic, and bone and joint disorders.
Wi Qtr. 2 1.5-hr cl, 1 1-hr case conference. Prereq: Third-year standing in Pharm D program.

782 Pathophysiology and Therapeutics VI PHP 5

The sixth in a six-course sequence in pathophysiology and pharmacotherapy. Oncologic, fluid and electrolyte, gastrointestinal, and multi-system disorders.
Sp Qtr. 2 1.5-hr cl, 1 1-hr case conference. Prereq: Third-year standing in Pharm D program.

783 Community Pharmacy Practice Management PHP 2

Focus on the development of a practice management plan for the implementation of innovative community pharmacy services that optimize patient care.
Wi Qtr. 2 1-hr cl. Prereq: Second-year standing in Pharm D program. This course is graded S/U.

784 Intermediate Pharmacy Practice Experience PHP 1

Intermediate experience in pharmacy practice including ambulatory, institutional and elective settings.
Au, Wi, Sp Qtrs. 4 hrs per week. Prereq: Third-year standing in Pharm D program. Repeatable to a maximum of 3 or hrs. This course is graded S/U.

Pharmacy 347
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785 Introduction to Complementary and Alternative Medicine PHP 2
Overview of various complementary and alternative medicine modalities and the role of the health care profession in integrated care.
Prereq: Second-year standing in the Pharm D program.

786 Pharmacy Practice Management II PHP 3
The medication use system and resource management.
Au Qtr. 2 1.5-hr cl. Prereq: Third-year standing in Pharm D program.

788 Pharmacy Practice Management III PHP 3
The economic evaluation of pharmaceutical services and pharmacoepidemiology.
Sp Qtr. 2 1.5-hr cl. Prereq: Third-year standing in Pharm D program.

789 Isolation Techniques in Research PHP 5
A study and application of selected isolation techniques for the purification of natural products or other organic mixtures.
Sp Qtr. 3 cl 2-hr lab. Prereq: Chem 253 and 244 or 246 or 255, or equiv, or permission of instructor.

790 Pharmaceutical Jurisprudence PHP 3
A study of the laws and regulations relating to the practice of pharmacy.
Sp Qtr. 2 1.5-hr cl. Prereq: Third-year standing in Pharm D program.

794 Group Studies in Clinical Pharmacy PHP 1-18
Group Studies in Clinical Pharmacy.
Prereq: Admission to Pharm D program. Repeatable to a maximum of 50 cr hrs.

799.01 Practice Experience I PHP 10
Advanced pharmacy practice experience rotations 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. First required advanced practice rotation. A 2 month rotation.
Prereq: Fourth-year standing in Pharm D program and adult CPR certification. This course is graded S/U.

799.02 Practice Experience II PHP 10
Advanced pharmacy practice experience rotations 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. Second required advanced practice rotation. A 2 month rotation.
Prereq: Fourth-year standing in Pharm D program and adult CPR certification. This course is graded S/U.

799.03 Practice Experience III PHP 5
Advanced pharmacy practice experience rotations 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. Third required advanced practice rotation. A 1 month rotation.
Prereq: Fourth-year standing in Pharm D program and adult CPR certification. This course is graded S/U.

799.04 Practice Experience IV PHP 5
Advanced pharmacy practice experience rotations 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. Fourth required advanced practice rotation. A 1 month rotation.
Prereq: Fourth-year standing in Pharm D program and adult CPR certification. This course is graded S/U.

799.05 Practice Experience V PHP 5
Advanced pharmacy practice experience rotations 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. Fifth required advanced practice rotation. A 1 month rotation.
Prereq: Fourth-year standing in Pharm D program and adult CPR certification. This course is graded S/U.

799.06 Practice Experience VI PHP 5
Advanced pharmacy practice experience rotations 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. Sixth required advanced practice rotation. A 1 month rotation.
Prereq: Fourth-year standing in Pharm D program and adult CPR certification. This course is graded S/U.

799.07 Practice Experience VII PHP 5
Advanced pharmacy practice experience rotations 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. Seventh required advanced practice rotation. A 1 month rotation.
Prereq: Fourth-year standing in Pharm D program and adult CPR certification. This course is graded S/U.

799.08 Practice Experience VIII PHP 5
Advanced pharmacy practice experience rotations 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. Optional/additional advance practice rotation.
Prereq: Fourth-year standing in Pharm D program and adult CPR certification. This course is Progress (‘P’ grade).

800.01 Principles of Radioisotope Tracer Techniques GRAD 3
A survey of properties of radioisotopes and radiation, instrumentation used for detection of radioisotopes, and radioisotope tracer methods and applications to biomedical sciences.
Au Qtr. 3 cl. Prereq: Permission of instructor.

800.02 Laboratory in Radioisotope Tracer Techniques GRAD 2
Laboratory applications of radioisotope tracer methodology in biomedical sciences and operations of instruments used for detection of radioisotopes.
* Au Qtr. 2 3-hr labs. Prereq: Permission of instructor. Concur: 800.01.

801 Biomedical Proteomics and Mass Spectrometry GRAD 3
Presentation of some basic principles and techniques used in pharmaceutical research and product development: drug stabilization, solubilization, complexation, and macromolecule interactions.
* Wi Qtr. 3 cl. Prereq: 506 or equiv with written permission of instructor. Offered alternate years.

802 Pharmacokinetics GRAD 4
The analysis of the absorption, distribution, and elimination of drugs, and the mathematical characterization of these processes, with emphasis on theory and application.
* Wi Qtr. 2 2-hr cl. Prereq: Math 152 or equiv with written permission of instructor. Offered alternate years.

803 Disposition of Xenobiotics GRAD 3
Principles and practical considerations in the study of xenobiotic pharmacokinetics and metabolism; current research approaches and techniques.
* Sp Qtr. Arr. Offered alternate years.

804 Drug Transport GRAD 3
Theories and experimental approaches for the characterization of drug transport in biological and pharmaceutical systems.
* Au Qtr. 3 cl. Offered alternate years.

805 Controlled Drug Delivery GRAD 3
Principles of the controlled release of drugs from polymer systems. Physical-chemical and engineering approaches are used to evaluate systems from experimental and theoretical viewpoints.
* Au Qtr. 2 1.5-hr cl. Arr. Repeatable to a maximum of 6 cr hrs. Offered alternate years.

806.01 Principles of Advanced Bioanalysis GRAD 4
Theory and practice of quantitative pharmaceutical and bioanalytical analysis in biological samples with emphasis on modern methods.
* Sp Qtr. 2 1.5-hr cl. Prereq: Chem 253, 531, 532, Biochem 721.01, 721.02. Offered alternate years.

806.02 Laboratory in Advanced Bioanalysis GRAD 2
Theory and practice of quantitative pharmaceutical and bioanalytical analysis in biological samples with emphasis on modern methods: Laboratory applications of pharmaceutical and bioanalytical methods.
* Sp Qtr. Arr lab. Prereq or conc. 806.01 and permission of instructor. Offered alternate years.

807 Drug Equilibria in Biological Systems GRAD 3
In depth evaluation of the current literature of methods and techniques of evaluating drug interactions with blood components and receptors.
* Sp Qtr. 2 1.5-hr cl. Offered alternate years.

808 Pharmacokinetic-Pharmacodynamic Models GRAD 3
Mathematical models and experimental approaches for characterization of the time course of drug effects.
* Sp Qtr. 2 1.5-hr cl. Prereq: 802. Offered alternate years, starting Wi 01.

809 Design and Evaluation of Drug Delivery Systems GRAD 3
Physical pharmacy and biopharmaceutical principles will be applied to the design, fabrication and evaluation of complex contemporary and advanced drug delivery systems.
Au Qtr. Prereq: Grad standing or permission of Instructor. Offered alternate years.

816 Medication Use System Management GRAD 4
Understanding the medication use system, principles of operations improvement and strategies for improving medication use systems.
Au Qtr. 2 2-hr workshops.
817 Pharmacy Management Systems GRAD 4
Administrative and professional principles and concepts of, and trends affecting pharmacy and health care.
Sp Qtr. 2-1 hr cl, 1-2 hr cl. Prereq: 816.

821 Research Methods and Literature Evaluation GRAD 4
Investigation of the research principles and methods involved in planning, analysis, and interpretation of studies and projects in pharmacy practice.
Wi Qtr. 2-2 hr cl.

824 Economic Evaluation of Health Care Programs GRAD 4 and Services
Overview and appraisal of the state-of-the-art in the evaluation of health care programs and services.
Sp Qtr. 2-2 hr cl. Cross-listed in Health Services Management and Policy.

825 Drug Distribution and Public Policy GRAD 4
Investigation of pharmaceutical markets with an emphasis on drug distribution and public policies affecting pharmaceutical firms.
Wi Qtr. 2-2 hr cl.

826 Advanced Topics in Pharmaceutical Administration GRAD 2
Investigation and analysis of selected topics in pharmaceutical administration.

827 Pharmaceutical and Health Care Outcomes Evaluation GRAD 4
Introduction to measurement and evaluation issues associated with patient-centered pharmaceutical outcomes and quality of care studies with focus on application of measurements.
Sp Qtr. 2-2 hr cl. Prereq: Grad standing. Encouraged to complete or concurrently take courses in Pharmacy Mgmt or Biostatistics.

828 Pharmaceutical Health Services Research GRAD 4
Doctoral-level seminar on concepts, methods, and problem areas addressed by pharmaceutical health services research as a field of inquiry.
Wi Qtr. 2-2 hr cl. Prereq: Doctoral student in pharmacy or public health. Faculty members, post-docs, and fellows are welcome. Not open to PharmD and BSPS students. Seminar-type format, emphasizing student presentations and discussion related to development/critique of research proposals.

832 Biomedical Chemistry for Graduate Students GRAD 4
The purpose of this course is to satisfy the second quarter graduate biochemistry requirement for graduate students in the division of medicinal chemistry and pharmacognosy.
Wi Qtr. Prereq: 601 or Biochem 613.

835 Advanced Medicinal Chemistry GRAD 3
Selected topics on the chemistry of drug design and discovery: the subject matter drawn from the current literature on chemical and structural aspects of medicinal chemistry.
Au Qtr. 3 cl. Prereq: Chem 833 or permission of instructor.

836 Advanced Medicinal Chemistry GRAD 3
Selected topics in medicinal chemistry, the subject matter being drawn from the current literature.
Wi Qtr. 3 cl. Prereq: Chem 833 or permission of instructor.

837 Chemotherapy of Infectious Diseases GRAD 3
Discovery, development, and mechanisms of action of drugs used to treat bacterial, fungal, viral, and parasitic infections.
Au Qtr. 3 cl. Prereq: Grad standing and permission of instructor.

850.01 Seminar: Presentation GRAD 1
Presentation of oral and written reports dealing with recent advances in the pharmaceutical sciences.
Repeatable to a maximum of 30 cr hrs.

850.02 Seminar: Participation GRAD 1
Participation in round-table discussion, oral, and written reports dealing with recent advances in the pharmaceutical sciences.
Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

851 Advanced Pharmacognosy GRAD 3
A study of research involving biosynthesis of plant constituents of pharmaceutical interest.
Sp Qtr. 3 cl. Prereq: Biochem 707 or Botany 631 or permission of instructor.

852 Introduction to Pharmaceutical Sciences GRAD 2
Introduction to pharmaceutical sciences, the profession of pharmacy, the College of Pharmacy and responsible research practices.
Au Qtr. Prereq: Grad student in Pharmacy.

870 Molecular Pharmacology of Drug-Receptor Interactions GRAD 3
Integrates mathematical, biochemical, and molecular biological approaches in an effort to achieve a general appreciation of the mechanisms and signaling pathways by which drug-receptor interactions ultimately lead to therapeutic effects.
Wi Qtr. 3 cl. Prereq: Math 152 or equiv and an introductory course in pharmacology; or permission of instructor.

871 Experimental Methods in Pharmacology GRAD 4
Qualitative and quantitative pharmacology covering the standard laboratory methods used in the screening and evaluation of drugs.
Wi Qtr. 1-2 hr cl, 1-6 hr lab. Prereq: 870 or equiv, and permission of instructor.

872 Advanced Methods in Pharmacology GRAD 3
Theory and practical application of specialized pharmacological approaches used for the elucidation of mechanisms of drug action.
Sp Qtr. 1 cl, 2-3 hr lab. Prereq: 871 and permission of instructor.

873 Contemporary Pharmacology GRAD 1
Analysis and discussion of current pharmaceutical research.
Au, Wi, Sp Qtrs. Repeatable to a maximum of 12 cr hrs.

874 History of Pharmacology and Drug Discovery GRAD 3
Critical review of global, historical, landmark developments of pharmacological sciences, associated contributors and its current therapeutic implications.
Au, Sp Qtrs. 3 cl. Prereq: Grad students and 3rd and 4th yr Pharm D students. Must have background courses in medicinal chemistry, biochemistry, physiology, and pharmacology.

884 Field Experiences in Pharmaceutical Administration GRAD 6
Supervised practicum in an administrative setting within the pharmaceutical industry.
Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 25 cr hrs of course work in pharmacy administration and enrollment in pharmacy administration specialization. This course is graded S/U.

894 Group Studies in Pharmaceutical Sciences GRAD 1-5
Group studies of selected topics in various fields of the pharmaceutical sciences.
^ Su, Au, Wi, Sp Qtrs. 1-5 cl, opt lab. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

970 Supervised Project in Health-System Pharmacy Administration GRAD 3
Investigation of a major project facing health-system pharmacy administration.
Su, Au, Wi, Sp Qtrs. Independent project. Prereq: 2nd yr standing in hospital pharmacy specialization. Required of all students specializing in hospital pharmacy; must be taken each yr of 2nd yr. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

993.01 Individual Studies in Pharmaceutical Administration: Pharmacological Sciences GRAD 1-20
Individual investigation of problems in Pharmaceutical Administration.
Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

993.02 Individual Studies in Pharmaceutical Administration: Medicinal Chemistry and Pharmacognosy GRAD 1-20
Individual investigation of problems in Medicinal Chemistry and Pharmacognosy.
Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

993.03 Individual Studies in Pharmaceutical Administration: Pharmaceutics and Pharmaceutical Chemistry GRAD 1-20
Individual investigation of problems in Pharmaceutics and Pharmaceutical Chemistry.
Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

993.04 Individual Studies in Pharmaceutical Administration: Pharmacology GRAD 1-20
Individual investigation of problems in Pharmacology.
Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

999 Research in the Pharmaceutical Sciences GRAD 1-18
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. Arr. Repeatable. This course is graded S/U.

Philosophy

101 Introduction to Philosophy UGRD 5
Examination of major problems, such as the nature of reality, knowledge, truth, morality, and the relation of philosophy to science and religion. 101H (honors) may be available. GEC arts and hums cultures and ideas course.

111H Mind and Its Place in Nature: Western Conceptions of the Self from Antiquity to the Present: Part UGRD 5
Focuses on how changing conceptions of human self-understanding have affected developments in the sociopolitical, cultural, and economic realms, and vice-versa, close of the classical world to the modern age.
5 cl. Prereq: Honors standing or permission of instructor. GEC social diversity - international issues (Western) and historical survey course.
350 Philosophy

112H Mind and Its Place in Nature: Western Conceptions of the Self from Antiquity to the Present: Part
UGRD 5
Focuses on how changing conceptions of human self-understanding have developed in the sociopolitical, cultural, and economic realms, and vice-versa; the modern age to the 21st century. 5 cr. Prereq: 111H. GEC social diversity - international issues (Western) and historical survey course.

130 Introduction to Ethics
UGRD 5
The nature of right and wrong; good and evil; the grounds of moral choice and decision; the resolution of moral conflicts. 130H (honors) may be available. GEC arts and hums cultures and ideas course.

131.01 Ethics in the Professions: Introduction to Engineering Ethics
UGRD 5
An examination of contemporary issues in engineering ethics in the context of major ethical theories. Not open to students with credit for 130 or any other 131 course. GEC arts and hums cultures and ideas course.

150 Introduction to Logic
UGRD 5
Deduction and induction; principles of clear statement and valid reasoning; fallacies; and the methods by which theories and laws are established. Prereq: Math 075 or equiv. GEC math and logical analysis course.

151 Introduction to Logic and Legal Reasoning
UGRD 5
An informal introduction to elementary deductive and inductive logic, concentrating on application to reasoning in legal contexts (e.g., courtroom argumentation and jury deliberation). Au, Wi, Sp Qtrrs. Prereq: Math 075 or equiv. Not open to students with credit for 150. GEC math and logical analysis course.

153 Probability, Data, and Decision Making
UGRD 5
How to make rational decisions when confronted by uncertainty; foundational issues and techniques pertaining to probability, selection of utilities and analysis of data relevant to decision making. Prereq: Mathematics Placement Level L, M, N, or P; or Math 104. GEC data analysis course.

170 Science and Religion
UGRD 5
A philosophical examination of the relationship between science and religion, concentration on issues regarding the creation of the universe and the origins of life. 2 2-hr cl. Cross-listed in Comparative Studies. GEC arts and hums cultures and ideas course.

215 Asian Philosophies
UGRD 5
A survey including at least three of the following major philosophical systems of Asia: Hinduism, Buddhism, Jainism, Zoroastrianism, Taoism, and Confucianism. GEC arts and hums lit and social diversity - international issues (Global) course.

230 Political and Social Philosophy
UGRD 5
Philosophical bases of social and political institutions and practices; analysis of such fundamental conceptions as justice, equality, political obligation, and civil disobedience. Prereq: English 110 or 111 or equiv. GEC arts and hums cultures and ideas course.

240 Philosophical Problems in the Arts
UGRD 5
An introduction to major philosophical issues in the arts; examination of artistic intention, representation vs. abstraction, the grounds and objectives of art criticism, and the import of cultural differences in light of their application to specific works in the various arts. 240H (honors) may be available. GEC arts and hums VPA course.

242H Honors Philosophy of Film
UGRD 5
An introduction to philosophical and aesthetic issues involved with film as an art and as an expressive medium. Sp Qtr: 2 2-hr cl, arr viewing time. Prereq: Enrollment in an honors program or permission of instructor. GEC arts and hums VPA course.

250 Symbolic Logic
UGRD 5
A formal presentation of the elements of modern deductive logic; decision and proof procedures in sentential logic and functional logic. GEC math and logical analysis course.

270 Introduction to Philosophy of Religion
UGRD 5
A philosophical analysis of the nature of religion and the foundations of religious belief. GEC arts and hums cultures and ideas course.

276H Freshman-Sophomore Seminar
UGRD 5
Topic varies; emphasis on current philosophical problems. Prereq: Fr or soph standing, and either a 3.00 CPHR, enrollment in an honors program, or permission of instructor. Not open to students with credit for 276H. Repeatable to a maximum of 15 or hrs.

280 Metaphysics, Religion, and Magic in the Scientific Revolution
UGRD 5
A philosophical examination and critical exploration of the interconnection between the natural scientific, religious and magical traditions in the emergence of the Scientific Revolution. Au, Wi, Sp Qtr. GEC historical survey course.

294 Group Studies
UGRD 1-5
Groups of students are given an opportunity to pursue special topics not otherwise offered. Repeatable to a maximum of 15 or hrs.

301 History of Ancient Philosophy
UGRD 5
Major figures and issues in Greek philosophy; presocratics, Socrates, Plato, Aristotle. Prereq: 5 cr hrs of philos other than 150 or permission of instructor. GEC arts and hums lit and social diversity - international issues (Western) course.

302 History of Medieval Philosophy
UGRD 5
Major figures in medieval philosophy, including Augustine, Aquinas, Duns Scotus, and Ockham. Prereq: 5 cr hrs of Philos other than 150 or permission of instructor. GEC arts and hums lit and social diversity - international issues (Western) course.

303 History of 17th-Century Philosophy
UGRD 5
Major figures in early modern philosophy: Descartes, Hobbes, Spinoza, Locke, and Berkeley. Prereq: 5 cr hrs of Philos other than 150 or permission of instructor. GEC arts and hums lit and social diversity - international issues (Western) course.

304 History of 18th-Century Philosophy
UGRD 5
Major figures in European philosophy in the 17th and 18th centuries. Prereq: 5 cr hrs of Philos other than 150 or permission of instructor. Background in 303 strongly recommended. GEC arts and hums lit and social diversity - international issues (Western) course.

305 History of 19th-Century Philosophy
UGRD 5
Major figures in 19th-century German idealism. Prereq: 5 cr hrs of Philos other than 150 or permission of instructor. GEC arts and hums lit and social diversity - international issues (Western) course.

306 Fundamental Concepts of Existentialism
UGRD 5
Key concepts of the movement: commitment, absurdity, freedom, and death, as expressed in the works of Nietzsche, Sartre, Camus, Kierkegaard and others. Prereq: 5 cr hrs of Philos other than 150, or permission of instructor. GEC arts and hums lit and social diversity - international issues (Western) course.

317 Contemporary Continental Thought
UGRD 5
Examination of contemporary continental thought including such movements as: structuralism, hermeneutics, critical theory, poststructuralism, semiotics, deconstruction, and postmodernism. Prereq: 5 cr hrs of Philos other than 150 or permission of instructor. GEC arts and hums lit and social diversity - international issues (Western) course.

318 Introduction to Jewish Philosophy
UGRD 5
A general introduction to major figures and trends in medieval, modern, and contemporary Jewish philosophy; emphasis on Philo, Saadia, Maimonides, Spinoza, Mendelssohn, and Buber.

323 Judaism and Ethics
UGRD 5
Examination of the relationships of ethics to religion in general and Judaism in particular, emphasizing the place of ethical reasoning within Judaism as a religious system.

337 Philosophical Perspectives on Issues of Gender
UGRD 5
An examination of metaphysical, epistemological and ethical issues surrounding sex and gender, with issues chosen to represent both theoretical and practical controversies. Prereq: English 110. GEC arts and hums cultures and ideas and social diversity in the US course.

338 Philosophical Problems in the Law
UGRD 5
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.

371 Contemporary Social and Moral Problems in the U.S.
UGRD 5
An intensive writing course concentrating on the analysis and evaluation of philosophical argumentation concerning contemporary social and moral problems about race, gender, class, and ethnicity. Prereq: English 110 or 111 or equiv; and soph standing. Cannot be counted on a philosophy major or minor program. GEC second writing and social diversity in the US course.

431 Moral Philosophy
UGRD 5
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 judgement. Prereq: Philos major, or 15 cr hrs of Philos course work exclusive of 150, or permission of instructor.

450 Philosophy of Logic
UGRD 5
A rigorous introduction to formal logical systems. GEC arts and hums cultures and ideas course. Prereq: 301, 302, or 305 or equiv. GEC arts and hums courses and ideas and social diversity in the US course.

451 Philosophy of Science
UGRD 5
A rigorous introduction to the philosophy of science. Prereq: 301, 302, or 305 or equiv. GEC arts and hums courses and ideas and social diversity in the US course.

458 An Introduction to the Philosophy of Biology
UGRD 5
A survey of philosophical questions regarding the theoretical foundations and implications of research in biology. Prereq: 301, 302, or 305 or equiv. GEC arts and hums courses and ideas and social diversity in the US course.
460 Introduction to Theory of Knowledge UGRD 5
Survey of main philosophical positions concerning knowledge, justification, skepticism, and rationality.
Prereq: Philos major, or 15 cr hrs of Philos course work exclusive of 150, or permission of instructor.

463 Introduction to Metaphysics UGRD 5
Survey of main philosophical positions concerning the nature of reality, persons, freedom, identity, and causation.
Prereq: Philos major, or 15 cr hrs of Philos course work exclusive of 150, or permission of instructor.

465 Philosophy of Action UGRD 5
Philosophical examination of the nature of human action. Topics include the nature of intention, practical rationality, issues in moral philosophy, the metaphysics of free will.
Au, Wi, Sp Qtr. Prereq: Philos major, or 15 cr hrs of Philos course work exclusive of 150 or permission of instructor.

467 Introduction to Philosophy of Mind UGRD 5
Introduction to the philosophy of mind, the mind-body problem, intentionality, and the nature of consciousness.
Prereq: Philos major, or 15 cr hrs of Philos course work exclusive of 150, or permission of instructor.

468 Philosophy of Perception UGRD 5
A philosophical examination of the nature of sensory perception, its relationship to conceptual thought and to consciousness, and its role in action and knowledge acquisition.
Sp Qtr. Prereq: Philos major, or 15 cr hrs of Philos course work exclusive of 150, or permission of instructor.

473 Introduction to Philosophy of Language UGRD 5
Survey of philosophical issues regarding the nature of linguistic representation and its role in thought and communication.
Prereq: 250 and 10 or hrs of Philos course work exclusive of 150, or permission of instructor.

521 Topics in Jewish Philosophy UGRD 5
An intensive examination of major philosophical problems: categories, universals, substance, methods, limits, types, and validity of knowledge.
Prereq: 304 and 10 cr hrs of Philos course work at the 200 level or above; or grad standing in Philos; or permission of instructor.

533 Environmental Ethics UGRD 5
Examination of the moral issues generated by the impact of human beings on the natural environment.
Prereq: 130 or 431, or permission of instructor.

580H Ethical Conflicts in Health Care Research, Policy, and Practice UGRD 5
An interdisciplinary approach to an analysis of central moral dilemmas in health care research, policy, and practice.
Prereq: Jr or sr standing. Not open to students with credit for Nursing 580H. Cross-listed in Nursing.

595 Theorizing Race UGRD 5
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.
Sp Qtr. Prereq: GEC second writing course or Philos 230 or jr level or above class standing or permission of instructor. Not open to students with credit for AfrAmASt 595. Cross-listed in African-American and African Studies.

601.01 Ancient Philosophy: Plato UGRD 5
An intensive examination of one or more Platonic dialogues.
Prereq: 301 or 10 cr hrs of Philos at the 200 level; or above; or grad standing in Philos; or permission of instructor.

601.02 Ancient Philosophy: Aristotle UGRD 5
A survey of central philosophical themes in one or more Aristotelian treatises.
Prereq: 301 or 10 cr hrs of Philos at the 200 level; or above; or grad standing in Philos; or permission of instructor.

601.03 Ancient Philosophy: Studies in Ancient Philosophy UGRD 5
Variable content; special topics in ancient Greek philosophy, including value theory, logic, metaphysics and natural science in pre-Socrates Socrates, Plato, Aristotile the Hellenistic schools or neo-Platonism.
Prereq: 301 or 10 cr hrs of Philos at the 200 level; or above; or grad standing in Philos; or permission of instructor. Repeatable to a maximum of 10 cr hrs.

602 Studies in Medieval Philosophy UGRD 5
An intensive examination of a major philosopher, school or philosophical problem of the medieval period; topics vary.
Prereq: 302 and 10 hr hrs of Philos course work at the 200 level or above; or grad standing in Philos; or permission of instructor. Repeatable to a maximum of 10 cr hrs.

603 Studies in 17th-Century Philosophy UGRD 5
An intensive examination of a major philosopher or philosophical problem of the rationalist period; topics vary from quarter to quarter.
Prereq: 303 and 10 cr hrs of Philos course work at the 200 level or above; or grad standing in Philos; or written of instructor. Repeatable to a maximum of 15 cr hrs.

604.01 Studies in 18th Century Philosophy: Kant UGRD 5
An intensive examination of one or more important themes in Kant's philosophical writings.
Prereq: 303, or 304, and 10 cr hrs of Philos course work at the 200 level or above; or grad standing in Philos; or permission of instructor.

604.02 Studies in 18th Century Philosophy: Selected Problems or Topics UGRD 5
An intensive examination of a major philosopher or philosophical problem of the period; topics vary from quarter to quarter.
Prereq: 304 and 10 cr hrs of Philos course work at the 200 level or above or grad standing in Philos or permission of instructor. Repeatable to a maximum of 15 cr hrs.

605 Studies in 20th-Century Philosophy UGRD 5
An intensive examination of one or more central movement in 20th-century philosophy; topics vary.
Prereq: 15 cr hrs of Philos course work at the 200 level or above, or grad standing in Philos or permission of instructor. Repeatable to a maximum of 15 cr hrs.

612 Introduction to Cognitive Science UGRD 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 or a total of 12 cr hrs from at least two of the following areas: CptrInf, Linguist, Philos, and Psych. Not open to students with credit for CptrInf 612, Linguist 612, or Psych 612 or 794 (Sp Qtr 1989) or 794A (Wt Qtr 1990). Cross-listed in Computer and Information Science, Linguistics, and Psychology.

620 Advanced Philosophy of Cognitive Science UGRD 5
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: 467 or permission of instructor.

625 Philosophical Topics in Feminist Theory UGRD 5
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: 10 cr hrs of Philos course work at the 300 level or above; or grad standing; or permission of instructor. Repeatable to a maximum of 10 cr hrs.

630 Advanced Political and Social Philosophy UGRD 5
An intensive examination of issues in political and social philosophy, including democracy, civil disobedience, anarchism, totalitarianism, nature of the state, etc.
Prereq: 230 and 10 cr hrs of Philos course work at the 200 level or above; or grad standing in Philos; or permission of instructor, and English 110 or 111 or equiv.

631 Advanced Moral Philosophy UGRD 5
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: 431 and 10 cr hrs of Philos course work at the 200 level or above or grad standing in Philos or permission of instructor.

638 Advanced Philosophy of Law UGRD 5
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: 338 and 10 cr hrs of Philos course work at the 200 level or above; or grad standing; or equiv or permission of instructor.

640 Advanced Aesthetic Theory UGRD 5
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: 15 cr hrs of Philos course work at 200 level or above; grad standing in Philos; or permission of instructor. Not open to students with credit for 641.

650 Advanced Symbolic Logic UGRD 5
An 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: 250.

652 Nonclassical Logic UGRD 5
Study of selected systems of nonclassical logic, such as entailment systems, modal, many-valued, epistemic, deontic, imperative, erotic, tense, and free logics.
Prereq: 550. Repeatable to a maximum of 10 cr hrs.

655 Advanced Philosophy of Science UGRD 5
A study of the nature and structure of scientific concepts, laws, and theories; appraisal of methodologies, presuppositions, and frames of reference in science.
Prereq: 250 and 10 cr hrs of Philos course work at the 300 level or above (preferably 455); or 250 and grad standing in Philos; or permission of instructor.

660 Advanced Theory of Knowledge UGRD 5
An intensive examination of major epistemological problems: the possibility, origin, foundation, structure, methods, limits, types, and validity of knowledge.
Prereq: 250 and 10 cr hrs of Philos course work at the 300 level or above (preferably 460); or grad standing; or permission of instructor.

663 Advanced Metaphysics UGRD 5
An intensive examination of major metaphysical problems: categories, universals, substance and process, causality and law, space and time, metaphysical presuppositions of knowledge.
Prereq: 250 or 10 cr hrs of Philos course work at the 300 level or above (preferably 463); or grad standing; or permission of instructor.
352 Philosophy

667 Advanced Philosophy of Mind UGRD 5
Classical and contemporary approaches to the nature of mind, mind-body, other minds, intentionality, and other problems.
Prereq: 15 cr hrs of Philos course work at the 300 level or above (preferably 467); or grad standing in Philos; or permission of instructor. Not open to students with credit for 767.

670 Philosophy of Religion UGRD 5
A study of religious concepts and problems; the idea and nature of God, of humans, their relation to the world and human destiny.
Prereq: 10 cr hrs of Philos course work at the 300 level or above; or grad standing; or permission of instructor.

673 Advanced Philosophy of Language UGRD 5
Basic problems and results in the philosophy of language, concentrating on theories of reference, theories of meaning, and theories of language-use (speech-acts, implicature, etc.).
Prereq: 250 and 10 cr hrs of Philos course work at the 300 level or above (preferably 473); or grad standing in Philos; or permission of instructor.

678H Junior-Senior Proseminar UGRD 3-5
Topics vary; emphasis on recent philosophical writing in some specific area or on some specific problem.
Prereq: Honors level standing and 10 cr hrs in Philos course work at or above the 200 level; or permission of instructor. Repeatable to a maximum of 15 cr hrs.

693 Individual Studies UGRD 1-10
Individual Studies.
Prereq: Permission of dept chairperson. Students ordinarily earn from 1 to 5 cr hrs, but honors students may earn up to 10 cr hrs. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

694 Group Studies UGRD 1-15
Group Studies.
Prereq: Permission of chairperson. Repeatable to a maximum of 30 cr hrs.

697 Study at a Foreign Institution UGRD 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This course is Progress (P) graded. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

700 First-Year Seminar GRAD 5
A topically variable introduction to advanced philosophical methodology. Open only to first-year philosophy grad students.

737 Proseminar in Cognitive Science UGRD 2
An in-depth examination of the interdisciplinary field of cognitive science; emphasizes fundamental issues of each discipline, provides illustrations of representative research being conducted at OSU.
Prereq: CptrInf 612, Linguist 612, Psych 612, or Philos 612, or permission of instructor. Repeatable to a maximum of 4 cr hrs. Cross-listed in Computer and Information Science, Industrial Systems Engineering, Linguistics, Psychology, and Speech and Hearing Science.

750 Advanced Logical Theory UGRD 5
Topics include formal arithmetic, recursive functions, Turing machines, Godel's incompleteness theorems, Church's thesis, arithmetical truth, logical paradoxes, and higher-order logic.
Prereq: 250 and 650. Repeatable to a maximum of 15 cr hrs.

783H Honors Research UGRD 3-5
A program of reading arranged for each student, with individual conferences, reports, and papers.
Prereq: 4th yr standing with a grade of A in 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 2 qtrs are required of candidates for the BA with distinction in Philos. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

801 Seminar in the History of Philosophy GRAD 1-5
Seminar in the History of Philosophy.
Prereq: Grad standing in Philos or permission of instructor. Repeatable to a maximum of 30 cr hrs.

830 Seminar in Value Theory GRAD 1-5
Seminar in Value Theory.
Prereq: Grad standing in Philos or permission of instructor. Repeatable to a maximum of 30 cr hrs.

850 Seminar in Logic GRAD 1-5
Seminar in Logic.
Prereq: Grad standing in Philos or permission of instructor. Repeatable to a maximum of 30 cr hrs.

855 Seminar in Philosophy of Science GRAD 1-5
Seminar in Philosophy of Science.
Prereq: Grad standing in Philos or permission of instructor. Repeatable to a maximum of 30 cr hrs.

860 Seminar in Theory of Knowledge GRAD 1-5
Seminar in Theory of Knowledge.
Prereq: Grad standing in Philos or permission of instructor. Repeatable to a maximum of 30 cr hrs.

863 Seminar in Metaphysics GRAD 1-5
Seminar in Metaphysics.
Prereq: Grad standing in Philos or permission of instructor. Repeatable to a maximum of 30 cr hrs.

873 Seminar in Philosophy of Language GRAD 1-5
Seminar in Philosophy of Language.
Prereq: Grad standing in Philos or permission of instructor. Repeatable to a maximum of 30 cr hrs.

993 Individual Studies GRAD 2-15
Doctoral students may register for individual study in areas not normally covered by courses.
Prereq: An MA degree or at least 50 cr hrs of grad study, and permission of chairperson.
This course is graded S/U.

999 Research in Philosophy GRAD 1-18
Research for thesis or dissertation purposes only. Repeatable. This course is graded S/U.

Physical Medicine And Rehabilitation

993 Individual Studies in Physical Medicine GRAD 3-5
Minor investigations using electrodiagnostic techniques; biophysical, physiologic, and therapeutic effects of physical agents, and other medical rehabilitation techniques.
Au, Wi, Sp Qtrs. Prereq: Grad or professional standing and permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

999 Research in Physical Medicine and Rehabilitation GRAD 1-18
Research for thesis purposes only.
Su, Au, Wi, Sp Qtrs. Prereq: Grad or professional standing and permission of instructor. Repeatable. This course is graded S/U.

Physical Therapy

630.01 Neuroscientific Basis of Rehabilitation in Physical Therapy I: Lecture I GRAD 2
Focus on the neuroscientific knowledge that physical therapists need in order to understand the complex problems of the patient with musculoskeletal or neuromuscular disorder.
8 sessions 2.5 hrs each. Prereq: Permission of instructor.

630.02 Neuroscientific Basis of Rehabilitation in Physical Therapy I: Laboratory I GRAD 1
Focus on the neuroscientific knowledge that physical therapists need in order to understand the complex problems of the patient with musculoskeletal or neuromuscular disorder.
8 sessions 2.5 hrs each. Prereq: Permission of instructor.

631 Neuroscientific Basis of Rehabilitation in Physical Therapy II GRAD 3
Expand on previous neuroscience coursework and build a scientific basis for physical therapy practice in neurologic rehabilitation settings.
Sp Qtr. 12 2.5-hr cl. Prereq: Enrollment in physical therapy or permission of instructor.

645 Topics in Geriatrics UGRD 3
The aging process and its impact on physical and functional abilities and needs of the older adult.
Sp Qtr. 2 cl and 1 1-hr discussion. Prereq: Permission of instructor.

646 Rehabilitation Exercise Programming for Fitness in the Elderly and those with Neurodegenerative Disease GRAD 2
Designed to promote acquisition of clinical skills of assessing individuals who are disabled or elderly and prescribing exercise for those with disabilities.
Au, Wi, Sp Qtrs. Prereq: Enrollment in Allied Medicine Graduate School Program. Repeatable to a maximum of 3 cr hrs. Service Learning course. This course is graded S/U.

670 Service Learning in Physical Therapy GRAD 1
Designed to provide service learning experiences at the Physicians Free Clinic to enhance student civic skills and to facilitate interdisciplinary collaborations.
Au, Wi, Sp Qtrs. 2-3 cl, 5 sessions. Prereq: Enrollment in Allied Medicine Graduate School Program. Repeatable to a maximum of 3 cr hrs. Service Learning course. This course is graded S/U.

689.01 Clinical Experience I GRAD 1-6
Supervised provision of physical therapy services in a variety of clinical practice settings.
Su, Au, Wi, Sp Qtrs. Prereq: Admission to PhysTher and permission of instructor. Minimum of 32 weeks of clinical experience required for completion of program. This course is graded S/U.

689.02 Clinical Experience II GRAD 3-6
Supervised provision of physical therapy services in a variety of clinical practice settings.
Su, Au, Wi, Sp Qtrs. Prereq: Admission to PhysTher and permission of instructor. Minimum of 32 weeks of clinical experience required for completion of program. This course is graded S/U.
689.03 Clinical Experience III  
GRAD 6-12  
Supervised provision of physical therapy services in a variety of clinical practice settings.  
Su, Au, Wi, Sp. Prereq: Admission to PhysTher and permission of instructor.  
Minimum of 32 weeks of clinical experience required for completion of program. This course is graded S/U.

689.04 Clinical Experience IV  
GRAD 3-12  
Supervised provision of physical therapy services in a variety of clinical practice settings.  
Su, Au, Wi, Sp. Prereq: Admission to PhysTher and permission of instructor. Minimum of 32 weeks of clinical experience required for completion of program. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

689.05 Clinical Experience V  
GRAD 6-12  
Supervised provision of physical therapy services in a variety of clinical practice settings.  
Su, Au, Wi, Sp. Prereq: Admission to PhysTher and permission of instructor. Minimum of 32 weeks of clinical experience required for completion of program. This course is graded S/U.

693 Individual Studies  
UGRD 1-15  
Guided study or individual readings, research, or experiences related to PhysTher.  
Su, Au, Wi, Sp. Prereq: Admission to PhysTher or permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

720 Advanced Concepts in Evaluation and Treatment of the Spine  
GRAD 3  
Analysis and application of concepts of manual therapy, motor control, and exercise in managing spinal disorders.  
Wi Qtr. 3 cl. Prereq: Permission of instructor.

730 Advanced Concepts in Neuroromotor Control  
GRAD 3  
Critical analysis of neuromotor systems, motor control, and motor dysfunction.  
Wi Qtr. 1 2-5-hr cl. Prereq: 630 or equiv or permission of instructor.

740 Clinical Laboratory: Upper Quarter  
GRAD 1  
Designed to develop skill in basic assessment techniques for physical therapy practice.  
Au Qtr. 1 2-hr lab. Prereq: Enrollment in physical therapy program. This course is graded S/U.

741 Clinical Laboratory: Lower Quarter  
GRAD 1  
Designed to develop skill in basic assessment techniques for physical therapy practice.  
Wt Qtr. 1 2-hr lab. Prereq: Enrollment in physical therapy program. This course is graded S/U.

750 Clinical Science I: Upper Quarter  
GRAD 4  
Designed to establish a knowledge base of concepts, promote understanding and appreciation of principles of biomechanics, normal and pathological movement of spine and upper extremity.  
Au Qtr. 5 1-hr cl. Prereq: Permission of instructor.

751 Clinical Science II: Lower Quarter  
GRAD 4  
Designed to establish a knowledge base of concepts, promote understanding and appreciation of the principles of biomechanics, normal and pathological movement of lower extremity including gait.  
Wt Qtr. 5 1-hr cl. Prereq: Permission of instructor.

752 Clinical Science III: Special Topics  
GRAD 3  
Designed to establish a knowledge base of concepts and promote an understanding and appreciation of the principles of disease.  
Sp Qtr. 5 1-hr cl for 6 weeks. Prereq: Permission of instructor.

753 Clinical Science IV: Pediatric  
GRAD 4  
Designed to develop an understanding of normal development and the result of damage to the developing nervous and musculoskeletal systems.  
Su Qtr. 5 1-hr cl. Prereq: Permission of instructor.

754 Clinical Science V: Adult/Geriatric  
GRAD 4  
Designed to develop an understanding of the effects of damage to the central nervous system and cardiopulmonary system.  
Au Qtr. 5 1-hr cl. Prereq: Permission of instructor.

755 Clinical Science VI: Adult Neurology  
GRAD 3  
Designed to develop an understanding of the effects of damage to the central nervous system on sensorimotor function, building on a foundation of anatomy, neuroanatomy, and physiology.  
Wi Qtr. 5 1-hr cl for 8 weeks. Prereq: Permission of instructor.

760.01 Clinical Applications: Upper Quarter: Lecture  
GRAD 5  
Designed to promote analysis and application of the concepts and principles of musculoskeletal evaluation, examination, diagnosis, and treatment of upper extremity and spine.  
5 1-hr cl. Prereq: Permission of instructor.

760.02 Clinical Applications: Upper Quarter: Laboratory  
GRAD 3  
Designed to promote analysis and application of the concepts and principles of musculoskeletal evaluation, examination, diagnosis, and treatment of upper extremity and spine.  
2 3-hr labs. Prereq: Permission of instructor.

761.01 Clinical Applications: Lower Quarter: Lecture  
GRAD 5  
Designed to promote analysis and application of the concepts and principles of musculoskeletal evaluation, examination, diagnosis, and treatment of the lower quarter.  
5 1-hr cl. Prereq: Permission of instructor.

761.02 Clinical Applications: Lower Quarter: Laboratory  
GRAD 3  
Designed to promote analysis and application of the concepts and principles of musculoskeletal evaluation, examination, diagnosis, and treatment of the lower quarter.  
2 3-hr labs. Prereq: Permission of instructor.

762.01 Clinical Applications: Special Topics: Lecture  
GRAD 3  
Designed to promote an understanding and appreciation for the concepts and principles of evaluation, diagnosis of patients with wounds, burns, pain syndromes, and neoplasms.  
4 1-hr cl for 6 weeks. Prereq: Permission of instructor.

762.02 Clinical Applications: Special Topics: Laboratory  
GRAD 2  
Designed to promote an understanding and appreciation for the concepts and principles of evaluation, diagnosis of patients with wounds, burns, pain syndromes, and neoplasms.  
2 3-hr labs for 6 weeks. Prereq: Permission of instructor.

763.01 Clinical Applications: Lecture  
GRAD 4  
Designed to promote an understanding of the principles of developmental evaluation, diagnosis and treatment of disorders of childhood including neurological, musculoskeletal, and cardiopulmonary problems.  
5 1-hr cl. Prereq: Permission of instructor.

763.02 Clinical Applications: Laboratory  
GRAD 3  
Designed to promote an understanding of the principles of developmental evaluation, diagnosis and treatment of disorders of childhood including neurological, musculoskeletal, and cardiopulmonary problems.  
2 3-hr labs. Prereq: Permission of instructor.

764.01 Clinical Applications: Lecture  
GRAD 5  
Designed to promote the understanding of principles of neurologic evaluation, exercise testing, diagnosis, and treatment of the patient with neurological and cardiopulmonary pathologies.  
4 1-hr cl for 6 weeks. Prereq: Permission of instructor.

764.02 Clinical Applications: Laboratory  
GRAD 3  
Designed to promote the understanding of principles of neurologic evaluation, exercise testing, diagnosis, and treatment of the patient with neurological and cardiopulmonary pathologies.  
2 3-hr labs. Prereq: Permission of instructor.

765.01 Clinical Applications: Lecture  
GRAD 3  
Designed to promote the understanding of the principles of neurologic evaluation, diagnosis, and treatment of the patient with stroke, traumatic brain injury and other neurological disorders.  
4 1-hr cl for 6 weeks. Prereq: Permission of instructor.

765.02 Clinical Applications: Laboratory  
GRAD 2  
Designed to promote the understanding of the principles of neurologic evaluation, diagnosis, and treatment of the patient with stroke, traumatic brain injury and other neurological disorders.  
2 3-hr labs for 6 weeks. Prereq: Permission of instructor.

766.01 Clinical Applications VII: Advanced Topics: Lecture  
GRAD 1  
Teaches students to evaluate and design treatment programs for patients with acute conditions including amputation.  
1 1-hr cl.

766.02 Clinical Applications VII: Advanced Topics: Laboratory  
GRAD 1  
Teaches students to perform evaluation and treatment techniques in the clinical setting for patients with acute conditions including amputation.  
1 2-hr lab.

770 Foundations of Physical Therapy Practice  
GRAD 2  
Introduction to the profession of physical therapy and the behaviors consistent with that profession.  
Su Qtr. 2 1-hr cl. Prereq: Permission of instructor.

771 Decision Making in Physical Therapy Practice  
GRAD 1  
Introduction to clinical decision making and documentation related to evaluation, goal setting, and treatment of the patient with a musculoskeletal condition.  
Au Qtr. 1 1-hr cl. Prereq: Permission of instructor.

772 Physical Therapy in a Healthcare System  
GRAD 1  
Introduction to health care delivery systems, critical issues in physical therapy including reimbursement, liability, the role of the PTA and aide, and clinical education.  
Wi Qtr. 1 1-hr cl. Prereq: Permission of instructor.

773 Physical Therapy Management of the Child  
GRAD 2  
Introduction to health care delivery systems in pediatric practice, critical issues in pediatric physical therapy, the role of family and culture in therapeutic program of child.  
Su Qtr. 2 1-hr cl. Prereq: Permission of instructor.

774 Physical Therapy Management of the Elderly  
GRAD 2  
Introduction to health care delivery systems and critical issues in rehabilitation and geriatrics as well as the resources available for the patient with a disability.  
Au Qtr. 2 1-hr cl. Prereq: Permission of instructor.

775 Physical Therapy Management of the Adult  
GRAD 1  
Designed to further introduce the student to health care delivery systems and critical issues in rehabilitation and geriatrics as well as the resources available for the patient with a disability.  
Wi Qtr. 2 1-hr cl for 6 weeks. Prereq: Permission of instructor.

785.01 Research Seminar: Introduction to Research  
GRAD 1  
Designed to provide a forum for the student to explore and analyze the process involved in critical inquiry and clinical research. Introduction to Research.  
Au Qtr. Prereq: Permission of instructor. This course is graded S/U.
### Physical Therapy

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>785.02</td>
<td>Research Seminar: Research Methods in Physical Therapy</td>
<td>GRAD 1</td>
<td>Designed to provide a forum for the student to explore and analyze the process involved in critical inquiry and clinical research: Research Methods in Physical Therapy. Wi Qtr. Prereq: Permission of instructor. This course is graded S/U.</td>
</tr>
<tr>
<td>785.03</td>
<td>Research Seminar: Research Applications in Physical Therapy</td>
<td>GRAD 1</td>
<td>Designed to provide a forum for the student to explore and analyze the process involved in critical inquiry and clinical research: Research Applications in Physical Therapy. * Su Qtr. Prereq: Permission of instructor. This course is graded S/U.</td>
</tr>
<tr>
<td>785.04</td>
<td>Research Seminar: Advanced Topics in Research</td>
<td>GRAD 1</td>
<td>Designed to provide a forum for the student to explore and analyze the process involved in critical inquiry and clinical research: Advanced Topics in Research. * Au Qtr. Prereq: Permission of instructor. This course is graded S/U.</td>
</tr>
<tr>
<td>785.05</td>
<td>Research Seminar: Advanced Case Study in Research in Physical Therapy</td>
<td>GRAD 1</td>
<td>Designed to provide a forum for the student to explore and analyze the process involved in critical inquiry and clinical research: Advanced Case Study in Research in Physical Therapy.</td>
</tr>
</tbody>
</table>

### Physics

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>103</td>
<td>The World of Energy I</td>
<td>UGRD 5</td>
<td>An examination of the concept of energy with its personal and global impact using the hands-on discovery mode. Au, Sp Qtrs. 1 cr, 2-2 hr rec. Not open to students with credit for 100.02. Intended for non-science majors. NS Admis Cond course. GEC phys sci course.</td>
</tr>
<tr>
<td>104</td>
<td>The World of Energy II</td>
<td>UGRD 5</td>
<td>Continuation of 103. Su, Wi, Sp Qtrs. 1 cr, 2-2 hr rec. Prereq: 103. Intended for non-science majors. Not open to student with credit for 100.02. NS Admis Cond course. GEC phys sci course.</td>
</tr>
<tr>
<td>106</td>
<td>Physics by Inquiry: Properties of Matter</td>
<td>UGRD 5</td>
<td>Principles of matter and experimental physics for undergraduates contemplating a teaching career. Wi Qtr. 2-3 hr cl. Not open to students with credit for 201. Intended for non-science majors, especially those interested in education. NS Admis Cond course. GEC phys sci course.</td>
</tr>
<tr>
<td>107</td>
<td>Physics by Inquiry: Electric Circuits</td>
<td>UGRD 5</td>
<td>Electric phenomena, electric circuits, and experimental physics for undergraduates contemplating a teaching career. Sp Qtr. 2-3 hr cl. Not open to students with credit for 202. Intended for non-science majors, especially those interested in education. NS Admis Cond course. GEC phys sci course.</td>
</tr>
<tr>
<td>110</td>
<td>The Physics of Sports</td>
<td>UGRD 5</td>
<td>Examines the physics of motion set in the context of sports. Sp Qtr. 5 cr, Prereq: Math 275 or equiv. GEC phys sci course.</td>
</tr>
<tr>
<td>111</td>
<td>General Physics: Mechanics and Heat</td>
<td>UGRD 5</td>
<td>General Physics: Mechanics and Heat. Su, Au, Wi, Sp Qtrs. 4 cr, 1-2 hr lab. Prereq: Eligibility for Math 150 or eligibility for Math 151. Recommended for students with little or no prior physics experience.</td>
</tr>
<tr>
<td>112</td>
<td>General Physics: Electricity, Magnetism, and Light</td>
<td>UGRD 5</td>
<td>General Physics: Electricity, Magnetism, and Light. Su, Au, Wi, Sp Qtrs. 4 cr, 1-2 hr lab. Prereq: 111. This course is available for EM credit. NS Admis Cond course. GEC phys sci course. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at <a href="http://registrar.osu.edu">http://registrar.osu.edu</a>.</td>
</tr>
<tr>
<td>113</td>
<td>General Physics: Modern Physics</td>
<td>UGRD 5</td>
<td>General Physics: Modern Physics. Su, Au, Wi, Sp Qtrs. 4 cr, 1-2 hr lab. Prereq: 112. This course is available for EM credit. NS Admis Cond course. GEC phys sci course. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at <a href="http://registrar.osu.edu">http://registrar.osu.edu</a>.</td>
</tr>
<tr>
<td>131</td>
<td>Introductory Physics: Particles and Motion</td>
<td>UGRD 5</td>
<td>Major concepts of physics from a contemporary point of view; for students in physical sciences, mathematics, or engineering. 131H (honors) may be available. Su, Au, Wi, Sp Qtrs. 5 cr, 1-2 hr lab. Prereq: 1 entrance unit of Physics or Chem; and Math 151 and concur Math 152, or concur Math 161 or higher. This course is available for EM credit. NS Admis Cond course. GEC phys sci course. 131E may be available for honors embedded experience at the regional campuses. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at <a href="http://registrar.osu.edu">http://registrar.osu.edu</a>.</td>
</tr>
<tr>
<td>131H</td>
<td>Honors Physics: Particles and Motion</td>
<td>UGRD 5</td>
<td>Major concepts of physics from a contemporary point of view; challenging, flexible format; includes honors lab; for students strong in physical sciences, mathematics, or engineering. Au Qtr. 5 cr, 1-2 hr lab. Prereq: 1 entrance unit of Physics or Chem; and Math 151 and concur Math 152, or concur Math 161 or higher; honors program or permission of department or instructor. NS Admis Cond course. GEC phys sci course. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at <a href="http://registrar.osu.edu">http://registrar.osu.edu</a>.</td>
</tr>
</tbody>
</table>
132 Introductory Physics: Electricity and Magnetism UGRD 5
Continuation of 131. 132H (honors) may be available. Su, Au, Wi, Sp Qtrs. 5 cl, 1 2-hr lab. Prereq: 131; and Math 152 and concour Math 153, or concour Math 162 or higher. This course is available for EM credit. NS Admis Cond course. GEC phys sci course. 132E may be available for honors embedded experience at the regional campuses. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://register.osu.edu.

132H Honors Physics: Electricity and Magnetism UGRD 5
Continuation of 131H. Wi Qtr. 5 cl, 1 2-hr lab. Prereq: 131H with grade of C or better, and Math 152 and concour Math 153, or concour Math 162 or higher; honors program or permission of department or instructor. NS Admis Cond course. GEC phys sci course. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://register.osu.edu.

133 Introductory Physics: Thermal Physics, Waves, and Quantum Physics
Continuation of 132. 133H (honors) may be available. Su, Au, Wi, Sp Qtrs. 5 cl, 1 2-hr lab. Prereq: 132, and Math 153 or Math 162 or higher. This course is available for EM credit. NS Admis Cond course. GEC phys sci course. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://register.osu.edu.

133H Honors Physics: Thermal Physics, Waves, and Quantum Physics
Continuation of 132H. Sp Qtr. 5 cl, 1 2-hr lab. Prereq: 132H with grade of C or better, and Math 153 or Math 162 or higher; honors program or permission of department or instructor. NS Admis Cond course. GEC phys sci course. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://register.osu.edu.

161 The Building Blocks of Creation I UGRD 5
An overall perspective on our physical universe from the historical development of fundamental physics concepts to their impact on culture and society. * Au Qtr. 5 cl. Prereq: Math 075 or equiv. GEC phys sci course. NS Admis Cond course.

162 The Building Blocks of Creation II UGRD 5
Continuation of 161. * Wi Qtr. 5 cl. Prereq: 161 and Math 075 or equiv. GEC phys sci course. NS Admis Cond course.

261 Dynamics of Particles and Waves I UGRD 4
Vectors and kinematics; foundations of Newtonian mechanics; momentum, work, and energy; conservative and nonconservative forces; potentials; angular momentum; rotation about a fixed axis. Au Qtr. 4 cl. Prereq or concur: 132. Not open to students with credit for 525.

262 Dynamics of Particles and Waves II UGRD 4
Rigid body motion; noninertial systems and fictitious forces; central force motion; the special theory of relativity; relativistic kinematics; relativistic momentum and energy. Wi Qtr. 4 cl. Prereq: 261 and prereq or concour 133; and concour Math 254 or Math 263. Grade of C or better in Physics 261. Not open to students with credit for 525.

263 Dynamics of Particles and Waves III UGRD 4
Introduction to quantum systems; photons; the Bohr atom; matter waves. Sp Qtr. 4 cl. Prereq: 262, and Math 254 or Math 263.

294 Group Studies
Designed to permit groups of students the opportunity to pursue special studies not otherwise offered. Au, Wi, Sp Qtr. Prereq: Written permission of instructor. Repeatable to a maximum of 15 or hrs.

295 Introductory Seminar
Introduction to departmental research programs and to selected topics of interest in contemporary physics. Au Qtr. 1 1-hr cl. Prereq: 131. This course is graded S/U.

367 Use of Science in Solving Problems of Society UGRD 5
Energy, 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. Au and/or Sp Qtrs at Marion campus, qtrs vary at Columbus campus. 5 cl. Prereq: Math Placement 5 or higher; 1 5-hr 100-level course in either Astron, BioSci, Chem, GeolSci, or Physics; English 110 or 111 or equiv. Not open to students with credit for PhysSci 180. GEC second writing and phys sci course.

416 Methods of Experimental Physics
Introduction to the experimental techniques of physics and the statistical analysis of data, through lectures and a variety of experiments. Au, Wi, Sp Qtrs. 1 1-hr cl, 2 2-hr labs. Prereq: 131, 132, and 133, CSE 202. GEC data analysis course.

455H Honors Holography I UGRD 5
The basic technique of 3D image making; construction of a diode laser and use of this device to make holograms. Sp Qtr. Prereq: Enrollment in an honors program or permission of dept or of instructor. Repeatable to a maximum of 15 or hrs including hrs earned in Art 455 and 455H. Cross-listed in Art. GEC arts and hums VPA course.

516 Intermediate Physics Laboratory UGRD 4
Selected intermediate level experiments from basic areas of physics. Wi, Sp Qtrs. 2 3-hr labs. Prereq: 113 or 133 or permission of instructor. Not open to physics majors or grad students in physics. Repeatable to a maximum of 12 or hrs.

517 Introductory Electronics for Physicists UGRD 4
Intermediate level introduction to electronic circuits, devices, and instrumentation with emphasis on laboratory experience. Su, Au, Sp Qtrs. 1 2-hr cl, 2 3-hr labs. Prereq: 133 or permission of instructor: Not open to students with credit for 617; or to grad students in physics.

555 Fields and Waves I UGRD 4
Introduction to the description of electrostatic fields; dielectrics; boundary-value problems. Au Qtr. 4 cl. Prereq: 133, 416 and prereq or concour 261, and Math 415 or Math 265, and Math 513 or 551 or 416.

570 Modern Optics UGRD 4
This course introduces students to the fundamentals of modern optics. Topics will include Maxwell's equations, reflection & refraction, interference & diffraction, lasers and optical imaging. Prereq: 261, Math 153 or equivalent, or permission of the instructor. Not open to students with credit for ECE 716.

593 Individual Studies UGRD 2-5
Independent reading, study, or laboratory work at an intermediate level. Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 or hrs. This course is graded S/U.

594 Group Studies
Group studies of special topics not otherwise offered. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Satisfactory intermediate level courses in physics and permission of instructor. Repeatable to a maximum of 15 or hrs.

596 Senior Seminar: Writing and Speaking about Physics and Astronomy
Seminar on selected topics in physics and astronomy; training in written and oral presentations; third writing course. Au, Wi, Sp Qtrs. 4 cl. Prereq: 262 or equiv. Math 255 or 415, second writing course, and yr or sr standing. Not open to students with credit for 695. GEC third writing course.

616 Advanced Physics Laboratory UGRD 4
Experiments selected from all areas of physics; independent work emphasized. Au, Wi, Sp Qtrs. 2 3-hr labs. Prereq: 263, 555, and 416 or Stat 245, grad standing or permission of instructor; 631 recommended. Repeatable to a maximum of 24 or hrs.

617 Electronics for Physicists GRADE 5
An intensive introduction to electronic circuits, devices, and instrumentation with emphasis on laboratory experience. Su, Au, Sp Qtrs. 1 2-hr cl, 2 3-hr labs. Prereq: 263 or grad standing.

621 Statistical Physics I UGRD 4
Thermodynamics and statistical mechanics; applications to noninteracting classical and quantum systems. Au Qtr. 4 cl. Prereq: 263, 416.

622 Statistical Physics II UGRD 4
Interacting systems, special states of matter, critical phenomena and phase transitions. Wi Qtr. 4 cl. Prereq: 621 or equiv.

631 Introductory Quantum Mechanics I UGRD 4
Introduction to quantum mechanics, including its historical background, the Schrodinger equation, solutions of one-dimensional scattering and bound state problems. Au Qtr. 4 cl. Prereq: Course in modern physics beyond 133, 416 and Math 255 or 415 and Math 568 or 571.

631H Honors Quantum Mechanics I UGRD 4
Introduction to quantum mechanics, including its historical background, the Schrodinger equation, solutions of one-dimensional scattering and bound state problems. Au Qtr. 4 cl. Prereq: Matthew 255 or 415, Math 568 or 571; honors status or permission of instructor.

632 Introductory Quantum Mechanics II UGRD 4
Continuation of 631; the Schrodinger equation in three dimensions, angular momentum, the hydrogen atom, Dirac notation, and time-independent perturbation theory. Wi Qtr. 4 cl. Prereq: 631.

632H Honors Quantum Mechanics II UGRD 4
The Schrodinger equation in three dimensions, angular momentum, the hydrogen atom, Dirac notation, and time-independent perturbation theory. Prereq: Physics 631H, honors status or permission of instructor.

633 Introductory Quantum Mechanics III UGRD 4
Continuation of 632; time-dependent perturbation theory, scattering theory and the Born approximation, multi-electron atoms, and selected further applications. Au Qtr. 4 cl. Prereq: 632.

633H Honors Quantum Mechanics III UGRD 4
Time-dependent perturbation theory, scattering theory and the Born approximation, multi-electron atoms, and selected further applications. Prereq: 632H; honors status or permission of instructor.
655 Grad Holography I UGRD 5
Introduction to the theory and basic technique of 3D image making. Students will construct a diode laser and use it to make holograms.
Repeatable to a maximum of 15 cr hrs. Cross-listed with 455H. For graduate students enrolled in the graduate interdisciplinary specialization "Analysis of Material Culture".

656 Fields and Waves II UGRD 4
Continuation of 555; magnetic fields of steady currents; induction; Maxwell's equations; plane waves; special relativity.
Wi Qtr. 4 cl. Prereq: 555 or equiv.

657 Fields and Waves III UGRD 4
Continuation of 556; plane waves in matter; physical optics; coherence, interference, diffraction, and dispersion.
Sp Qtr. 4 cl. Prereq: 656 or equiv.

664 Theoretical Mechanics UGRD 4
Development of Lagrangian mechanics, inertia and stress tensors, rigid body rotations and introduction to the mechanics of continuous media.
Sp Qtr. 4 cl. Prereq: 262 and Math 255, concur Math 513 or 551.

670 Physics for In-Service Teachers GRAD 1-15
Designed to deepen teachers' understanding of basic physical concepts and methods of treatment of selected topics; includes lectures, discussions, demonstrations, and individualized laboratory work.
Su Qtr. Prereq: 15 cr hrs in physics, teaching experience, and permission of instructor. Repeatable to a maximum of 30 cr hrs. Intended for secondary school science teachers.

681 Principles of Stellar Evolution and Nucleosynthesis UGRD 5
Physics of stellar structure, evolution, and nucleosynthesis.
* Wi Qtr. 5 cl. Prereq: Math 255 or 415, Physics 263, Physics 621 (or concurrent) recommended; or permission of instructor. Not open to students with credit for Astron 641 or 651 or 681. Cross-listed in Astronomy.

682 Introduction to Cosmology UGRD 5
Structure and evolution of the Universe.
* Wi Qtr. 5 cl. Prereq: Math 255 or 415, Physics 263, Physics 621 (or concurrent) recommended; or permission of instructor. Not open to students with credit for Astron 642 or 682. Cross-listed in Astronomy.

693 Individual Studies UGRD 0-15
Designed to give a properly qualified student opportunity for independent reading, study, or laboratory work in a specialized field of interest.
Su, Au, Wi Qtr. Prereq: Satisfactory advanced courses in experimental and theoretical physics and permission of instructor. Repeatable to a maximum of 30 cr hrs. Physics 693A to be offered for 0-15 hrs only. This course is graded S/U.

699 Undergraduate Research in Physics UGRD 1-15
Undergraduate research or creative activities in various topics.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

730 Methods of Theoretical Physics I UGRD 4
Sturm-Liouville theory of orthogonal functions; boundary value problems in Cartesian, cylindrical, spherical coordinates; Fourier series, Legendre polynomials, spherical harmonics, and Bessel functions.
Sp Qtr. 4 cl. Prereq: Math 601, and 701 or equiv.

740 Introduction to Astrochemistry UGRD 3
A treatment of the chemistry occurring in regions outside of the solar system including interstellar clouds, areas of star formation, and envelopes and atmospheres of stars.
Wi Qtr. 1 hr cl. Prereq: Introductory courses in quantum mechanics, thermodynamics, and basic kinetics. Not open to students with credit for Astron 740 or Chem 740. Cross-listed in Astronomy and Chemistry.

780.02 Topics: Elementary Particle Physics UGRD 4
Experimental and theoretical aspects of areas of current interest in physics: Elementary Particle Physics.
Sp Qtr. Prereq: 633 or grad standing or permission of instructor.

780.04 Topics: Atomic and Molecular Physics UGRD 4
Experimental and theoretical aspects of areas of current interest in physics: Atomic and Molecular Physics.
Wi Qtr. Prereq: 633 or grad standing or permission of instructor.

780.05 Topics: Nuclear Physics UGRD 4
Experimental and theoretical aspects of areas of current interest in physics: Nuclear Physics.
Wi Qtr. Prereq: 633 or grad standing or permission of instructor.

780.06 Topics: Condensed Matter Physics UGRD 4
Experimental and theoretical aspects of areas of current interest in physics: Condensed Matter Physics.
Sp Qtr. Prereq: 633 or grad standing or permission of instructor.

780.20 Special Topics UGRD 4
Experimental and theoretical aspects of areas of current interest in physics: Special Topics.
* Prereq: 633 or grad standing or permission of instructor. Repeatable to a maximum of 20 cr hrs.

783H Honors Research UGRD 3-5
A program of research for each student which includes individual conferences and which culminates in an honors thesis or oral defense.
Su, Au, Wi Qtrs. Prereq: Approved candidacy for graduation with distinction, which includes faculty advisor and ASC Honors Committee approval of project, a minimum 3.50 pt-hr ratio in the field of distinction, sr standing, and cumulative pt-hr ratio commensurate with honors program membership. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

795 Special Topics Seminar UGRD 1
A survey of current research problems in physics.
Au, Wi Qtrs. Prereq or concur: 631 or equiv. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

801 Seminar in Physics GRAD 1
Seminars will be conducted by various members of the staff on topics of current interest in their fields of specialization; students will participate in the presentation and discussion of material.
Su, Au, Wi, Sp Qtrs. Prereq: Acceptable specialized courses and permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

816 Topics in Physics GRAD 3-6
Laboratory and/or theoretical work on an individual basis on topics of current interest.
Su, Au, Wi, Sp Qtrs. Prereq: 616 or equiv and permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

821 Classical Dynamics UGRD 4
Lagrangian dynamics, variational principles, Hamilton's equations, canonical transformations, symmetries and conservation laws, small oscillations, normal coordinates, and classical fields.
Au Qtr. 4 cl. Prereq: 604 or equiv.

822 Elasticity and Fluid Mechanics UGRD 4
Elasticity of solids; stress and strain tensors, dislocations; fluid mechanics; ideal and viscous fluids, chaos, and turbulence.
Au Qtr. 4 cl. Prereq: 821 or permission of instructor.

827 Quantum Mechanics I GRAD 5
Postulates and Schroedinger equation, linear vector spaces, one-dimensional problems, path- integral formulation of quantum theory; multiparticle systems, symmetry, orbital angular momentum, and central potentials.
Au Qtr. 4 cl. Prereq: 633 or equiv or permission of instructor.

828 Quantum Mechanics II GRAD 5
Spin angular momentum and its dynamics; addition of angular momenta; variational method; time-dependent and time-independent perturbations, semiclassical treatment of electromagnetic radiation.
Wi Qtr. 4 cl. Prereq: 827.

829 Quantum Mechanics III GRAD 5
Quantized electromagnetic radiation; scattering theory; density matrix; Dirac equation, relativistic hydrogen atom; Hartree-Fock theory, atoms, and molecules.
Sp Qtr. Prereq: 827.

830 Quantum Mechanics IV GRAD 4
Systems with several electrons, exclusion principle; applications to atoms and molecules, and to scattering; Hartree-Fock approximation; Dirac equation for free electrons and for hydrogen.
* Au Qtr. 4 cl. Prereq: 829.

834 Electromagnetic Field Theory I GRAD 4
Boundary value problems involving static electric and magnetic fields, fields in material media.
Au Qtr. 4 cl. Prereq: 656 or equiv.

835 Electromagnetic Field Theory II GRAD 4
Maxwell's equations, electromagnetic waves, radiation by simple systems, wave guides.
Wi Qtr. 4 cl. Prereq: 834 or permission of instructor.

836 Electromagnetic Field Theory III GRAD 4
Special theory of relativity, dynamics of relativistic particles, collisions between charged particles, energy loss, scattering, radiation by moving charges.
Sp Qtr. Prereq: 835 or permission of instructor.

846 Statistical Physics I GRAD 4
Physical thermodynamics and introduction to statistical physics; fundamental postulates, entropy, thermodynamic potentials and changes of phase; microscopic expression for entropy and basis of classical ensemble theory.
Wi Qtr. 4 cl. Prereq: 622 and 684 or equiv.

847 Statistical Physics II GRAD 4
Canonical and grand ensembles; Quantum statistical mechanics; density matrices, partition functions, Bose and Fermi gases; Debye specific heat; black-body radiation; Bose-Einstein condensation; interacting systems.
Sp Qtr. Prereq: 846 and 825.

848 Advanced Statistical Physics GRAD 4
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.
* Au Qtr. 4 cl. Prereq: 829 and 847, or permission of instructor.

880.02 Advanced Topics: Elementary Particle Physics GRAD 3
A systematic advanced treatment of areas of current interest in physics; topics will be announced each quarter: Elementary Particle Physics.
Prereq: 828 or permission of instructor. Repeatable.
880.05 Advanced Topics: Nuclear Physics  GRAD 3
A systematic advanced treatment of areas of current interest in physics; topics will be announced each quarter: Nuclear Physics.
Prereq: 282 or permission of instructor. Repeatable.

880.06 Advanced Topics: Condensed Matter Physics  GRAD 3
A systematic advanced treatment of areas of current interest in physics; topics will be announced each quarter: Condensed Matter Physics.
Prereq: 282 or permission of instructor. Repeatable.

880.08 Advanced Topics: Theory of Quantized Fields  GRAD 3
A systematic advanced treatment of areas of current interest in physics; topics will be announced each quarter: Theory of Quantized Fields.
Prereq: 282 or permission of instructor. Repeatable.

880.20 Special Topics  GRAD 3
A systematic advanced treatment of areas of current interest in physics; topics will be announced each quarter: Special Topics.
Prereq: 282 or permission of instructor. Repeatable.

999 Research in Physics  GRAD 1-18
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

**Physiology and Cell Biology**

311 Principles of Human Physiology I  UGRD 5
First of a two-quarter sequence covering the following areas of physiology: neuro muscular, heart and circulation, endocrine, brain and special senses, body fluids and kidney, respiration, digestion, temperature control, and metabolism.
Au Qtr. 5 cl; Prereq: 2 qtrs chem, Anatomy 199 or 200 or equiv recommended, or permission of instructor. Not open to students with credit for Physiol 311.

312 Principles of Human Physiology II  UGRD 5
Continuation of 311. Wi Qtr. 5 cl; Prereq: 311 or permission of instructor. Not open to students with credit for Physiol 312.

601 Organ System Physiology I  GRAD 5
First of a two-quarter sequence presenting the following areas of physiology: Cell, Neuroscience, Gastrointestinal, Endocrine, Reproduction, Muscle, Cardiovascular, Respiration, Renal and Acid-base.
Au Qtr. 5 cl; Prereq: Open only to students enrolled in the College of Pharmacy, Biomedical Engineering, Sport and Exercise Science, or permission of the instructor. Not open to students with credit for Physiol 601.

602 Organ System Physiology II  GRAD 5
Continuation of 601. Wi Qtr. 5 cl; Prereq: 601 or Physiol 601. Normally to be taken directly following 601. Not open to students with credit for Physiol 602.

793 Individual Studies in Physiology and Cell Biology  MED 2-18
Reading, conferences, and laboratory work by individual arrangement with qualified students who desire more intensive and specialized study than is available in other courses.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

850 Seminar in Physiology and Cell Biology  GRAD 2
Cardiovascular Journal Club.
Su, Au, Wi, Sp Qtrs. Repeatable. Open to all Physiology and Cell Biology Seminars.

911.24 Advanced Studies: Muscle Contraction  GRAD 3
In-depth examination of molecular mechanisms of activation and contraction in muscle.
Prereq: 601, 602 or 607, 608; or Physiol 601, 602 or 607, 608; or equiv with written permission of instructor. Not open to students with credit for Physiol 911.26 or Neurosci 911.26. Quarter schedule of topics to be announced.

911.26 Advanced Studies: Advanced Topics in Integrative Neurophysiology  GRAD 3
In-depth presentation of the theory and concepts of neural networks and microcircuits.
Prereq: 601, 602 or 607, 608; or Physiol 601, 602 or 607, 608; or equiv with written permission of instructor. Not open to students with credit for Physiol 911.26 or Neurosci 911.26. Quarter schedule of topics to be announced. Cross-listed in Neuroscience.

911.27 Advanced Studies: Advanced Cardiovascular Physiology  GRAD 3
Advanced presentation of cardiovascular physiology, including electrical and mechanical properties of the heart, calcium handling, beta-adrenergic stimulation of the heart, and cardiac intracellular signaling.
Au Qtr. 5 hr journal club and 2 hr class. Prereq: 601 and 602, or Physiol 601 or 602; or equiv with permission of instructor. Enrollment limited to 10. Not open to students with credit for Physiol 911.27. Quarter schedule of topics to be announced. Graduate students only.

911.28 Advanced Studies: Advanced Cardiac Development  GRAD 2
Graduate level coursework in the area of Cardiac Development.
Wi Qtr. Prereq: 911.27 or permission of instructor.
358 Plant Biology

604.02 Research Methods in Plant Science: Cell and Tissue Level
Introduction to scientific skills and modern research methods for the study of plants at the cell and tissue level.
W Qtr. Prereq: 300 or 436, or Biology 114 or HCS 300 or grad standing or permission of instructor. Not open to students with credit for these courses in HCS or PlntPth. Cross-listed in Horticulture and Crop Science, and Plant Pathology. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

604.03 Research Methods in Plant Science: Molecular Level
Introduction to scientific skills and modern research methods for the study of plants at the molecular level.
Sp Qtr. Prereq: 300 or 436, or Biology 114 or HCS 300 or grad standing or permission of instructor. Not open to students with credit for these courses in HCS or PlntPth. Cross-listed in Horticulture and Crop Science, and Plant Pathology. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

622 Plant Molecular Biology UGRD 4
An in-depth survey of molecular biology of plants with emphasis on current research projects.
W Qtr. 3 cl. 1-2 hr discussion. Prereq: MolGen 500 or Biochem 511, or MolGen 605; or permission of instructor. Not open to students with credit for MolGen 622 or 632. Cross-listed in Molecular Genetics.

623 Plant Genetics and Genomics UGRD 4
A survey and discussion of genetic systems and analytical tools in higher plants, including current genetic studies and genetic and physical mapping.
Au Qtr. 3 cl. 1-2 hr recit. Prereq: MolGen 500 or 501 and BioChem 511; or MolGen 605; or permission of instructor.

625 Plant Metabolic Engineering UGRD 3
Plant metabolic engineering with particular emphasis on the emerging role of plants and cultured plant cells as bioreactors.
Wi Qtr. 2 cl. 1-2 hr recit. Prereq: 622 or MolGen 622, or 735, or Biochem 613; or permission of instructor.

630 Plant Physiology UGRD 3
Advanced study of plant physiology: solutions, diffusion, osmotic quantities, transpiration, absorption and translocation of water, protein metabolism, enzymes, and respiration.
Au Qtr. 3 cl. 1-2 hr recit. Prereq: 101 or 300 or Biology 114, Chem 242 or 252 or BioChem 511, or written permission of instructor.

631 Plant Physiology UGRD 3
Advanced study of plant physiology; pigments, photosynthesis, carbohydrate and fat metabolism, absorption of mineral salts, translocation of solutes, regulation of plant growth, and development.
Wi Qtr. 3 cl. 1-2 hr recit. Prereq: 101 or 300 or Biology 114, Chem 252 or BioChem 511, or written permission of instructor.

643 Plant Anatomy UGRD 5
The structure, function, and development of cells, tissues, and organs of vascular plants. * Sp Qtr. 2 cl, 3-2 hr labs. Prereq: 101 or 300 or Biology 114, and 10 hr s in biological sciences; or permission of instructor. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

648 Plant Cell Biology UGRD 4
The structure and function of plant cells and their components in the context of eukaryotic cell biology. * Sp Qtr. 3 cl. 1 recit. Prereq: Some background in PlntBio and/or cell biology. Students are encouraged to consult with instructor before enrolling.

650 Biological Microtechnique UGRD 3
Modern microscopic methods for various biological studies; topics include immunocytochemistry, in situ, hybridization, confocal microscopy and fluorescent microscopy.
Sp Qtr. 2 cl 1-2 hr lab. Prereq: Biology 114 or 118H, PlntBio 300 or EECB 410 or 415 or MolGen 607, or permission of instructor.

693 Individual Studies UGRD 1-5
Problems may be selected in the fields of physiology, development, cell biology, molecular biology, biochemistry, signal transduction, genetics, genomics, proteomics, and natural products.
Su, Au, Wi, Sp Qtrs. Prereq: 102 or 693 or Biology 114, and 15 additional hrs in biological sciences. Not more than 5 cr hrs may be counted toward an undergrad major in PlntBio. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

694 Group Studies UGRD 1-5
Group study of special topics in plant biology.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

698.01 Study Tour: Domestic UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only.

698.02 Study Tour: Foreign UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only.

722 Plant Transgenic Systems GRAD 3
Solutions to applied plant biotechnology problems are developed through the application of plant transgenic systems.
Sp Qtr. Prereq: 622 or 623 or 625 or permission of instructor.

725 Circadian Biology GRAD 3
Introduction to and discussion of the phenomenology and molecular mechanisms of the circadian timing system of five model systems.
Au Qtr. Prereq: 622 or MolGen 500 or 605 or equivs or permission of instructor.

735 Plant Biochemistry I GRAD 3
The biochemistry of plant chloroplasts and mitochondria: photosynthesis, carbohydrate metabolism, sulfate and nitrate reduction, chlorophyll and heme synthesis, chloroplast development, respiration, and mitochondrial development.
Au Qtr. 3 cl. Prereq: Biochem 511 or 614. Not open to students with credit for 631 prior to Wi Qtr 1988, or to students with credit for 635 prior to Wi Qtr 1995, or to students with credit for Biochem 735. Cross-listed in Biochemistry.

736 Plant Biochemistry II GRAD 3
The biochemistry of plants with emphasis on the synthesis and structure of cell walls, lipids, secondary compounds, phytohormones and nitrogen fixation.
Wi Qtr. 3 cl. Prereq: 735 or Biochem 735. Not open to students with credit for 631 prior to Wi Qtr 1988, or to students with credit for 635 prior to Wi Qtr 1995, or to students with credit for Biochem 735. Cross-listed in Biochemistry.

741 Reproductive Biology of Flowering Plants GRAD 3
An advanced course on reproductive processes in flowering plants with emphasis on recent biochemical, molecular, and genetic approaches.
* Sp Qtr. 3 cl. Prereq: 101 or 300 or HCS 300 or Biology 114; and 15 additional hrs in biological sciences; or permission of instructor. Not open to students with credit for 641. Alternate years.

783H Honors Research UGRD 3-5
Problems may be selected in the fields of physiology, development, cell biology, molecular biology, biochemistry, signal transduction, genetics, genomics, proteomics, and natural products.
Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing, a grade of A in at least half of the plnt bio courses 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. Repeatable to a maximum of 15 cr hrs. Failure to receive a mark of S in this course is a disqualification for graduation with distinction. This course is graded S/U.

795 Special Topics in Plant Biology UGRD 1-3
Lecture/discussion in a seminar format of publications, current research, or research techniques in plant biology.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: 25 cr hrs in biological sciences at 200 level or above. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

796 Current Topics in Signal Transduction GRAD 3
A discussion of signal transduction mechanisms revealed in plant systems.
Sp Qtr. 2 1.5-hr cl. Prereq: Biochem 511 and MolGen 500, or equivs; or permission of instructor.

800 Plant Biology Colloquium GRAD 1
Attendee at weekly seminars presented by outside speakers, faculty, and post-doctoral researchers; presentations will be on cutting edge research in cellular, developmental, and molecular biology in plant biotechnology.
Au, Wi, Sp Qtrs. 1 cl. Repeatable. This course is graded S/U.

803 Seminar in Developmental and Regulatory Plant Biology GRAD 1-3
Discussion of advanced topics in developmental and regulatory plant biology.
Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

833 Advanced Plant Physiology: Growth GRAD 3
The physiology of growth; special attention given to the interrelated effects of plant hormones and environmental factors on the growth process in plants.
Sp Qtr. 3 cl. Prereq: Biochem 511, and 10 additional hrs in biological sciences; or permission of instructor.

835 Advanced Plant Physiology: Plant Reproduction and Development GRAD 3
Physiology of flowering, fruit and seed development, vegetative reproduction, dormancy, apical dominance, abscission, and senescence.
* Sp Qtr. 3 cl. Prereq: 631 or equiv and Biochem 511.

836 Mechanisms of Plant Development GRAD 3
Discussion of current research topics on the mechanisms of plant development, including such topics as genetic control and the role of biochemical and environmental signals.
Sp Qtr. 2 1.5-hr cl. Prereq: 436 or 622 or 631 and MolGen 500 or 622; or permission of instructor.
890 Interdepartmental Seminar in Molecular, Cellular, and Developmental Biology

Students will present oral reports and lead discussion on research progress in specific areas of molecular, cellular, and developmental biology.
Au, Wi, Sp Qtrs. 1 1-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. Given cooperatively by Microbiology, Molecular Genetics, and Plant Biology. This course is graded S/U.

892 Interdepartmental Seminar in Plant Physiology

Students will present seminars on their research or related topics in plant physiology and/or attend seminars by local and visiting researchers.
Au, Wi, Sp Qtrs. 1 cl. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. Including cr hrs earned in Agronomy/Biochem/FdsNut/FdsSci/HCS/Hort 892. Cross-listed in Biochemistry, Food Science and Technology, and Horticulture and Crop Science. This course is graded S/U.

998 Research in Plant Biology: Thesis

Research for master's thesis only.
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

999 Research in Plant Biology

Research for dissertation purposes only.
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

Plant Cellular And Molecular Biology

494H Group Studies in Plant Molecular Biology

Honors group studies; laboratory and classroom experience in cellular and molecular biology of plants. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

Plant Pathology

201 Social Impact of Plant Diseases in Shaping Human Society

Review of the interactions of plant pathogens and the social, economic, and historic consequences for civilization.
Au, Wi, Sp Qtrs. 1 1-hr cl. Available in web version. 201D is an entirely online distance learning class.

294 Special Group Studies

Special group studies of a selected area in plant pathology not provided in other courses.
Su, Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 10 cr hrs.

300 Field and Woodland Fungi

An introduction to common macrofungi in natural habitats with emphasis on identification and ecology.
Au Qtr. 2 3-hr lec/lab. Prereq: Biology 101 or 113 or PlntBio 101 or PCMB 101.

395 Plant Health Science Forum

A seminar series for those interested in plant health science. Students will meet with professional plant health managers and take field trips. Professional development issues also covered.
Au, Sp Qtrs. 1 1-hr cl. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

401 General Plant Pathology

An introduction to diseases of plants.
Au Qtr. 3 cl, 2 2-hr lab. Prereq: Biology 101 or 113 or 115H or PCMB 101 or PlntBio 101, Biology 114 recommended.

455 Bioterrorism: An Overview

A broad awareness course on the bioterrorism threat to our food supply, crops, animal and public health, and bioterrorist organizations.
Wi Qtr. 2 2.5-hr cl. Prereq: Jr or sr standing. Not open to students with credit for IntStds 455. Cross-listed in International Studies.

489 Internship Experiences in Plant Health Management

Ten or more weeks of an individualized experiential learning opportunity designed to link theoretical classroom knowledge with practical field application.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: 401. Open to plant health management majors and plant pathology minors. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

501 Diseases of Ornamentals

Biological and integrated control of important diseases of ornamental plants.
Sp Qtr. 2 2-hr cl. Not open to students with credit for 610.

597 Societal Issues: Pesticides, Alternatives, and the Environment

Consideration of the political, ethical, and economic issues related to pesticide usage, atmospheric pollution, and release of genetically engineered organisms.
Au, Wi, Sp Qtrs. 2 2.5-hr cl. Prereq: Jr or sr standing. LAR course. GEC contemporary world course.

800.01 Introduction to Bacterial and Viral Pathogens of Plants: Phytobacteriology

Taxonomy, biology, ecology, control and host-parasite interactions of bacteria that cause plant disease.
3 cl, 1 1-hr lab and 2 2-hr labs per week for 5 weeks. Prereq: 401 or Micrbiol 521 or permission of instructor. Taught during the first 5 weeks.

800.02 Introduction to Bacterial and Viral Pathogens of Plants: Plant Virology

Introduction to the diversity, biology and life cycles of plant viruses.
3 cl, 1 1-hr lab and 2 2-hr labs per week for 5 weeks. Prereq: 401 or Micrbiol 521 or permission of instructor. Taught during the second 5 weeks.

602 Plant-Microbe Interactions

An introduction to pathogenesis, disease resistance and biological control at the cellular, molecular and biochemical level.
Sp Qtr. 2 2-hr cl. Prereq: 401, Biochem 511 or Micrbiol 509 or permission of instructor.

603 Plant Disease Management

Theory and practice of plant disease management; emphasis on integration of cultural, biological, chemical, and plant breeding techniques.
Sp Qtr. 2 2-hr cl. Prereq: 401, and sr standing in Crop Science, Landscape Hort, Turfgrass Science, Plant Hlth Mgt, or Entomol; or permission of instructor. GEC course.

604.01 Research Methods in Plant Science: Whole Plant

Introduction to scientific skills and modern research methods for the study of plants at the whole plant level.
Au Qtr. Prereq: HCS 300 or PlntBio 300 or PCMB 300 or Biology 114 or PlntBio 300 or 436 or grad standing or permission of instructor. Not open to students with credit for these courses in HCS or PlntBio. Cross-listed in Horticulture and Crop Science, Plant Biology.

604.02 Research Methods in Plant Science: Cell and Tissue Level

Introduction to scientific skills and modern research methods for the study of plants at the cell and tissue level.
Wi Qtr. Prereq: HCS 300 or PlntBio 300 or PCMB 300 or Biology 114 or PlntBio 300 or 436 or grad standing or permission of instructor. Not open to students with credit for these courses in HCS or PlntBio. Cross-listed in Horticulture and Crop Science, Plant Biology.

604.03 Research Methods in Plant Science: Molecular Level

Introduction to scientific skills and modern research methods for the study of plants at the molecular level.
Sp Qtr. Prereq: HCS 300 or PlntBio 300 or PCMB 300 or Biology 114 or PlntBio 300 or 436 or grad standing or permission of instructor. Not open to students with credit for these courses in HCS or PlntBio. Cross-listed in Horticulture and Crop Science, Plant Biology.

610 Diseases of Forest and Shade Trees

Major types of forest and shade tree diseases with emphasis on diagnosis, etiology, epidemiology, and control.
Au Qtr. 2 2-hr cl. Prereq: PlntPhy 401. Not open to students with credit for 510.

612 Turfgrass Diseases

A detailed study of the diseases of turfgrass, factors influencing disease severity, specific measures for disease control.
Sp Qtr. 2 2-hr cl. Prereq: 401.

613 Integrated Turf Health and Pest Management

Identifying the most appropriate genetic, cultural, biological, and chemical programs for reducing pest damage.
Au Qtr. 3 cl, 1 2-hr lab. Prereq: HCS 422, 470, Entomol 462 or 460.01 and PlntPhy 612.

614 Diseases of Field Crops

Major diseases of field crops with emphasis on etiology, epidemiology and management.
Sp Qtr. Prereq: Biology 101 or 113 or PCMB 101 or PlntBio 101 or permission of instructor.

615 Fruit and Vegetable Crop Diseases

Major diseases of fruit and vegetable crops with emphasis on etiology, epidemiology and management.
** Wi Qtr. 2 2-hr cl. Prereq: 401 or equiv. Not open to students with credit for 615.01.

636 Plant Nematology

Bionomics and control of plant-parasitic nematodes.
** Wi Qtr. 3 cl, Prereq: 401.

655 Quantitative Methods in Applied Biology

Review of quantitative methods used in biological research especially emphasizing practical application to agricultural and environmental sciences.
Au Qtr. 3 1-hr lectures. Prereq: Stat 528 or equiv. Not open to students with credit for Entomol 655. Cross-listed in Entomology. Recommended to graduate students beginning their research.

660 Mycology

An introduction to the study of fungi.
Wi Qtr. 2 2-hr lec/lab, 2 hrs lab work arr. Prereq: 300 or 401 or 601 or Biology 114 or permission of instructor. Not open to students with credit for Botany 660.
Plant Pathology

683H Honors Projects UGRD 1-10
Conducting and reporting the honors project.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Agr 590.01H, enrollment in honors program, and permission of honors project supervisor. Repeatable to a maximum of 10 or hrs. Hours repeatable as 683H or in combination with 293, 593, 593H, 599H, 693, or 693H. This course is graded S/U.

685 Diagnostic Field Plant Pathology UGRD 3
Study of traditional and modern diagnostic procedures for diagnosis of plant diseases; study of plant diseases in crop production systems.
Su Qtr. 10 days. Prereq: Preq: 401 or 615, and permission of instructor. Course will be held at Stone Labs with tours of production areas in northern Ohio.

693 Individual Studies UGRD 1-5
Problems may be selected in the various areas of plant pathology.
Su, Au, Wi, Sp Qtrs. Preq: 2.50 cumulative gpa and written permission of instructor. Repeatable to a maximum of 10 or hrs. This course is graded S/U.

694 Group Studies UGRD 2-5
Special group studies of a selected area in plant pathology not provided in other courses.
Su, Au, Wi, Sp Qtrs. Preq: Sr or grad standing. Repeatable to a maximum of 10 or hrs.

702 Plant Disease Epidemiology UGRD 4
Study of the dynamics of plant diseases; statistical modeling of plant disease epidemics.
* Wi Qtr. 2 1-hr lec. Preq: 401, Stat 528, or permission of instructor.

703 Agricultural Genomics: Principles and Applications UGRD 3
Introduction to new developments in genomics and application in agriculture.
Sp Qtr. 2 1.5-hr lec. Preq: MolGen 500 or Biochem 613 or permission of instructor. New developments in agricultural genomics.

704 Advanced Topics in Fungal Biology UGRD 4
Advanced treatment of the nature, genetics, physiology, ecology, and importance of fungi in terrestrial ecosystems with an emphasis on plant pathogens.
* Sp Qtr. 3 1-hr lec; 1 3-hr lab. Preq: PhytoPath 690 or equiv, or permission of instructor.

830 Current Topics in Plant Pathology GRAD 1-2
Readings from the current literature will be examined in detail for both technical and conceptual content.
Su, Au, Wi, Sp Qtrs. 1 1-2-hr cl. Preq: Permission of instructor. Repeatable to a maximum of 10 or hrs.

832 Plant-Bacteria Interactions GRAD 5
Bacterial pathogens and symbionts affecting plant health and productivity; molecular, cellular, and environmental determinants of plant-microbe interactions and successful biological control.
* Sp Qtr. 3 2-hr lec. Preq: 600 or Microbiol 520, MolGen 501 or Microbiol 581, and Biochem 511 or permission of instructor. Not open to students with credit for 102; or to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. FL Admins Cond course.

833 Plant Virology GRAD 3
Plant virus detection, identification, structure, purification, serology, replication, transmission, vector relationships, variability, nomenclature and classification, and virus disease symptoms, physiological effects, epidemiology, economic importance, and control.
* Sp Qtr. 3 1-hr cl. Preq: 600 or equiv, or permission of instructor.

839 Plant Virology Laboratory GRAD 2
Experimental approach to plant virus detection and identification; structure, purification serology, replication, transmission, vector relationships, variability, nomenclature and classification, virus disease symptoms, physiological effects, and epidemiology.
* Sp Qtr. 2 2-hr cl. Preq: conc: 838, or permission of instructor.

841 Molecular Mechanisms of Pathogenicity GRAD 4
The molecular mechanisms used by viruses, bacteria and fungi to parasitize plants. The current status of these areas will be reviewed.
* Au Qtr. 2 2-hr cl. Preq: Biochem 511 or Microbiol 509; or permission of instructor. Video- linked to CARDI, Wooster. Offered every other year.

842 Biochemistry of Plant Responses to Infection GRAD 3
Introduction to the molecular and genetic basis of plant responses to microbial infection and symbiosis.
* Wi Qtr. 2 2-hr cl. Preq: Biochem 511 and 521 or equivs, one 600-level course in plant physiology or plant biochemistry, or written permission of instructor. Biochem 631 or Plant Bio 630 or 631 recommended.

843 Ecology of Plant-Associated Microbes GRAD 5
Review of microbial diversity and ecology as it relates to plants and plant health in natural and managed ecosystems.
Sp Qtr. 2 2-hr lec, 1 1-hr rec. Preq: 602 or permission of instructor.

901 Mentored Teaching in Plant Pathology GRAD 1-5
Students work with faculty mentors to gain intensive hands-on and mentored experiences focused on direct interactions with students and on the scholarly aspects of teaching.
Su, Au, Wi, Sp Qtrs. Preq: Grad standing and completion of OSU FTAD University-wide Orientation on Teaching and Learning; AgrEduc 135 and EduPL 851. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

902 Mentored Extension/Outreach Teaching in Plant Pathology GRAD 1-3
Students work with mentors to gain experiences focused on direct interactions with growers/industry groups and the scholarly aspects of developing/delivering extension-outreach programs and educational materials.
Su, Au, Wi, Sp Qtrs. Arr. Preq: Grad standing. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

995 Seminar GRAD 1
Seminar.
Au, Wi, Sp Qtrs. Preq: Permission of instructor. Repeatable. This course is graded S/U.

999 Research GRAD 1-18
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

Polish

101.01 Elementary Polish I UGRD 5
Introduction to Polish; development of listening, reading, speaking, and writing skills. Not open to students with credit for 101, 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. GEC for lang course. FL Admins Cond course.
Students must register for and complete 5 cr hrs during the qtr.

102.01 Elementary Polish II UGRD 5
Continued study of Polish; development of listening, reading, speaking, and writing skills. Preq: 101 or 101.01 or 5 or hrs of 101.51 or permission of instructor. Not open to students with credit for 102; or to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. FL Admins Cond course. Students must register for and complete 5 cr hrs during the qtr.

103.01 Intermediate Polish UGRD 5
Continued study of Polish; development of listening, reading, speaking, and writing skills. Not open to students with credit for 103; or to native speakers of this language through regular course enrollment or EM credit. GEC for lang course.

104.01 Intermediate Polish II UGRD 5
Readings, oral and written practice, and grammar review. Not open to students with credit for 104; or to native speakers of this language through regular course enrollment or EM credit. GEC for lang course.

405.01 Polish Conversation and Composition UGRD 5
Reading tests of moderate difficulty, conversation, and simple compositions.

407.01 Polish Conversation and Composition UGRD 5
Reading from modern Polish literature, practice in writing and speaking.
Preq: Permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit.

409 Advanced Polish Conversation and Composition UGRD 5
Review of Polish grammar, written compositions, perfection of pronunciation, translation practice, and expansion of vocabulary.
Preq: 407.01. Not open to native speakers of this language through regular course enrollment or EM credit.

630 Polish Literature to 1900 UGRD 5
Survey of Polish literature from its beginnings to 1900.
Preq: 10 cr hrs in literature courses at the 200 level or above, or permission of instructor. Given in English, but students majoring in Slavic will do portions of the readings in the original.

631 Polish Literature 1900 to Present UGRD 5
Survey of Polish literature from 1900 to present.
Preq: 10 cr hrs in literature courses at the 200 level or above, or permission of instructor. Given in English, but students majoring in Slavic will do portions of the readings in the original.

Political Science

100 Introduction to Comparative Politics UGRD 5
Introduction to modern nation-state in diverse institutional forms; problems of state- and nation-building, representation, conflict, and making of government policy in selected countries. 100H (honors) may be available.

101 Introduction to American Politics UGRD 5
Introduction to American politics, the institutions and processes which create public policy, the strengths and weaknesses of the American political systems. 101H (honors) may be available.

110 Contemporary Public Policy Issues UGRD 5
Contemporary challenges to fulfilling the promise of American democracy, including such issues as poverty, discrimination, education, health, environment, and public participation.

145 Global Politics UGRD 5
Cooperation and conflict in world politics. Covers basic theories of international relations and key issues, including security, political economy, international organizations, and the environment. 145H (honors) may be available. Su, Au, Wi, Sp Qtrs. Not open to students with credit for 105. GEC soc sci human, natural, and economic resources and social diversity - international issues (Global) course.

165 Introduction to Politics UGRD 5
Introduction to politics and political science: power, democracy and authoritarianism, political participation, the state, political institutions, subfields of the discipline, and political research methodology. 165H (honors) may be available. Su, Au, Wi, Sp Qtrs. 5 cl. GEC soc sci organizations and polities course. SS Admis Cond course.

201 Introduction to Political Behavior UGRD 5
Focus on concepts such as attitude, role, and group and their application in such areas as voting behavior and political participation. 201H (honors) may be available. 5 cl. GEC soc sci individuals and groups course. SS Admis Cond course.

210 Introduction to Political Theory UGRD 5
An introduction to the field of political theory through classic and contemporary texts and selected case studies. 210H (honors) may be available. 2-2 hr cl. GEC soc sci organizations and polities course. SS Admis Cond course.

211 Introduction to Political Theory: Approaches UGRD 5
Introduces several leading theoretical approaches to the study of politics, such as theories of human nature, social contract theory and theories of history. Au, Wi, Sp Qtrs. 2-2 hr cl. GEC social sciences organizations and polities.

245 The United States in World Politics UGRD 5
The role of the United States in world politics since the Second World War, emphasizing structural change in economic and political-military relations. 245H (honors) may be available. Su, Au, Wi, Sp Qtrs. Not open to students with credit for 215. GEC soc sci organizations and polities and social diversity - international issues (Global) course. SS Admis Cond course.

294.01 Group Studies UGRD 1-5
Group Studies. Repeatable to a maximum of 10 cr hrs.

294.02 Group Studies UGRD 1-5
Group Studies. Repeatable to a maximum of 10 cr hrs.

294.03 Group Studies UGRD 1-5
Group Studies. Repeatable to a maximum of 10 hr hrs.

294.04 Group Studies UGRD 1-5
Group Studies. Repeatable to a maximum of 10 hr hrs.

294.05 Group Studies UGRD 1-5
Group Studies. Repeatable to a maximum of 10 hr hrs.

300 American Politics and Policy Making UGRD 5
An examination of American political institutions and the policy-making process. 5 cl. Not open to students with credit for 101. 304 Ethics and Public Policy UGRD 5
Contemporary approaches to public policy evaluation and their ethical foundations, including efficiency, security, rights, welfare, and equity. 2-2 hr cl.

305 Introduction to Public Policy UGRD 5
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. 5 cl.

367.01 Contemporary Issues in American Politics UGRD 5
Discussion of and critical writing about controversies in contemporary American politics, aimed at fostering analytical abilities in reading comprehension, oral, and written expression. 367.01H (honors) may be available. Au Qtr. 2-2 hr cl or 5 cl. Prereq: 101 or 300 or permission of instructor. English 110 or 111, and soph standing. GEC second writing and soci sci organizations and polities course.

403 Political Psychology UGRD 5
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. Not open to students with credit for Psych 403.

449 Survey Research in Political Science UGRD 5
The conducting of public opinion polls. 2-2 hr cl. Not open to students with credit for 581 or Comm 449. Crosslisted with Comm 449.

470 Ancient and Medieval Political Thought UGRD 5
The study of major works in ancient and medieval political thought, including texts by Plato, Aristotle, Machiavelli and others. Au, Wi, Sp Qtrs. 2-2 hr cl. Not open to students with credit for 670.

471 Early Modern Political Thought UGRD 5
The study of major works in early modern political thought including texts by Hobbes, Locke, Rousseau and others. Au, Wi, Sp Qtrs. 2-2 hr cl. Not open to students with credit for 671.

472 Modern Political Thought UGRD 5
The study of major works in 19th-century political thought, including texts by Marx, Mill, Nietzsche and others. Au, Wi, Sp Qtrs. 2-2 hr cl. Not open to students with credit for 672.

473 Topics in Contemporary Political Thought UGRD 5
An advanced undergraduate-level survey of significant debates in contemporary political theory. Au, Wi, Sp Qtrs. 2-2 hr cl. Not open to students with credit for 673.

485 Techniques of Political Analysis UGRD 5
Introduction to research design, nature of data, its generation and analysis; analysis of political variables. 485H (honors) may be available. 5 cl. Prereq: One course in PolitiSc at the 300 level or above. Not open to students with credit for 585. GEC data analysis course.

489 Political Science Internship UGRD 2
Comprises experience in political institutions or policy processes with analysis of that experience. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of dept. Repeatable to a maximum of 10 cr hrs. This course is graded SU.

496 Study at a Domestic Institution UGRD 1-15
An opportunity for students to study at a domestic institution and receive Ohio State credit for that work. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept. Repeatable to a maximum of 15 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as travel and subsistence costs.

501 The American Presidency UGRD 5
An examination of the American presidency, emphasizing the copyrighted role of the president, the institutionalized presidency, and theories of presidential behavior. 5 cl.

502 Campaign Politics UGRD 5
The organization and strategy of American political campaigns; practical politics seen in the light of knowledge about political behavior and public opinion. 5 cl.

503 Public Opinion UGRD 5
Origins and nature of political attitudes; the content of public opinion; the public’s influence on policy-making. Wi Qtr. 5 cl. Not open to students with credit for 603.

504 Black Politics UGRD 5
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. 5 cl. Not open to students with credit for AFAM 504. Cross-listed in African-American and African Studies.

505 Urban Government UGRD 5
Introduction to the governance of urban communities in the United States. 5 cl.

506 Ohio Politics UGRD 5
Examination of state politics with special reference to Ohio. 5 cl.

507 American State Politics UGRD 5
Comparative analysis of politics in the American states. 5 cl. Prereq: 101 or 300 or permission of instructor. Not open to students with credit for 604.

508 Asian American Politics UGRD 5
An examination of the experiences of Asian Americans in the political process, including public opinion, mass political behavior, elite politics, and contemporary policy debates. Su, Au, Wi, Sp Qtrs. 2-2 hr cl. GEC social diversity in the US course.

509 The Mass Media and American Politics UGRD 5
An overview of the influence of the mass media on contemporary American politics; primary focus on news media with consideration of entertainment programming. Not open to students with credit for 609. 2-2 hr cl.

510 Bureaucracy and Public Policy UGRD 5
An examination of bureaucracies as political institutions, and a consideration of their role in several areas of public policy implementation. 2-2 hr cl. Not open to students with credit for 610.

511 Political Strategy, Public Policy, and the Private Sector UGRD 5
Explores the relationships between business and government, including topics ranging from regulatory politics and legislative lobbying, to trade politics and multinational corporations, to business ethics. 511H (honors) may be available.
Prereq: Rank 3 or higher and enrollment in an honors program; or permission of instructor.

512 Women and Politics UGRD 5
An examination of women's participation in political activity, including changes over time in women's political roles and comparison with the roles of men.

513 Women, Government, and Public Policy UGRD 5
An examination of policymaking on gender-related issues and the impact of women in government.

514 Women and the Law UGRD 5
An examination of the legal status of women and the ways in which law affects the situation of women in American society.

515 The Politics of Legal Decision Making UGRD 5
An examination of the literature relating social-science theories and research to the law, focusing on the criminal justice system.

516 Judicial Politics UGRD 5
Analysis of the roles of judges and lawyers as participants in the American political process; analysis of courts as political institutions.

517 U.S. Congress UGRD 5
Analysis of legislators and legislators, with a focus on the U.S. Congress and some attention to state legislatures and representative organizations in other countries. GEC soc sci organizations and polities course.

518 Gun Politics UGRD 5
Examination of the issues and areas surrounding gun control in the United States.

519 Civil Liberties in the Courts UGRD 5
An examination of civil liberties decisions by American courts, their legal and political bases, and their effects on government and society.

520 The American Constitution and Governmental Powers UGRD 5
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.

521H Supreme Court Decision Making UGRD 5
Study of explanations for Supreme Court decisions; use of those explanations and independent research to predict justices' positions in current cases.

526 The New Religious Politics UGRD 5
Considers how religious beliefs and practices affect politics in a variety of countries: variation in "church-state" relations; religiously-based political divisions; democracy and religion.

527 The Canadian Political System UGRD 5
Explains and analyzes the Canadian political system, including institutional, behavioral, socioeconomic, cultural, and ideological components, often in comparison with the United States' political system.

528 Politics of European Integration UGRD 5
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.

529 European Political Development UGRD 5
Uses experience of France, Germany, Great Britain, and Italy as foundation for understanding emergence, functioning, and sustainability of different types of political regimes over time.

530 Politics of Post-Communist Societies in Eastern Europe UGRD 5
Systematic comparison of the sources, dynamics, and outcomes of political, economic, and social transformations in the former Communist states of Eastern Europe.

531H Seminar in Comparative Politics: Democracy in Muslim Majority Countries UGRD 5
A seminar on democracy in Muslim majority nations, concentrating on such issues as ethnicity, economic development, and colonialism and their effects on these countries' political development.

532 Government and Politics of Southern Europe UGRD 5
Survey of the emergence and distinguishing characteristics of stable democracies and modern societies in Italy, Spain, Portugal, and Greece.

533 Russian Politics UGRD 5
Survey of the politics of Russia and the former Soviet states with emphasis on democratization, economic reform, institutional development, elites, mass behavior and ideology.

534 Government and Politics of Northern Europe UGRD 5
Survey of politics in selected countries of Northern Europe, including Britain, France, Germany, and the smaller European democracies; themes include social welfare, corporatism, parties, and party systems.

535 Government and Politics in Modern Democracies UGRD 5
A survey of the basic institutions and politics of modern democracies, with emphasis on representativeness and democratic stability.

536 Greater China: Politics of China, Hong Kong, and Taiwan UGRD 5
An examination of contemporary politics in the People's Republic of China, Hong Kong, and Taiwan. Focus on the inter-relationships between these three entities.

537 Government and Politics of China UGRD 5
A study of the contemporary political process of Communist China; considerable time will be spent on an analysis of recent political change in China and the process of revolution.

539 Contemporary Politics of South Asia UGRD 5
A survey of the politics of South Asia since 1947; topics include the development and consolidation of democracy, the role of social cleavages in politics, and economic development and reform.

540.01 Latin American Government and Politics: An Overview UGRD 5
A study of political processes, institutions, and groups in Latin America, with emphasis on constitutional, geographical, social and economic environments in which they operate. Not open to students with credit for 540.

540.02 Special Topics in Latin American Politics UGRD 5
Examination of contemporary political challenges confronting Latin America in the twenty-first century, including globalization, poverty, inequality and democratic consolidation. Repeatable to a maximum of 10 or hrs with permission of instructor.

541 Politics of the Developing World UGRD 5
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.

542 Incomplete Democracies: The (Un)Rule of Law in Latin America UGRD 5
This course explores various forms of violence including electoral violence and political assassination, organized crime, police brutality, and other human rights abuses in Latin America.

543 The Politics of Immigration UGRD 5
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.

544 International Security and the Causes of War UGRD 5
Examines various issues regarding international conflict and cooperation, including theories of strategic interaction and the causes of war.

545 Foreign Policy Decision Making UGRD 5
Examination of how political leaders make decisions, emphasizing such issues as leaders' reasoning processes and the impact of public opinion and foreign policy bureaucracies.

546 Politics in the Middle East UGRD 5
Politics of Arab-Israeli relations, Persian Gulf, Islamic fundamentalism, and oil; processes of change and their effects on governments and international relations.

547 Identity Politics UGRD 5
Identity politics explores who controls the meaning of identity in society, examining identity from the perspective of liberal, sociological, and social psychological, structuralist, and institutionalist theories.

548 The Politics of International Terrorism UGRD 5
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.
Political Science 363

550  Theories of International Relations UGRD 5
Various theories of world politics, such as: realism, liberalism, long cycles, domestic and bureaucratic politics, and decision-making level theory.
Sp Qtr. 2 2-hr cl. Prereq: 145.

551  The United Nations System in Global Problem Solving UGRD 5
Activities and potential of the United Nations system in promoting economic well-being, environmental management, resource sharing, social justice, and control of violence.
5 cl.

552  Security Policy During and After the Cold War UGRD 5
An examination of national security and military policy issues and trends since 1945, covers containment, deterrence, Vietnam, nuclear weapons, terrorism, and globalization.
Au Qtr.

553  Political Analysis of International Economic Relations UGRD 5
Examines the relationship between political and economic events in the international system; topics include global interdependence, inequality, scarce resources, periphery nation strategies. 533H (honors) may be available.
5 cl. Not open to students with credit for 653 or 753.

554  Comparative Economic Diplomacy UGRD 5
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.

555  Russian Foreign Policy UGRD 5
Basic concepts about, and choices in Russian foreign policy; development and presentation of patterns of relations with key nations; major problems in future relationships.

556  Global Governance UGRD 5
Examination of emergence and form of global governance, including questions of legitimation, democratization, and enforcement, as well as collective security humanitarian intervention, and proliferation.
Au Qtr. 2 2-hr d.

557  Politics of Globalization UGRD 5
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.
Wi, Sp Qtr.

559  International Environmental Politics UGRD 5
Theories and debates over sustainable development, environment, and effectiveness of international regimes with a focus on international fisheries management and global climate change.

564  Human Rights UGRD 5
Course examines human rights, including the United Nations Declaration on Human Rights; coercive enforcement of rights; as well as hunger, violence, persecution, and economic rights.

565H  Power and Resistance UGRD 5
Focuses on both theoretical treatments of the concept of power and empirical studies of power relations.
Sp Qtr. 2 2-hr d. Prereq: Rank 3 or higher; enrollment in an honors program, or permission of instructor.

567H  Politics and Ethics UGRD 5
Explores the relationship between ethical action and political reality, considering the problem of “dirty hands” in political theory and the conflicts among ethical frameworks that appear to give rise to it.
Wi Qtr. 2 2-hr cl. Prereq: Membership in an honors program or permission of instructor.

568  Islamic Political Philosophy: The Traditional Eras UGRD 5
Islamic political thinking at the time of the Prophet Muhammad, in the Islamic Golden Age, and at the beginning of the nationalist era.

569  Islamic Political Philosophy: The Contemporary Era UGRD 5
Islamic political thinking in the last half of the 20th century and emerging trends in the 21st century.

570  Political Theories of Freedom UGRD 5
Provides an overview of the various ways in which the value of human freedom has been understood and pursued in political life.
Au, Wi, Sp Qtr. 2 2-hr cl.

571  Political Theories of Democracy UGRD 5
An examination of theories of democracy, focusing on normative and descriptive dilemmas such as participation versus liberty in democratic societies.
5 cl. Prereq: 210; or philosophy course work numbered 200 or higher; or grad standing; or permission of instructor.

572  Political Theories of Justice UGRD 5
Focuses on debates among political theorists about the meaning of justice, “What is justice?” and “How might we order our world justly?”
Prereq: 210; or philosophy course work numbered 200 or higher; or permission of instructor.

573  American Political Ideas UGRD 5
An analysis of American ideas on law and government, authority and liberty, oligarchy and democracy.
5 cl. Prereq: 210; or philosophy course work numbered 200 or higher; or grad standing; or permission of instructor.

574  Participation and Voting Behavior UGRD 5
A study of political participation and its correlates, determinants of the vote decision, and analysis of recent American elections.
5 cl. Not open to students with credit for 674.

575  American Political Parties UGRD 5
Theories of political parties, party organization, individual voting behavior, nomination and electoral politics, the party in government.

576  Religion and American Politics UGRD 5
Investigates relationship between politics and religion in America, considering historical context and influence of religion on political culture, coalitions and political behavior.

577  The Comparative Politics of the Welfare State UGRD 5
Examines how political actors manipulate the rules, salience and availability of information to shift political outcomes in their favor.

578  The Comparative Politics of the Welfare State UGRD 5
An analysis of different types of welfare capitalism including social, economic, and political considerations shaping welfare policy, and contemporary welfare reform as exercises in reallocation, reorganization, budget-cutting.

579  Domestic Politics of International Conflict UGRD 5
Examination of war and the impact of domestic politics on the decision; influence of domestic institutions and public opinion on leaders' ability/willingness to wage war.

580  State and Economy UGRD 5
Introduction to comparative political economy; relations between the state and the economy, politics and markets, and democracy and capitalism; the consequences of state intervention.

582  The Politics of Income Inequality UGRD 5
Introduces fundamental of politics of income inequality and redistribution, including social policy development, redistributitional policy differences between countries, and popularity of differing welfare programs.

584  Research Methods in Political Science UGRD 5
Research methods for a variety of political science applications, ranging from data presentation and analysis to legal research.
Prereq: 585, Stat 135, or equiv.

585  Game Theory for Political Scientists UGRD 5
Provides entry-level understanding of the basic concepts of game theory, and how these concepts are applied to the study of political phenomena.

589  Student Internship in Politics and Public Policy UGRD 0-15
Combines experience in political institutions or policy processes with analysis of that experience in light of relevant scholarly literature.
Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

590.01  Topics in Political Science UGRD 3-5
Selected issues and topics in American, international, or comparative politics, political theory or public policy; topics vary by section and instructor.
Repeatable to a maximum of 10 cr hrs.

590.02  Topics in Political Science UGRD 3-5
Selected issues and topics in American, international, or comparative politics, political theory or public policy; topics vary by section and instructor.
Repeatable to a maximum of 10 cr hrs.

590.03  Topics in Political Science UGRD 3-5
Selected issues and topics in American, international, or comparative politics, political theory or public policy; topics vary by section and instructor.
Repeatable to a maximum of 10 cr hrs.

590.04  Topics in Political Science UGRD 3-5
Selected issues and topics in American, international, or comparative politics, political theory or public policy; topics vary by section and instructor.
Repeatable to a maximum of 10 cr hrs.

590.05  Topics in Political Science UGRD 3-5
Selected issues and topics in American, international, or comparative politics, political theory or public policy; topics vary by section and instructor.
Repeatable to a maximum of 10 cr hrs.
364 Political Science

593 Individual Studies UGRD 1-15
Students will devote their time to special projects including papers, exams, and practical political experience.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

596.01H Honors Seminar in Political Science UGRD 3-5
Intensive study of selected political science topics and issues in seminar format; topics vary.
Prereq: Enrollment in an honors program or permission of instructor. Repeatable to a maximum of 20 cr hrs.

596.02H Honors Seminar in Political Science UGRD 3-5
Intensive study of selected political science topics and issues in seminar format; topics vary.
Prereq: Enrollment in an honors program or permission of instructor. Repeatable to a maximum of 20 cr hrs.

596.03H Honors Seminar in Political Science UGRD 3-5
Intensive study of selected political science topics and issues in seminar format; topics vary.
Prereq: Enrollment in an honors program or permission of instructor. Repeatable to a maximum of 20 cr hrs.

596.04H Honors Seminar in Political Science UGRD 3-5
Intensive study of selected political science topics and issues in seminar format; topics vary.
Prereq: Enrollment in an honors program or permission of instructor. Repeatable to a maximum of 20 cr hrs.

597.01 Interdependence and Nationalism in World UGRD 5
Politics
An examination of the relationships industrialized countries have with each other and nations in the Third World; focus on the potential for cooperation and conflict. 597.01H (honors) may be available.
Sp Qtr. 3 1/3-hr cl or 2 2-hr cl or 5 cl. Prereq: Jr or sr standing. Not open to students with credit for 597.

597.02 Political Problems of the Contemporary World UGRD 5
Critical political problems of industrialized and Third World societies, including governmental legitimacy, conflict and violence, social welfare, economic development, and political development. 597.02H (honors) may be available.
Au, Wi, Sp Qtrs. 5 cl. Prereq: Jr or sr standing. Not open to students with credit for 597.

597.03 Gender and Democracy in the Contemporary World UGRD 5
Highlighting perspectives from various contexts across the globe, this course explores issues of gender and democracy in the contemporary world.
Wi Qtr. Prereq: Level 4 rank or permission of instructor. Not open to students with credit for WGSSt 597. GEC contemporary world course.

608 Ethnic Politics in the American Cities UGRD 5
Group conflict along ethnic lines in major American cities: factors contributing to group cohesion in politics, strategies and resources for exercising power through collective political action.
* 5 cl.

612 Political Leadership UGRD 5
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.
Sp Qtr. 2 2-Hr cl. Prereq: 100 or 101 or 300 or permission of instructor. Not open to students with credit for 510.

614 Urban Politics UGRD 5
The study of political problems facing the cities: including community power, poverty, welfare, urban renewal, urban education, law enforcement, and violence.
5 cl.

627.01 Government and Politics in Europe: An Overview UGRD 5
An analysis of European politics, focusing on the political institutions of European democracies, and the emergence of the European Union.
Sp Qtr. Prereq: Two PolitSc courses or permission of instructor.

627.02 Government and Politics in Southern Europe UGRD 5
An analysis of the emergence and distinguishing characteristics of stable democracies and modern societies in Italy, Spain, Portugal, and Greece.
Au Qtr. Prereq: 535 or 627.01, or permission of instructor.

627.04 Government and Politics in Central and Eastern Europe UGRD 5
A comparative analysis of political and social developments in the region since the end of Communism, and the establishment of democratic governments and market economies.
Au Qtr. Prereq: 535 or 627.01, or permission of instructor.

628 Government of Western Europe UGRD 5
A study of the European Union including pooled sovereignty models of international cooperation, and political integration.
Wi Qtr. 2 2-hr cl.

635 Government and Politics of Japan UGRD 5
The government and politics of Japan, with special emphasis being given to the impact of cultural and social patterns on the processes of government with imported political institutions. 
* 5 cl.

636 Southeast Asia UGRD 5
Governments and politics of the Philippines, Indonesia, Indochina, Malaysia, Thailand, and Burma; contemporary problems of this region in relation to world politics.
5 cl.

670 Ancient and Medieval Political Thought GRAD 5
The study of major works in ancient and medieval political thought, including texts by Plato, Aristotle, Machiavelli and others.
2 2-hr cl. Prereq: Grad standing; or permission of instructor.

671 Early Modern Political Thought GRAD 5
The study of major works in early modern political thought including texts by Hobbes, Locke, Rousseau and others.
2 2-hr cl. Prereq: Grad standing; or permission of instructor.

672 Modern Political Thought GRAD 5
The study of major works in 19th-century political thought, including texts by Marx, Mill, Nietzsche and others.
2 2-hr cl. Prereq: Grad standing; or permission of instructor.

673 Topics in Contemporary Political Thought GRAD 5
A graduate-level survey of significant debates in contemporary political theory.
Su Qtr. 2 2-hr cl. Prereq: Grad standing; or permission of instructor.

678 Political Decision-Making and Public Policy UGRD 5
Comparative analysis of decision-making processes of contemporary nations considering the welfare, education, economic, and environmental policy arenas.
3 cl, 1 lab. Not open to students with credit for 578.

679 Policy Analysis UGRD 5
An analysis of the policy process emphasizing the determinants of public policy, theories of public choice, and the implementation, impact, and evaluation of policy decisions.
5 cl.

680 Models of Politics UGRD 5
An introduction of major approaches used in modelling politics, including social choice, game theory, and probability models.
Au Qtr. 5 cl.

684 Introduction to Political Science Research Methods UGRD 5
Introduction to political science research with emphasis on survey and experimental designs, data generation techniques, data processing, and computer utilization.
2 2-hr cl. Prereq: Grad standing in PolitSc or permission of instructor.

685 Methods of Quantitative Analysis: Elementary GRAD 5
Explication, interpretation, and application of techniques for quantitative analysis of political data: descriptive and inferential statistics, with emphasis on bivariate analysis.
5 cl. Prereq: Grad standing in PolitSc or permission of instructor.

686 Methods of Quantitative Analysis: Intermediate GRAD 5
Descriptive and inferential statistics with emphasis on multivariate analysis; additional topics offered as desired and possible: scaling, index construction, sampling, measurement reliability.
5 cl. Prereq: 685 and grad standing in PolitSc, or permission of instructor.

694.01 Contemporary Political Problems UGRD 3-5
Contemporary Political Problems.
Preq: Sr standing and 15 or more hrs in PolitSc. Repeatable to a maximum of 30 cr hrs.

694.02 Contemporary Political Problems UGRD 3-5
Contemporary Political Problems.
Preq: Sr standing and 15 or more hrs in PolitSc. Repeatable to a maximum of 30 cr hrs.

694.03 Contemporary Political Problems UGRD 3-5
Contemporary Political Problems.
Preq: Sr standing and 15 or more hrs in PolitSc. Repeatable to a maximum of 30 cr hrs.

694.04 Contemporary Political Problems UGRD 3-5
Contemporary Political Problems.
Preq: Sr standing and 15 or more hrs in PolitSc. Repeatable to a maximum of 30 cr hrs.

694.05 Contemporary Political Problems UGRD 3-5
Contemporary Political Problems.
Preq: Sr standing and 15 or more hrs in PolitSc. Repeatable to a maximum of 30 cr hrs.

697 Study at a Foreign Institution UGRD 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This course is Progress (P) graded. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.
700 Basic Theories in the Study of American Politics GRAD 5
Examination of basic concepts and approaches; consideration of methodological and substantive problems encountered at various levels of analysis.
2 2-hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

701 Seminar on the American Presidency GRAD 5
Examination of presidential research and analysis of literature on selected aspects of the presidency.
2 2-hr cl. Prereq: 501 or grad standing or permission of instructor. Not open to students with credit for 601.

702 Questions on Surveys GRAD 5
Theories of the survey research process and their implications for question wording and question order effects.
Wi Qtr. 2 2-hr cl.

703 Readings in Public Opinion GRAD 5
Intensive analysis of literature on selected topics in public opinion.
* 2 2-hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

704 Readings in State and Local Politics GRAD 5
Intensive review of selected aspects of the literature on state and local politics in the United States.
2 2-hr cl. Prereq: 604 or 614 or equiv; and grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

707.01 Seminar in Race and Ethnicity in American Politics GRAD 5
An examination of the role of race and ethnicity in American politics, including public opinion, political incorporation, electoral behavior, and minority representation. Intensive readings and discussions on selected topics in the study of race and ethnicity in American politics.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

707.02 Selected Topics in Race and Ethnicity in American Politics GRAD 5
An examination of the role of race and ethnicity in American politics, including public opinion, political incorporation, electoral behavior, and minority representation. Intensive readings and discussions on selected topics in the study of race and ethnicity in American politics.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

709 Seminar in American Politics GRAD 5
Introduction to the central research areas and literature of the field of race and ethnicity in American politics.
Wi Qtr. 5 cl. Prereq: Grad standing in PolitSci or permission of instructor. Not open to students with credit for this topic under 694.

711 Organized Interest Groups GRAD 5
Roles and impact of interest groups in American politics, including formation, recruitment, and maintenance of organizations; grassroots mobilization; and lobbying in legislatures, courts, and bureaucracies.
Wi Qtr. 2 2-hr cl. Prereq: Grad standing.

712 Gender and American Politics GRAD 5
An examination of the role of gender in American politics, including public opinion, political behavior, political institutions, and policy making.
Wi Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor.

713 Political Communication GRAD 5
A graduate-level examination of the role of communication in American politics, acquainting the student with the literature on political communication and stimulating ideas for original research in the field of political communication.
Au Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor. Not open to students with credit for J Com 713. Cross-listed in Journalism and Communication.

715 Judicial Politics: Process and Policy Making GRAD 5
Examination of the judicial process with emphasis on the work of trial courts and the roles of courts as policy makers.
2 2-hr cl. Prereq: Grad standing or permission of instructor.

716 Judicial Politics: Decision Making GRAD 5
Examination of decision making in appellate courts.
* 2 2-hr cl. Prereq: Grad standing or permission of instructor.

717 Readings in Legislative Politics and Policy-Making GRAD 5
A theoretical-empirical analysis of the functioning and policy product of American legislatures; intensive reviews of selected aspects of the legislative literature to be conducted.
2 2-hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

719 African American Political Leadership GRAD 5
An intensive reading course that examines Black people's struggle to acquire power.
Wi Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor. Not open to students with credit for AfrASt 694 (W08) or 717. Cross-listed with AfrASt 717.

725 Basic Theories in the Study of Comparative Politics GRAD 5
Examination of such concepts and theories as structural-functional analysis; general systems theory; and sociocultural systems as determinants of governmental structures.
3 cl. Prereq: Grad standing or permission of instructor.

726 Methods and Approaches in Comparative Politics GRAD 5
Overview of the various approaches, methods, and data used in comparative politics; discussion of the strengths and shortcomings of each approach.
2 2-hr cl. Prereq: Grad standing or permission of instructor.

727.01 Special Topics in European Politics GRAD 5
Intensive examination of special topics in European politics and government.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

727.02 Government and Politics of Southern Europe GRAD 5
A comprehensive overview of government and politics in Greece, Italy, Portugal, and Spain.
Prereq: Grad standing or permission of instructor.

727.03 Government and Politics of Northern Europe GRAD 5
A comprehensive overview of government and politics in the United Kingdom, Germany, France, and the smaller European democracies.
Prereq: Grad standing or permission of instructor.

727.04 The Politics of Central and Eastern Europe GRAD 5
An examination of the transformation of East European societies since the end of the Communist era.
Prereq: Grad standing or permission of instructor.

730 Seminar in Soviet and Post-Soviet Politics GRAD 5
Introduction to the literature on Soviet politics; examination of theoretical and empirical analyses of socio-economic and political transformation in the Soviet successor states.
Wi Qtr. 2 2-hr cl.

734 Readings on Chinese Politics GRAD 5
A seminar for the purpose of reading advanced scholarly materials on contemporary Chinese politics.
* 1 3-hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

735 Comparative Political Economy GRAD 5
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.
Wi Qtr. 1 3-hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs, including cr hrs earned in Econ 735. Cross-listed in Economics.

736 Seminar on East Asian Politics GRAD 5
An examination of approaches to the study of contemporary East Asian politics.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

737 Identity Politics GRAD 5
Explores origins, reproduction, and effects of social identity from perspectives of self, group, society, and state. Includes examinations of nation, ethnicity, gender, and race in identity politics.
Wi Qtr. 1 3-hr cl. Prereq: Grad standing or permission of instructor.

739 Seminar on the Contemporary Politics of South Asia GRAD 5
Examination of core theories in the study of South Asian politics. Topics include party and electoral politics, religious violence, economic development and reform, international conflict.
Prereq: Grad standing or permission of instructor.

740 Problems in Latin American Politics GRAD 5
An advanced seminar devoted to a structured examination of the major theories, concepts, and approaches used in the analysis of Latin American politics.
* 1 3-hr cl. Prereq: 562 or 640; and grad standing or permission of instructor.

741 Politics of the Developing World GRAD 5
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.
2 2-hr cl. Prereq: Grad standing or permission of instructor.

743 Readings on Argentine Politics GRAD 5
Intensive study of selected aspects of Argentine political behavior, with particular attention to non institutionalized political participation and collective action.
Au Qtr. 1 3-hr cl. Prereq: Grad standing or permission of instructor.

744 Democratic Transitions GRAD 5
Theoretical examination of the dynamics of the transition from authoritarian to democratic regimes, with special attention to Southern Europe and South America.
Au Qtr. 1 3-hr cl. Prereq: Grad standing or permission of instructor.

745 Basic Theories in the Study of International Politics GRAD 5
Examination of such basic concepts and theories as equilibrium models, balance of power, national interest, geopolitical configurations.
2 3-hr cl. Prereq: Grad standing or permission of instructor.
366 Political Science

746 Synthesizing International Politics Scholarship GRAD 5
Synthesis of international politics research and writings, intended for advanced graduate students.

2-2 hr cl. Prereq: Grad standing or permission of instructor.

747 Research Methods in International Politics GRAD 5
Examines a number of research techniques and approaches common in international politics such as content analysis, simulation, mathematical modeling, and factor analysis.

2-2 hr cl. Prereq: Grad standing or permission of instructor.

748 Social Theories of International Politics GRAD 5
An examination of the main themes, debates, and social theories of world politics.

Sp Qtr. 2-2 hr cl. Prereq: Grad standing or permission of instructor.

750 Research on Cognition in International Politics GRAD 5
Problem representation and research in cognition in international politics and foreign policy, including computational research, text analysis, and experimentation examining such cognition.

Au Qtr. 2-2 hr cl. Prereq: Grad standing or permission of instructor.

751 Conflict and Peace GRAD 5
Sources and types of social conflict with special attention to international violence; causes of war, their avoidance and control.

^ 2 2-hr cl. Prereq: Grad standing or permission of instructor.

752 Security Policy for the Post-Cold War World GRAD 5
Theories of conflict and war causation and an assessment of their durability in a new era of world politics.

Wi Qtr. 2-2 hr cl. Prereq: Any prior course work in international relations and permission of instructor; or grad standing.

753 International Relations Theory GRAD 5
Examines a number of research techniques and approaches common in international politics such as content analysis, simulation, mathematical modeling, and factor analysis.

Sp Qtr. 2-2 hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

754 International Policy Design GRAD 5
Examines a number of research techniques and approaches common in international politics such as content analysis, simulation, mathematical modeling, and factor analysis.

Sp Qtr. 2-2 hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

755 Comparative Political Theory GRAD 5
Comparative approaches to interpretation of texts of political theory, contemporary as well as classic, including computational research, text analysis, and experimentation examining such cognition.

Au Qtr. 2-2 hr cl. Prereq: Grad standing or permission of instructor.

756 Foreign Policy Design GRAD 5
Problems of designing foreign policy including organizational, contextual, economic, and public opinion constraints; how to create an information retrieval system to aid decision-making.

2-2 hr cl. Prereq: Grad standing or permission of instructor.

757 Comparative Foreign Policies GRAD 5
Examines comparatively the sources and classes of behavior of territorial actors in the international political system.

2-2 hr cl. Prereq: Grad standing or permission of instructor.

758 International Organization GRAD 5
Comprehensive view of international governmental, non-governmental, and business organizations; their roles in solving problems such as poverty, war, pollution; particular attention to the U.N. system.

2-2 hr cl. Prereq: Grad standing or permission of instructor.

760 Transnational Relations GRAD 5
Comprehensive view of transnational relations (trade, agriculture, science, religion, health, labor) between people in different nation-states with particular attention to opportunities for increased citizen control.

2-2 hr cl. Prereq: Grad standing or permission of instructor.

761 Political Psychology and International Relations GRAD 5
A seminar introducing students to theories of international relations that employ psychological perspectives; cognitive world views and political identity, especially nationalism, receive special attention.

Sp Qtr. 2-2 hr cl. Prereq: Grad standing or permission of instructor.

764 Political Analysis GRAD 5
An clinical examination of theories and concepts used in modern qualitative political analysis, including attention to political economy and political institutions.

3 hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

770 Institutions and International Political Economy GRAD 5
Examines international political economy from the perspective of institutions and institutionalist theories in political science, economics and international relations.

Wi Qtr. 1 3-hr cl.

773 International Security and Political Economy GRAD 5
Examination of connections between economic growth/stagnation and interstate conflict, and the effect of economic ties upon cooperation and armed strife.

Prereq: Permission of instructor.

774 Readings in Political Participation and Voting Behavior GRAD 5
Intensive examination of literature on selected topics in the area of participation and voting behavior in the United States.

2-2 hr cl. Prereq: 674 or equiv, and grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

775 Readings in American Political Parties GRAD 5
Intensive study of literature on selected aspects of American political parties.

^ 3 cr. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

776 Comparative Political Institutions GRAD 5
Study of state building process, regime types, and contemporary governmental institutions from a broad cross-national perspective.

3 cl. Prereq: Grad standing or permission of instructor.

777 Comparative Political Behavior GRAD 5
A cross-national examination of political behavior, including such topics as socialization, participation, voting, elite behavior, mass-elite linkages.

3 cl. Prereq: Grad standing or permission of instructor.

778 Comparative Political Parties and Interest Groups GRAD 5
Comparative analysis of the nature and role of political parties and interest groups in contemporary societies.

3 cl. Prereq: Grad standing or permission of instructor.

779 Readings on the Policy Process GRAD 5
Consideration of the basic theories, concepts, and techniques used in policy analysis; the determinants of public policy, and the impact and evaluation of public policy.

2-2 hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

780 The Field of Political Economy GRAD 5
The modern field of political economy; the interaction of markets and politics as well as the use of the tools of economics to explain social behavior.

Wi Qtr. 2-2 hr cl. Not open to students with credit for Econ 780. Cross-listed in Economics.

781 The Political Economy of Income Inequality, Volatility, and Mobility GRAD 5
Examines patterns, political and institutional foundations, and consequences of income inequality, volatility, and mobility, plus dynamic aspects of income distributions. Emphasizes data-handling and empirical approaches.

Wi Qtr.

783H Honors Research UGRD 3-5
Honors Research.

Prereq: 4th yr standing and 40 cr hrs in social sciences, including 15 cr hrs in PolitSc with a record of A in at least half of the PolitSc courses and an average of B in the remainder; and permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs. At least 2 qtrs are required of candidates for the degree BA with distinction in PolitSc. Failure to receive a mark of 9 in this course is a disqualification for special honors. A special topic is assigned to each student and results are tested by the requirement of papers and special examinations. This course is graded SU.

786 Causal Analysis GRAD 5
Analysis of causal models by Simon-Blalock techniques, recursive and nonrecursive path estimation; special topics include measurement error, standardization, and ordinal data.

^ 2-2 hr cl. Prereq: 685, 686, and grad standing or permission of instructor.

787 Scaling and Dimensional Analysis in Political Science GRAD 5
Topics include measurement and data theory, unfolding, proximity and dominance (Guttman) scaling, multidimensional scaling, and factor analysis.

^ 2-2 hr cl. Prereq: 685, 686, and grad standing or permission of instructor.

788 Mathematical Theories of Politics GRAD 5
Introduction to various major mathematical theories of political phenomena and the role of formal analysis in political science.

^ 2-2 hr cl. Prereq: 700 or equiv, and grad standing or permission of instructor.

789 Survey Research Practicum GRAD 5
Hands-on applications for students interested in the planning, implementation, and analysis of a scientific sample survey.

1 2-hr cl. Prereq: 717 or equiv. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

793.01 American Politics
GRAD 1-5
Individual studies in political science; student work is evaluated by papers and/or special examinations. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 50 cr hrs in any combination of decimal subdivisions, with not more than 20 cr hrs in a single subdivision. This course is graded S/U.

793.02 Comparative Politics
GRAD 1-5
Individual studies in political science; student work is evaluated by papers and/or special examinations. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 50 cr hrs in any combination of decimal subdivisions, with not more than 20 cr hrs in a single subdivision. This course is graded S/U.

793.03 International Politics
GRAD 1-5
Individual studies in political science; student work is evaluated by papers and/or special examinations. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 50 cr hrs in any combination of decimal subdivisions, with not more than 20 cr hrs in a single subdivision. This course is graded S/U.

793.04 Political Theory
GRAD 1-5
Individual studies in political science; student work is evaluated by papers and/or special examinations. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 50 cr hrs in any combination of decimal subdivisions, with not more than 20 cr hrs in a single subdivision. This course is graded S/U.

793.05 Political Methodology
GRAD 1-5
Individual studies in political methodology; student work is evaluated by papers and/or special examinations. Su, Au, W'i. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 50 cr hrs in any combination of decimal subdivisions, with not more than 20 cr hrs in a single subdivision. This course is graded S/U.

795 Teaching Political Science
GRAD 2
Examination of issues in teaching political science in colleges and universities and preparation for teaching careers. Wi Qtr. 1 2-hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

800.01 Design of Research in American Politics
GRAD 3
Development of a research design on a selected topic in American politics; consultation on substantive and methodological problems offered by faculty. Wi Qtr. 1 2-hr cl, arr time. Prereq: 45 cr hrs of graduate work in PolSci or permission of instructor. Repeatable hrs include hrs earned in 894.

800.02 Research in American Politics
GRAD 5
Execution of a research design on a selected topic in American politics; consultation on substantive and methodological problems offered by faculty. Sp Qtr. 1 2-hr cl, arr time. Prereq: 800.01 or permission of instructor. Repeatable hrs include hrs earned in 894.

803 Research in Public Opinion
GRAD 5
Development and execution of a research design focusing on a problem in American public opinion; consultation on substantive and methodological problems offered by instructor. * 1 2-hr cl. Prereq: 703 or permission of instructor. Repeatable to a maximum of 10 cr hrs.

805 Experimental Research in Political Psychology
GRAD 5
Experimental methods appropriate for research in political psychology. Wi Qtr. 2 2-hr cl. Prereq: 892 and grad standing; or permission of instructor.

806 Foundations of Political Psychology
GRAD 5
Overview of the field of political psychology; causes, dynamics, and consequences of human thinking and action in politics. Sp Qtr. 1 3-hr cl.

812 Seminar: Political Elites and Leadership
GRAD 5
Advanced seminar on political leadership behavior and political elite structure. Sp Qtr. 2 2-hr cl.

817 Research in Legislative Politics and Policy-Making
GRAD 5
Development and execution of a research design focusing on a particular problem in American legislative research; consultation on substantive and methodological problems offered by instructor. * 1 2-hr cl. Prereq: 717 or equiv. Repeatable to a maximum of 10 cr hrs.

826 Research in Comparative Politics
GRAD 3-5
Research seminar on various topics in comparative politics. 1 2-hr cl. Prereq: 2 polit sc courses in foreign governments at 600-level or above, or equiv. Repeatable to a maximum of 15 cr hrs.

846 Research in International Politics
GRAD 3-5
Research seminar in international politics. 1 2-hr cl. Repeatable to a maximum of 15 cr hrs.
<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>102.01</td>
<td>Elementary Portuguese II</td>
<td>5</td>
<td>Prerequisite: 101 or 101.01 or 101.51. Not open to students with credit for 102, or to native speakers of this language through regular course enrollment or EM credit. GEC for language course. FL Admis Cond course.</td>
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</tr>
<tr>
<td>102.51</td>
<td>Elementary Portuguese II: Individualized Track</td>
<td>1-5</td>
<td>Prerequisite: 101 or 101.01 or 101.51. Not open to students with credit for 102, or to native speakers of this language through regular course enrollment or EM credit. Not open to students with credit for 102, 102.40, or 501. Repeatable to a maximum of 5 cr hrs. GEC for language course. FL Admis Cond course. Students may enroll for fewer than 5 credits and complete the course over more than one quarter. Students may enroll for a maximum of 5 cr hrs of Port I. II in any given quarter.</td>
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<tr>
<td>103.01</td>
<td>Intermediate Portuguese I</td>
<td>5</td>
<td>Continuation of Portuguese grammar; reading of short stories, plays, and novels; increased attention to development of oral proficiency. Wi Qtr. Prerequisite: 102 or 102.01 or 5 cr 102.51 or 102.40 or 501. Not open to students with credit for 103, 502 or native speakers of this language through regular course enrollment or EM credit. GEC for language course.</td>
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</tr>
<tr>
<td>103.51</td>
<td>Intermediate Portuguese I: Individualized Track</td>
<td>1-5</td>
<td>Continuation of Portuguese grammar; reading of short stories, plays, and novels; increased attention to development of oral proficiency. Prerequisite: 102 or 102.01 or 5 cr 102.51 or 102.40 or 501. Not open to students with credit for 103, 502 or native speakers of this language through regular course enrollment or EM credit. Repeatable to a maximum of 5 cr hrs. GEC for language course. Students may enroll for fewer than 5 credits and complete the course over more than one quarter. Students may enroll for a maximum of 5 cr hrs of Port I. II in any given quarter.</td>
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</tr>
<tr>
<td>104.01</td>
<td>Intermediate Portuguese II</td>
<td>5</td>
<td>Reading of Portuguese plays, short stories, and novels; emphasis on oral practice; non-fiction of cultural and historical significance. Sp Qtr. Prerequisite: 103 or 103.01 or 103.51. Not open to students with credit for 104, 502 or to native speakers of this language through regular course enrollment or EM credit. GEC for language course.</td>
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<tr>
<td>104.51</td>
<td>Intermediate Portuguese II: Individualized Track</td>
<td>1-5</td>
<td>Reading of Portuguese plays, short stories, and novels; emphasis on oral practice; non-fiction of cultural and historical significance. Prerequisite: 103 or 103.01 or 103.51. Not open to students with credit for 104, 502 or to native speakers of this language through regular course enrollment or EM credit. Repeatable to a maximum of 5 cr hrs. GEC for language course. Students may enroll for fewer than 5 credits and complete the course over more than one quarter. Students may enroll for a maximum of 5 cr hrs of Port I. II in any given quarter.</td>
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<tr>
<td>150</td>
<td>Introduction to the Literatures of the Portuguese-Speaking World</td>
<td>5</td>
<td>This course offers an overview of major works of the literatures of the Portuguese-speaking world. Students learn about major periods, authors and aesthetic currents. Au Qtr. GEC arts and hums lit and social diversity - international issues (Global) course.</td>
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<tr>
<td>159</td>
<td>Narratives of Travel and Intercultural Contact in the Early Modern Imperial World</td>
<td>5</td>
<td>Studies relationship between literature and empire by reading early modern narratives of travel and intercultural contact, with particular attention to Portuguese role in European expansion. Wi Qtr. GEC arts and hums lit and social diversity - international issues (Global) course.</td>
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<tr>
<td>330</td>
<td>Introduction to Brazilian Culture</td>
<td>5</td>
<td>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. 2 2-hr cl. Knowledge of Portuguese not needed. GEC arts and hums cultures and ideas and social diversity - international issues (Global) course.</td>
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<tr>
<td>331</td>
<td>Portuguese Culture and Society</td>
<td>5</td>
<td>This course examines Portuguese culture, taking into account interactions with other cultural contexts (e.g., in Europe, Africa, Asia, and the Americas). Taught in English. Sp Qtr. GEC culture and ideas and international issues non-western or global course.</td>
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<tr>
<td>335</td>
<td>Cannibal Brazil: Cultural Encounters and Negotiations of Identity in Literature and Culture</td>
<td>5</td>
<td>Explores a fundamental topic within Brazilian culture, from colonial times to present; Cannibalism as cultural practice in both literal and discursive realms. Prerequisite: English 110.01 or 110.02 or 110.03. GEC arts and hums VPA course.</td>
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<tr>
<td>395</td>
<td>Topics in Foreign Study</td>
<td>1-15</td>
<td>Credit from study abroad for courses not offered by department. Su, Au, Wi. Sp Qtr. Arr. Used only to convert 697 credit to more appropriate level. Repeatable to a maximum of 99 cr hrs. Arranged only with permission of Departmental study abroad adviser.</td>
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<tr>
<td>401</td>
<td>Advanced Portuguese Grammar</td>
<td>5</td>
<td>Advanced review of Portuguese grammar. 2 2-hr cl. Prerequisite: 104 or 502 or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit.</td>
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<tr>
<td>402</td>
<td>Portuguese Reading and Listening</td>
<td>5</td>
<td>Development of students' reading and listening skills through newspapers, magazines, radio and TV stories and newscasts. Prerequisite: 104 or 502 or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit.</td>
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<tr>
<td>403</td>
<td>Portuguese Conversation and Composition</td>
<td>5</td>
<td>Intensive practice in conversation and composition based on short stories written by lisposphere authors with review of grammar. 2 2-hr cl. Prerequisite: 104 or 502 or permission of instructor. Not open to students with credit for 202</td>
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<tr>
<td>450</td>
<td>Introduction to the Study of Literatures and Cultures</td>
<td>5</td>
<td>Strategies for reading and extensive practice in analyzing literary and cultural texts from the Portuguese-speaking world. Prerequisite: 401 or 402 or 403 or 502 or permission of instructor.</td>
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<tr>
<td>501</td>
<td>Portuguese for Spanish Speakers I</td>
<td>5</td>
<td>Rapid introduction to Portuguese language intended for students with at least intermediate-level Spanish skills. Wi Qtr. 5 cl. Prerequisite: Spanish 104 or equiv. Not open to students with credit for 101, 102, 103, or 104.</td>
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<tr>
<td>502</td>
<td>Portuguese for Spanish Speakers II</td>
<td>5</td>
<td>Continuation of 501; Portuguese language for students with at least intermediate-level Spanish skills. Su (2nd term), Sp Qtrs. 5 cl. Prerequisite: 501. Not open to students with credit for 101, 102, 103, or 104.</td>
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</tr>
<tr>
<td>510</td>
<td>Portuguese Translation</td>
<td>5</td>
<td>Advanced practice in Portuguese-to-English translation based primarily on the contemporary written Portuguese of Brazil and Portugal, emphasis on formal grammar and style. 3 80-min cl. Prerequisite: 401 or permission of instructor.</td>
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<tr>
<td>551</td>
<td>Literature from the Middle Ages to Neoclassicism</td>
<td>5</td>
<td>Overview of Portuguese and Brazilian literatures from the 12th to 18th centuries, with emphasis on representative authors and literary works. 2 2-hr cl. Prerequisite: 450, or 502 and grad standing, or permission of instructor.</td>
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<tr>
<td>552</td>
<td>Literature from Romanticism to the Present</td>
<td>5</td>
<td>Overview of Portuguese and Brazilian literatures from the 19th and 20th centuries, with emphasis on representative authors and literary works. 2 2-hr cl. Prerequisite: 450, or 502 and grad standing, or permission of instructor.</td>
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<tr>
<td>560</td>
<td>Cultural Expressions of Portugal and Lusophone Africa</td>
<td>5</td>
<td>The culture of Portuguese and Portuguese Africa from their founding to the present through the study of selected Portuguese-language literature, news, and film. 2 2-hr cl. Prerequisite: 450, or 502 and grad standing, or permission of instructor.</td>
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<tr>
<td>561</td>
<td>Cultural Expressions of Brazil</td>
<td>5</td>
<td>Study of the development of Brazilian culture through its Portuguese language, literature, folklore, music, art, and film; special emphasis on contemporary issues. 2 2-hr cl. Prerequisite: 450 or 502 and grad standing or permission of instructor.</td>
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<tr>
<td>595</td>
<td>Special Topics in Foreign Study</td>
<td>1-15</td>
<td>Credit from study abroad for courses not offered by department but eligible for Portuguese major core. Su, Au, Wi. Sp Qtrs. Prerequisite: 401 or 502 or special permission. Used only to convert 697 credit to more appropriate level. Repeatable to a maximum of 99 cr hrs. Arranged only with permission of Departmental study abroad adviser.</td>
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<tr>
<td>597.01</td>
<td>Coloniality and Postcoloniality in the Literatures of Portugal and Portuguese-speaking Africa</td>
<td>5</td>
<td>Focuses on literary representations of the Portuguese colonial experience in Africa in Portuguese and African texts, and their contribution to understanding contemporary postcolonial issues. Wi Qtr. Prerequisite: English 110. GEC social diversity - international issues (Global) and contemporary world course.</td>
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<tr>
<td>597.02</td>
<td>Representing Identity in the Cinema of the Portuguese-Speaking World</td>
<td>5</td>
<td>This course examines how film in the contemporary Portuguese-speaking world (e.g., Brazil, Portugal, Angola) reflect on race, ethnicity, multiculturalism, and transnational contact. Sp Qtr. Prerequisite: English 110. GEC social diversity - international issues (Global) and contemporary world course.</td>
<td></td>
</tr>
<tr>
<td>606</td>
<td>Business Culture and Communication in Portuguese</td>
<td>5</td>
<td>Use of Portuguese in work- and business-related situations; development of oral and written language to be used in business. 2 2-hr cl. Prerequisite: 104 or 502 or permission of instructor.</td>
<td></td>
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<tr>
<td>611</td>
<td>The Portuguese Language</td>
<td>5</td>
<td>Phonetic transcription from tapes of major continental and Brazilian dialects; the phonological pattern of modern Portuguese; general characteristics of its historical evolution from Hispano-Romance. 2 2-hr cr. Prerequisite: 401 or 402 or 403; or 502 and grad standing; or permission of instructor.</td>
<td></td>
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</tbody>
</table>
650 Studies in Literatures and Cultures of the Portuguese-Speaking World
Intensive exploration of a specific topic or problem; topic varies, for example: modern Brazilian novel, Luso-African literature, Portuguese poetry since 1974. * 2 2-hr cl. Prereq: 450 and one 500 level literature and/or culture course or 502 and grad standing, or permission of instructor. Repeatable to a maximum of 15 cr hrs.
693 Individual Studies
Individual Studies. Prereq: Permission of instructor. Repeatable to a maximum of 99 cr hrs. This course is graded S/U.
694 Group Studies
Group Studies. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.
697 Study at a Foreign Institution
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs.
730 Studies in Portuguese Linguistics
Analysis of Portuguese morphology and phonology using contemporary linguistic framework; topic varies from year to year and may be historical or synchronic. Su, Au, Wi, Sp Qtrs. Prereq: Grad standing, or Portguese 611, or Spanish 430, or Linguist 601, or permission of instructor. Repeatable to a maximum of 10 cr hrs.
750 Studies in Literatures and Cultures of the Portuguese-Speaking World
Study of topics in the literature and culture of Brazil, Portugal, or Lusophone Africa. Sp Qtr. Prereq: 461 or 502 and grad standing; or 2 of 651, 552, 660, or 581; or permission of instructor. Repeatable to a maximum of 15 cr hrs.
783H Honors Research
A program of research for each student which includes individual conferences and which culminates in an honors thesis or oral defense. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Approved candidacy for graduation with distinction, which includes faculty adviser and ASC Honors Committee approval of project, a minimum 3.50 pt-hr ratio in the field of distinction, standing, and CPRH commensurate with honors program membership. Repeatable to a maximum of 99 credit hours. This course is graded S/U.
893 Individual Studies
Individual Studies. Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 99 cr hrs. This course is graded S/U.
894 Group Studies
Investigation of minor problems in the various fields of Portuguese literature and language. Prereq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.

**Psychiatry**

793 Individual Studies in Psychiatry
A supervised, scholarly investigation of some aspects of psychiatry in which there is interest by the student and expertise by the faculty. Su, Au, Wi, Sp Qtrs. Prereq: Adequate clinical training in psychiatry and permission of chairperson and instructor. Repeatable to a maximum of 18 or 2 hrs, 1, 2, or 3 months. This course is graded S/U.
850.01 Seminar: Clinical Psychiatry
Prereq: Permission of chairperson and instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.
850.02 Seminar: Group Therapy
Prereq: Permission of chairperson and instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.
850.03 Seminar: Psychotherapy
Prereq: Permission of chairperson and instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.
850.04 Seminar: Psychiatric Literature
Prereq: Permission of chairperson and instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.
850.05 Seminar: Child Psychiatry
Prereq: Permission of chairperson and instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.
999 Psychiatry Research
Research for thesis purposes only. Su, Au, Wi, Sp Qtrs. Prereq: MD and residency in psychiatry. Repeatable. This course is graded S/U.

**Psychology**

100 General Psychology
Introductory psychology, a prerequisite to advanced courses; the application of the scientific method to behavior; topics include learning, motivation, perception, personality, physiological basis of behavior. 100H (honors) may be available. Su, Au, Wi, Sp Qtrs. 5 cr. SS Admin Cond course. This course is available for EM credit. GEC soc sci individuals and groups and social diversity in US course. E100 may be available for honors embedded experience at the regional campuses.
120 The Psychology of Academic and Personal Effectiveness
A survey of theories and practices designed to improve higher level skills in reading, perception learning, and adjustments. 2 cl, 1.2-hr lab. Available at regional campuses only.
220 Introduction to Data Analysis in Psychology
Introduction to statistical analysis of psychological data; random samples, graphical and numerical techniques of descriptive statistics, correlation, regression, probability, sampling distribution, and hypothesis testing. 220H (honors) may be available. Au, Wi, Sp Qtrs. 2 1.5-hr cl, 1.2-hr lab. Prereq: 100 and Stat 145 or Math 130 or Math 148 or equiv. Not open to students with credit for 320 or Stat 245.
220H Introduction to Data Analysis in Psychology
Introduction to statistical analysis of psychological data; random samples, graphical and numerical techniques of descriptive statistics, correlation, regression, probability, sampling distribution, and hypothesis testing. Au, Wi Qtrs. 2 1.5-hr cl. Prereq: 100 and Math 148 or equiv; honors program or permission of department or instructor. Not open to students with credit for 320H or Stat 245.
300 Research in Psychology: An Introduction
301 Psychology of Extraordinary Beliefs
Considers beliefs in extraordinary phenomena through the application of the findings and principles of psychological science. 2 2-hr cl.
302 Introduction to the Psychology of Listening and Reading
The recognition of spoken and written words will be traced from their registration by the senses to their storage in memory. Prereq: 100 or permission of instructor.
303 Positive Psychology
Introduction to the field of positive psychology. Topics include, positive affect, subjective well-being, optimism, psychological strengths, emotional intelligence, compassion, humor and spirituality. 2-2-hr cl.
305 Drugs and Behavior
Introduction to the psychology of licit and illicit psychoactive drug use. Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 100. Not open to students with credit for Psych 597.01 or Psych 394 in SP03.
309 Human Motor Control and Learning
Experimental analyses of the processes underlying the performance, learning and adaptation of movement skills. 2 1.5-hr cl, 1.1-hr lab/qtr, during 1 cl. Prereq: 300 or 220 or 320 or Stat 145 or 245.
310 Basic Psychology: Perception
Theory, methods, and physiological correlates of sensory and perceptual processes; emphasis on the relation of behavior to stimulus variation. Prereq: 100, and 220 or 320 or Stat 145 or 245.
311 General Psychology: Motivation and Action
A behavioristic presentation of experimental work on learning and motivation. Prereq: 100; prereq or concur: 220 or 320, or Stat 145 or 245.
312 Learning, Memory, and Cognition
An introduction to experimental study of human memory, learning, and cognition. Au, Wi, Sp Qtrs. Prereq: 100, and 220 or 320, or Stat 145 or 245.
313 Behavioral Neuroscience
Introduction to the structure and function of the nervous system in relation to behavior. Au, Wi, Sp Qtrs. 4 cl. Prereq: 300.
321 Quantitative and Statistical Methods in Psychology
A concentrated examination of applications of statistical tools in inference in contemporary psychology; hypothesis testing, regression, correlation, and analysis of variance. 321H (honors) may be available. Au, Wi, Sp Qtrs. 2 1.5-hr cl, 1 1.5-hr rec. Prereq: 100, and 220 or 320, or Stat 145 or 245. Not open to students with less than a grade of B in 220 or 320 or Stat 145 or 245.
370 Psychology

321H Quantitative and Statistical Methods in Psychology UGRD 5
A concentrated examination of applications of statistical tools in inference in contemporary psychology; hypothesis testing, regression, correlation, and analysis of variance. Wi, Sp Qters. 3 cl. Prereq: 100 or permission of instructor; 220 or 320, or Stat 145 or 245; honors program or permission of department or instructor. Not open to students with less than a grade of B in 220 or 320 or Stat 245.

325 Introduction to Social Psychology UGRD 5
An introduction to research in social psychology; topics include individual motivation, group behavior, attitudes, and perception of self and others. 325H (honors) may be available. Prereq: 100. Not open to students with credit for 367.01.

325H Introduction to Social Psychology UGRD 5
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: 100; honors program or permission of department or instructor. Not open to students with credit for 367.01.

331 Abnormal Psychology UGRD 5
Examination of current theories and empirical findings regarding the major forms of psychopathology. 331H (honors) may be available. Su, Au, Wi, Sp Qters. Prereq: 100; 331E may be available for honors embedded experience at the regional campuses.

333.02 Human Behavioral Problems: Sexual UGRD 5
Overview of the psychology of human sexuality including the nature and variety of human sexual experience, theories and therapies regarding sexual issues. Prereq: 100.

335 Psychology of Adjustment UGRD 4
Examination of psychological concepts and theories related to individual adjustment and adaptation. Prereq: 100.

340 Introduction to Life Span Developmental Psychology UGRD 5
A survey of developmental psychology including some phylogenetic perspective. 340H (honors) may be available. Su, Au, Wi, Sp Qters. 2.2-hr cl. 340E may be available for honors embedded experience at the regional campuses.

340H Introduction to Life Span Developmental Psychology UGRD 5
Consideration of theories and research on psychological development across the lifespan; includes consideration of social policies that influence developmental outcomes. Prereq: 100; honors program or permission of department or instructor.

350 Contemporary Issues in Developmental Psychology UGRD 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. 3 cl. Prereq: 100.

367.01 Social Psychology UGRD 5
Survey of group processes as they affect individual behavior; topics include individual motivation, group behavior, attitudes, and perception of self and others. Prereq: 100; English 110 or 111 or 111 equiv, and soph standing or above. Not open to students with credit for 325. GEC second writing and soc sci individuals and groups course.

371 Language and the Mind UGRD 5
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. 371H (honors) may be available. Prereq: 100, or permission of instructor. Not open to students with credit for Lingust 271 or 371. Cross-listed in Linguistics. GEC soc sci individuals and groups course.

375 Stereotyping and Prejudice UGRD 4
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: 100. GEC social diversity in the US course.

376 Interpersonal Relationships UGRD 5
Surveys the scientific literature on interpersonal relationships, including family, friends, and romantic partnerships. 2.2-hr cl. Prereq: 100.

389 Career Exploration in Psychology UGRD 3
Designed for psychology majors to explore career paths of interest, as well as facilitate vocational development and acquisition of career search skills. Prereq: 100; psych majors only. Credit does not apply to hours in the psychology major. This course is graded S/U.

394 Group Studies UGRD 1-5
Undergraduate seminar; topics vary and will be announced. * Prereq: 100. Repeatable to a maximum of 10 cr hrs. Including cr hrs earned in 294.

403 Political Psychology UGRD 5
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. Not open to students with credit for PolSci 403.

415H Psychobiology of Aggression UGRD 5
Examination of the biological mechanisms underlying aggression with an emphasis on genes, brain structure, and neurotransmitters to understand animal aggression and human violence.

420 Psychology Applied to Sport UGRD 5
Psychological factors that influence sport participation and performance; psychological techniques to enhance performance; psychological problems associated with sport. 2-2-hr cl. Prereq: 100.

425 Attention and Distraction UGRD 5
Survey of research on attention selected for relevance across areas of psychology, including cognition, neuroscience and psychopathology. Topics include alertness, concentration, distraction and attention disorders. Prereq: 100 or permission of instructor.

462 Psychology of Creativity UGRD 5
A critical examination of conceptual, theoretical, and methodological problems related to the systematic study of creativity; special attention to background factors related to creative behavior. Prereq: 100 or grad standing or permission of instructor.

465 Cognition: Language and Memory UGRD 4
Explores cognitive processes of language comprehension and memory through readings, class discussion, and demonstration experiments. 2-2-hr cl. Prereq: Soph standing or higher.

475 The Self UGRD 5
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. 325 or 367.01 or 375.

485 Psychology and the Law UGRD 4
Contributions of psychological theories to the legal system and the role of mental health professionals in this system. 2-2-hr cl. Prereq: 100 or permission of instructor.

489 Internship in Psychology UGRD 4
Provides psychology majors with an opportunity to intern in a professional setting to integrate academic knowledge with experience in the world of work. Prereq: 100; psych majors only; jr or sr standing and permission of instructor.

500 Experimental Psychology UGRD 5
An overview of experimental methodological techniques with experiments selected for cultural value; as preparation for technical study, and to represent paradigms used in human and animal research. 2 cl, 3 lab hrs. Prereq: 100; 220 or 320, or Stat 145 or 245; and 300; and English 110 or 111 or 111 equiv with permission of instructor. Open only to psych majors. GEC third writing course.

501 Advanced Behavioral Neuroscience UGRD 4
Advanced discussion of contemporary issues in neuroscience, including: synaptic pharmacology, drugs, and behavior, neurodegenerative diseases and the biological bases of psychopathology. Wi Qtr. Prereq: 313.

503 Introduction to Cognitive Psychology UGRD 4
A study of cognitive processes from an information processing perspective, including attention, memory, language representation, reasoning, problem solving, and others. Prereq: 220 or 320 or 321, or Stat 145 or 245, and 310 or 312, or permission of instructor.

505 Historical Development of Psychology UGRD 5
Development of psychology from the 19th century to present status as science and profession. Emphasis on contributions and lives of psychologists. 3.1-5-hr cl. Prereq: 100.

508 Psychology of Judgment and Decision-Making UGRD 5
An overview of current models and empirical research on cognitive processes in human decision-making and judgment under risk or uncertainty. 508H (honors) may be available. Su, Au, Wi, Sp Qters. Field trips may be required. Prereq: 220 or 320, or Stat 145 or 245, or permission of instructor.

508H Psychology of Judgment and Decision-Making UGRD 5
An overview of current models and empirical research on cognitive processes in human decision-making and judgment under risk or uncertainty. Prereq: 220 or 320, or Stat 145 or 245; honors program or permission of department or instructor.

510 Research Methods in Cognitive Psychology UGRD 5
Issues in experimental design; laboratory experiments include topics such as memory, perception, and attention. 2 cl, 1.5-3 lab hr. Prereq: 100; 220 or 320, or Stat 145 or 245; and 300 and jr or sr standing. Open only to psych majors. GEC third writing course.
511 Psychological Testing UGRD 4
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.
2-2 hr cl. Prereq: 100; 220 or 320 or 321 or Stat 145 or 245. Not open to students with credit for 597.02.

512H Human Memory and Cognition UGRD 5
Provides an overview of memory and cognition with a focus on simple memory models.
Prereq: Math 151 or equiv; enrollment in an honors program or by permission of instructor.

513 Introduction to Cognitive Neuroscience UGRD 4
Examination of the neuroscientific approach to the study of cognition; primary focus on the psychobiology of memory, attention, language, and spatial orientation.
Prereq: 313 or permission of instructor.

515 Psychology of Emotions UGRD 5
An examination of emotion focusing on how emotions are interconnected to other basic psychological processes such as cognition, motivation, decision making, and well-being.
2 2-hr cl. Prereq: 100 and 300.

518 Attitudes: Structure, Function, and Consequences UGRD 4
Survey of theory and evidence related to the structure and functional value of attitudes and their effects on information processing, judgments, and behavior.
Prereq: 325 or 367.01 or 375 or 376 or grad standing.

520 Experimental Social Psychology UGRD 5
Training in experimental and qualitative methods in social psychology.
Au, Wi, Sp Qtrs. 2.4 lab hrs. Prereq: 100; 220 or 221 or 320 or Stat 145 or 245; 300 and 325 or 367.01 or permission of instructor. Open only to psych majors. GEC third writing course.

521 Personality Psychology UGRD 4
Overview of theory, method, and practices of personality psychology; job analysis, recruiting, personnel selection, performance appraisal, and training.
Prereq: 100; 220 or 320, or Stat 145 or 245.

522 Organizational Psychology UGRD 4
Overview of theory, method, and practice of organizational psychology; motivation, job attitudes, leadership, groups, organizational design.
Prereq: 100; 220 or 320 or Stat 145 or 245.

525 Psychology of Personal Security: Global and Local Perspectives UGRD 5
Surveys the diverse psychological literature on personal security, a key ingredient in psychological well-being.
Wi Qtr. 2 cl. Prereq: 100.

530 Psychology of Personality UGRD 4
Major theoretical and research orientations in the study of personality; consideration of psychological processes involved in the attribution of personality characteristics.
Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 100.

531 Health Psychology UGRD 4
Introduction to health psychology; health-promoting and health-damaging behaviors; modification of health behaviors; stress and coping; management of illness; stress management strategies.
Prereq: 100. Not open to students with credit for 531.03.

532 Clinical Psychological Science UGRD 5
Surveys the scientific foundations of clinical psychological interventions and assessment techniques and considers their implications for the profession of clinical psychology.
Au, Sp Qtrs. 2.5 hr cl. Prereq: 531. Not open to students with credit for 332.

539 Stress, Social Support, and the Professional Helper UGRD 3
Stress at work and elsewhere: emphasis on treatment through social support. Designed for health professionals, personnel workers, teachers, and related specialists in human services. A Prereq: 100. Not open to students with credit for 640. Available at Newark campus.

540 Counseling Psychology: An Introduction UGRD 4
Introduction to the theories, research, and practice of counseling psychology.
Su, Au, Wi, Sp Qtrs. Prereq: 100.

543 Psychology of Women UGRD 5
Exploration of the nature and causes of sex differences in behavior patterns and factors influencing development of women through psychological theory and research.
Prereq: 100.

545 Cross-Cultural Psychology UGRD 4
Introduction to cross-cultural theories and research in various specialties in psychology (e.g., social, developmental, and abnormal psychology).
Prereq: 100.

550 Psychology of Childhood UGRD 4
Presentation of psychological aspects of growth and development in early and middle childhood. 550H (honors) may be available.
Su, Au, Wi, Sp Qtrs. Prereq: 100.

551 Adolescence UGRD 5
An examination of the biological, psychological, and social aspects of normal adolescent development.
Su, Au, Wi, Sp Qtrs. Prereq: 100.

552 Psychology of the Adult Years UGRD 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: 100.

554 Language Development UGRD 5
A survey of children’s language acquisition, including phonemes, words, morphology, and syntax. Roles for universal grammar, linguistic input, social interaction, and statistical learning are considered.
Au Qtr. 2 2-hr cl. Prereq: 100 or Linguist 201 or permission of instructor.

555 Adolescent Sexuality UGRD 5
An examination of the psychological, biological, and social influences on adolescent sexuality.
Prereq: 100.

560 Educational Psychology UGRD 3
Critical appraisal of the implications for education of modern psychological findings in advanced educational psychology.
Prereq: 100. Available at Marion campus.

571 Psychology of Developmental Disabilities UGRD 4
Overview of developmental disabilities including causes, nature, and psychological characteristics; diagnosis and psychometric assessments; and behavioral, psycho-educational, and biological forms of prevention and intervention.
Ar 20-hr practicum at select off-campus sites involving active, hands-on experience.
Prereq: 100 or permission of instructor.

594 Group Studies UGRD 1-5
Topics vary from quarter to quarter and will be announced at least one month in advance. 594H (honors) may be available.
Prereq: 100. Repeatable to a maximum of 10 cr hrs.

597.01 Contemporary World: Drugs, Behavior and Modern Society UGRD 5
An examination of drugs, their psychological and biological effects, and their widespread use (medicinal, recreational, ceremonial) and abuse in contemporary society.
2 2-hr cl, 1 hr recitation. Prereq: 100 and jr or sr standing or permission of instructor. At least one GEC natural science course is recommended. Not open to students with credit for 305. GEC contemporary world course.

597.02 Contemporary World: Testing in Modern Society UGRD 5
Addresses the history and role of testing, both standardized and otherwise, in the United States and across the globe.
2 2-hr cl. Prereq: jr or sr standing. Not open to students with credit for 511. GEC contemporary world course.

597.03 Contemporary World: Aging, Health, and Psychological Functioning in the Modern World UGRD 5
Addresses primary psychological and physiological changes associated with aging, implications for aging in the modern world, and world perspectives on aging.
2 2-hr cl. Prereq: jr or sr standing and 100 or permission of instructor. GEC contemporary world course.

597.04 Contemporary World: Technology, Efficiency, and Happiness UGRD 5
Course will consider various dimensions for evaluating the behavioral effects of any technology: efficiency, safety, time cost, complexity, environmental impact, social impact.
2 2-hr cl. Prereq: Jr or sr standing. GEC contemporary world course.

600 Psychology of Learning UGRD 5
The study of principles which underlie the discovery, fixation, and retention of behavior. Emphasis on theoretical formulation of the conditions necessary for learning and remembering.
Prereq: 100 and jr or sr standing.

601 Advanced Comparative Psychology UGRD 5
Research on animal behavior by psychologists and ethologists; studies of the behavioral differences between species.
2 2-hr cl. Prereq: 313 or permission of instructor.

602 Psychology of Listening and Reading UGRD 3
Introductory survey of work on reading and the perception of speech; emphasis is on reading with a focus on the underlying perceptual and cognitive processes.
2 1.5-hr cl. Prereq: 100 or grad standing or permission of instructor.

603 Visual Perception UGRD 3
Principles, theories, and methods relevant to the study of visual perception; emphasis on the availability and usefulness of visual information.
Prereq: 310 or grad standing or permission of instructor.
372 Psychology

606 High-Level Vision UGRD 4
Visual perception of solid shape, models of object recognition, perception of self-motion and of action. Prereq: 310 or grad standing or permission of instructor.

608 Introduction to Mathematical Psychology UGRD 4
Survey of current topics in mathematical psychology; topics include measurement theory, scaling, utility theory, subjective probability, decision making in uncertain situations, choice theory. Prereq: 321 or equiv, or permission of instructor.

609 Introduction to Mathematical Models in Experimental Psychology UGRD 4
A survey of mathematical models and theories in important areas of experimental psychology; models of perceptual and cognitive processes, memory, and learning.

610 Contemporary Mathematical Models and Theories in Psychology UGRD 4
Topics include axiomatic, geometric, conjunctive measurement, functional measurement, and artificial intelligence models.

612 Introduction to Cognitive Science UGRD 3
Cognitive science is an interdisciplinary study of the nature of human thought; psychological, philosophical, linguistic, and artificial intelligence approaches to knowledge representation.

613 Biological Bases of Psychopathology UGRD 4
Provides a contemporary overview of the biological bases of several significant psychopathologies, including: mood disorders, schizophrenia, and PTSD/disassociative identity disorders.

615 Psychology of Language UGRD 4
An introduction to high-level language processing, including word recognition, sentence understanding, and discourse processing.

616 Psychological Scaling UGRD 4
Theory and applications of unidimensional and multidimensional scaling methods for proximity and preference data; emphasis on multidimensional scaling.

617 Neural Network Models in Psychology UGRD 4
Basic principles of neural network modeling and their applications in perception, memory, and language.

618 Introduction to Computational Cognitive Neuroscience UGRD 4
Biologically plausible models of perception, memory, language, and high-level cognition. Hands on exercises with a state-of-the-art neural network simulator. Interdisciplinary emphasis. Au Qtr: Prereq: 310 or 312 or graduate standing or permission of instructor. 612 recommended. Not open to students with credit for 788 in Winter 2009.

619 Visual Information Processing UGRD 5
Rapid visual decisions: how the visual representation is formed, stored, and interpreted, enabling one to read, drive, and look for and compare visual objects.

620 Human Performance UGRD 5
Research and theory on perceptual, cognitive, and motor processes that limit performance; topics include memory, attention, pattern discrimination, motor control. Prereq: 100 or grad standing or permission of instructor (310 or 312 or 500 recommended).

623 Biological Clocks and Behavior UGRD 4
Biological rhythms of animals and humans, including ultradian, daily, lunar, tidal and annual cycles; role of nervous and endocrine systems in relationship to behavioral rhythms. Prereq: 313 or permission of instructor.

624 Psychology of Monkeys and Apes UGRD 5
Research on monkeys and apes with emphasis on their learning, arts, memory, curiosity, and neuropsychological problems.

625 Introduction to Auditory Perception UGRD 3
Theory and research in auditory perception; traditional psychoacoustic and new ecological approaches. Prereq: 100; and 219 or 220 or 320, or Stat 145 or 245; and 310 or grad standing or permission of instructor.

630 Psychology of Public Attitudes UGRD 3
Attitude organization and change; study of the determinants of attitude.

632 Sensory Evaluation UGRD 4
Fundamentals of sensory evaluation and the perception of taste, smell, and flavor. Emphasis or statistical interpretation and industrial application. 3 cl, 1 2-hr lab. Prereq: Stat 135 or 145 or 245 or AED/Econ 205 or HCSc 260 or AnimiSci 260 or AgEC 387 or NatRes 222 or Psych 320 and familiarity with Excel. Not open to students with credit for FdsScTe 632. Cross-listed in Food Science and Technology.

644 Hormones and Behavior UGRD 4
Exploration of the interactions among hormones, brain, and behavior through an integrative approach. Prereq: 313 or grad standing or permission of instructor.

646 Psychology of Asian Americans: Children, Youth, and Families UGRD 5
Explores the role of culture in development and adaptation through examination of psychological theories and research concerning Asian American children, youth, and families.

650 Psychobiology of Stress UGRD 4
Explores the effects of stress on physiological and behavioral systems and processes in humans and non-human animals.

684 Psychology of Delinquency UGRD 5
Characterization, risk and protective factors, and treatment; emphasis on current theories and research.

693.01 Individual Studies: Clinical Psychology UGRD 1-15
Individual reading or research projects by special agreement between instructor and student. Prereq: 300, an additional 9 cr hrs of Psych, and permission of instructor. Repeatable to a maximum of 30 cr hrs for undergrads and to a maximum of 45 cr hrs for grads in any combination of decimal subdivisions. Maximum 6 credit hours may be applied to the undergraduate major in psychology. This course is graded S/U.

693.02 Individual Studies: Counseling Psychology UGRD 1-15
Individual reading or research projects by special agreement between instructor and student. Prereq: 300, an additional 9 cr hrs of Psych, and permission of instructor. Repeatable to a maximum of 30 cr hrs for undergrads and to a maximum of 45 cr hrs for grads in any combination of decimal subdivisions. Maximum 6 credit hours may be applied to the undergraduate major in psychology. This course is graded S/U.

693.03 Individual Studies: Developmental Psychology UGRD 1-15
Individual reading or research projects by special agreement between instructor and student. Prereq: 300, an additional 9 cr hrs of Psych, and permission of instructor. Repeatable to a maximum of 30 cr hrs for undergrads and to a maximum of 45 cr hrs for grads in any combination of decimal subdivisions. Maximum 6 credit hours may be applied to the undergraduate major in psychology. This course is graded S/U.

693.04 Individual Studies: Human Experimental Psychology UGRD 1-15
Individual reading or research projects by special agreement between instructor and student. Prereq: 300, an additional 9 cr hrs of Psych, and permission of instructor. Repeatable to a maximum of 30 cr hrs for undergrads and to a maximum of 45 cr hrs for grads in any combination of decimal subdivisions. Maximum 6 credit hours may be applied to the undergraduate major in psychology. This course is graded S/U.

693.05 Individual Studies: Industrial Psychology UGRD 1-15
Individual reading or research projects by special agreement between instructor and student. Prereq: 300, an additional 9 cr hrs of Psych, and permission of instructor. Repeatable to a maximum of 30 cr hrs for undergrads and to a maximum of 45 cr hrs for grads in any combination of decimal subdivisions. Maximum 6 credit hours may be applied to the undergraduate major in psychology. This course is graded S/U.

693.06 Individual Studies: Quantitative Psychology UGRD 1-15
Individual reading or research projects by special agreement between instructor and student. Prereq: 300, an additional 9 cr hrs of Psych, and permission of instructor. Repeatable to a maximum of 30 cr hrs for undergrads and to a maximum of 45 cr hrs for grads in any combination of decimal subdivisions. Maximum 6 credit hours may be applied to the undergraduate major in psychology. This course is graded S/U.

693.07 Individual Studies: Social Psychology UGRD 1-15
Individual reading or research projects by special agreement between instructor and student. Prereq: 300, an additional 9 cr hrs of Psych, and permission of instructor. Repeatable to a maximum of 30 cr hrs for undergrads and to a maximum of 45 cr hrs for grads in any combination of decimal subdivisions. Maximum 6 credit hours may be applied to the undergraduate major in psychology. This course is graded S/U.
693.08 Individual Studies: Psychobiology UGRD 1-15
Individual reading or research projects by special agreement between instructor and student. Prereq: 300, an additional 9 hrs of Psych, and permission of instructor. Repeatable to a maximum of 30 cr hrs for undergrads and to a maximum of 45 cr hrs for grads in any combination of decimal subdivisions. Maximum 6 credit hours may be applied to the undergraduate major in psychology. This course is graded S/U.

693.09 Individual Studies: Mental Retardation and Developmental Disabilities UGRD 1-15
Individual reading or research projects by special agreement between instructor and student. Prereq: 300, an additional 9 hrs of Psych, and permission of instructor. Repeatable to a maximum of 30 cr hrs for undergrads and to a maximum of 45 cr hrs for grads in any combination of decimal subdivisions. Maximum 6 credit hours may be applied to the undergraduate major in psychology. This course is graded S/U.

695.01 Seminars in Psychology: Clinical UGRD 2-5
Prereq: Written permission of instructor; either 219 or 220 or 320, or Stat 145 or 245; and 17 cr hrs of Psych course work above the 200 level; or grad standing. Prereq: 300, an additional 9 hrs of Psych, and permission of instructor. Repeatable to a maximum of 30 cr hrs for undergrads and to a maximum of 45 cr hrs for grads in any combination of decimal subdivisions. Maximum 6 credit hours may be applied to the undergraduate major in psychology. This course is graded S/U.

695.02 Seminars in Psychology: Counseling UGRD 2-5
Prereq: Written permission of instructor; either 219 or 220 or 320, or Stat 145 or 245; and 17 cr hrs of Psych course work above the 200 level; or grad standing. Prereq: 300, an additional 9 hrs of Psych, and permission of instructor. Repeatable to a maximum of 30 cr hrs for undergrads and to a maximum of 45 cr hrs for grads in any combination of decimal subdivisions. Maximum 6 credit hours may be applied to the undergraduate major in psychology. This course is graded S/U.

695.03 Seminars in Psychology: Developmental UGRD 2-5
Prereq: Written permission of instructor; either 219 or 220 or 320, or Stat 145 or 245; and 17 cr hrs of Psych course work above the 200 level; or grad standing. Prereq: 300, an additional 9 hrs of Psych, and permission of instructor. Repeatable to a maximum of 30 cr hrs for undergrads and to a maximum of 45 cr hrs for grads in any combination of decimal subdivisions. Maximum 6 credit hours may be applied to the undergraduate major in psychology. This course is graded S/U.

695.04 Seminars in Psychology: Human Experimental UGRD 2-5
Prereq: Written permission of instructor; either 219 or 220 or 320, or Stat 145 or 245; and 17 cr hrs of Psych course work above the 200 level; or grad standing. Prereq: 300, an additional 9 hrs of Psych, and permission of instructor. Repeatable to a maximum of 30 cr hrs for undergrads and to a maximum of 45 cr hrs for grads in any combination of decimal subdivisions. Maximum 6 credit hours may be applied to the undergraduate major in psychology. This course is graded S/U.

695.05 Seminars in Psychology: Quantitative UGRD 2-5
Prereq: Written permission of instructor; either 219 or 220 or 320, or Stat 145 or 245; and 17 cr hrs of Psych course work above the 200 level; or grad standing. Prereq: 300, an additional 9 hrs of Psych, and permission of instructor. Repeatable to a maximum of 30 cr hrs for undergrads and to a maximum of 45 cr hrs for grads in any combination of decimal subdivisions. Maximum 6 credit hours may be applied to the undergraduate major in psychology. This course is graded S/U.

695.06 Seminars in Psychology: Social UGRD 2-5
Prereq: Written permission of instructor; either 219 or 220 or 320, or Stat 145 or 245; and 17 cr hrs of Psych course work above the 200 level; or grad standing. Prereq: 300, an additional 9 hrs of Psych, and permission of instructor. Repeatable to a maximum of 30 cr hrs for undergrads and to a maximum of 45 cr hrs for grads in any combination of decimal subdivisions. Maximum 6 credit hours may be applied to the undergraduate major in psychology. This course is graded S/U.

695.07 Seminars in Psychology: Psychobiology UGRD 1-5
Prereq: Written permission of instructor; either 219 or 220 or 320, or Stat 145 or 245; and 17 cr hrs of Psych course work above the 200 level; or grad standing. Prereq: 300, an additional 9 hrs of Psych, and permission of instructor. Repeatable to a maximum of 30 cr hrs for undergrads and to a maximum of 45 cr hrs for grads in any combination of decimal subdivisions. Maximum 6 credit hours may be applied to the undergraduate major in psychology. This course is graded S/U.

697 Study at a Foreign Institution UGRD 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Prereq: Au Qtr. Repeatable to a maximum of 60 cr hrs.

699 Undergraduate Research in Psychology UGRD 1-15
Supervised, collaborative research in psychology. Prereq: Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs. Maximum 30 cr hrs may be applied to the undergraduate major in Psychology. This course is graded S/U.

708 Psychology of Judgment and Decision Making GRAD 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. Au Qtr. Repeatable to a maximum of 15 cr hrs. Repeatable to a maximum of 15 cr hrs.

717.01 Family Systems: An Interdisciplinary Approach UGRD 3
to Families of Handicapped Children
Focus on interdisciplinary topics in mental retardation and developmental disabilities. Qualitative and quantitative approaches for resource and problem identification with families of handicapped children, effective parenting skills, strategies to follow at-risk families, and family intervention models. Prereq: Permission of instructor. Not open to students with credit for 717.01 in any of the cross-listed areas. Cross-listed in Allied Medicine, Education: Physical Activity and Educational Services, Human Development and Family Science, Human Nutrition, Nursing, Social Work, and Speech and Hearing Science.

717.02 The Interdisciplinary Team: Clinical and Administrative Issues
Focus on interdisciplinary topics in mental retardation and developmental disabilities. Investigation and critical examination of function of interdisciplinary clinical and administrative teams in mental retardation and developmental disabilities. Prereq: Permission of instructor. Not open to students with credit for 717.02 in any of the cross-listed areas. Cross-listed in Allied Medicine, Education: Physical Activity and Educational Services, Human Development and Family Science, Human Nutrition, Nursing, Social Work, and Speech and Hearing Science.

717.03 Developmental Disabilities
Focus on the most pertinent scientific and societal issues of developmental disabilities. Prereq: Permission of instructor. Not open to students with credit for 717.03 in any of the cross-listed areas. Cross-listed in Allied Medicine, Education: Physical Activity and Educational Services, Human Development and Family Science, Human Nutrition, Nursing, Social Work, and Speech and Hearing Science.

726 Introduction to Behavioral Neuroscience
Team-taught seminar on selected topics from contemporary research areas in the field of behavior neuroscience. Su Qtr. 3 hrs wk (2.1-5 hr cl). Prereq: Permission of instructor. Cross-listed in Neuroscience Graduate Studies Program.

737 Proseminar in Cognitive Science
An in-depth examination of the interdisciplinary field of cognitive science; emphasizes fundamental issues of each discipline, provides illustrations of representative research being conducted at OSU. Prereq: Grad standing or permission of instructor. Cross-listed in CS&SE Industrial Systems Engineering, Linguistics, Philosophy, and Speech and Hearing Science. Repeatable to a maximum of 4 cr hrs.

783.01H Honors Research UGRD 3
A program of readings, conferences, and reports selected to aid the student in completing a senior honors thesis. Sp Qtr. Repeatable to a maximum of 9 cr hrs. Prereq: Candidate for degree with distinction.

783.02H Honors Research UGRD 3
A program of readings, conferences, and reports selected to aid the student in completing a senior honors thesis. Au Qtr. Repeatable to a maximum of 9 cr hrs. Prereq: Candidate for degree with distinction.

783.03H Honors Research UGRD 3
A program of readings, conferences, and reports selected to aid the student in completing a senior honors thesis. Wi Qtr. Repeatable to a maximum of 9 cr hrs. Prereq: Candidate for degree with distinction.

788 Laboratory in Attitude Measurement UGRD 3
Laboratory in Attitude Measurement. Repeatable to a maximum of 6 cr hrs.

789 Survey Research Practicum GRAD 5
Hands-on applications for students interested in the planning, implementation, and analysis of a scientific sample survey. Prereq: Admission to grad interdisciplinary specialization in survey research or permission of instructor. Not open to students with credit for 789 in ADEEcon, AgEdEduc, BusMktg, Econ, EduPL, Geog, JCom, PolitSc, PubHlth, PubPolM, Sociol, or Stat. Cross-listed in ADEEcon, AgEdEduc, BusMktg, Econ, EduPL, Geog, JCom, PolitSc, PubHlth, PubPolM, Sociol, and Stat.

794 Group Studies UGRD 1-5
The topics vary from quarter to quarter and will be announced at least one month in advance. 794H (honors) may be available. Prereq: 15 cr hrs in Psych at the 500 level or above and permission of instructor.

800 Advanced Experimental Laboratory GRAD 3-15
Advanced training in the experimental and quantitative methods in the several areas of general experimental psychology and comparative psychology. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

804 Topics in Advanced Comparative Psychology GRAD 3
Contemporary literature in comparative psychology; topics vary every quarter. Prereq: Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs.

806 Survey of Behavioral Neuroscience I GRAD 3
The first in a three quarter sequence surveying the field of behavioral neuroscience. Covers basic neuroscience, with emphasis on normal and dysfunctional behavior. 3 cl.

807 Survey of Behavioral Neuroscience II GRAD 3
Behavioral neuroscience of motivation and emotion. Topics include reward, pain and aversion, hunger and food intake, stress and anxiety, psychophysics, psychoneuroimmunology, and clinical syndromes. 3 cl. Prereq: 806.

808 Survey of Behavioral Neuroscience III GRAD 3
Behavioral neuroscience of cognition, learning, memory, and language. Topics include cognitive neurosciences and neuropsychology, cortical functions, consequences of brain damage, and the dementia. 3 cl. Prereq: 807.
Psychology

809 History and Systems 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: 18 cr hrs in Psych.

811 Seminar in Experimental Psychology
Seminar in Experimental Psychology.
Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

814 Psychological Issues in Knowledge Representation
Psychological approaches to how knowledge is represented by humans, including empirical and architectural constraints, format differences, generalization abilities, and development of representations.
* 1 2-hr cl, 1 hr arr.

815 Decision Processes
Introductory course in the application of statistical decision theory as a normative model and analytic technique in the experimental study of cognitive processes.
* Prereq: Grad standing in Psych, undergrad inferential statistics strongly recommended.

816 Human Performance Theory
Research and theory on the discrete and on the continuous cases of human information processing; topics include input processes, central processing functions, and output processes.
* Prereq: 820 or written permission of instructor.

819.04 Seminars in Industrial and Organizational Psychology: Theoretical Developments and Issues
Theoretical developments and issues.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

820 Fundamentals of Factor Analysis
Basic Common Factor Model and its application in psychology; model, communality estimation, factor extraction, orthogonal and oblique rotation, factor scores, confirmatory factor analysis of computer programs.
Prereq: Permission of instructor.

821 Fundamentals of Item Response Theory
This course will introduce the basic concepts underlying item response theory and provide an overview of more advanced topics.
1 2.5-hr cl. Prereq: 828 or permission of instructor.

824.01 Seminars in Psychological Measurement: Models for Psychophysics
Models for Psychophysics.
Repeatable to a maximum of 10 cr hrs.

824.02 Seminars in Psychological Measurement: Models for Measurement and Scaling
Models for Measurement and Scaling.
Repeatable to a maximum of 10 cr hrs.

824.03 Seminars in Psychological Measurement: Models for Interpersonal Analysis
Models for Interpersonal Analysis.
Repeatable to a maximum of 10 cr hrs.

828 Statistics in Psychology
Basic concepts of descriptive and inferential statistics; includes estimation, hypothesis testing, and introductory treatment of analysis of variance, correlation and regression, and non-parametric techniques.
2 1.5-hr cl, 2 lab hrs. Prereq: 320, or Stat 145, or equiv and grad standing in Psych, or permission of instructor.

827 Analysis of Variance
Statistical inference in analysis of variance designs; basic concepts and procedures in one-way designs; factorial, repeated measures, randomized blocks, mixed models designs; procedures for planned and post hoc comparisons.
2 1.5-hr cl, 2 lab hrs. Prereq: 826 or equiv.

828 Correlational Analysis
Correlation and regression techniques for quantitative and qualitative data analysis; simple linear regression and correlation, multiple linear regression, nominal scales, interactions; other related multivariate methods; use of computer programs.
2 1.5-hr cl, 2 lab hrs. Prereq: 827 or equiv.

830 Covariance Structure Models
Theory and methods of testing models of covariance structures; general mathematical models, identification, parameter estimation, goodness of fit, model modification, and the use of computer programs such as LISREL.
Prereq: 820 and 828, or permission of instructor.

831.01 Seminars in Psychological Statistics: Analysis of Variance
Prereq: Permission of instructor. Repeatable to a maximum of 40 cr hrs.

831.02 Seminars in Psychological Statistics: Experimental Design
Prereq: Permission of instructor. Repeatable to a maximum of 40 cr hrs.

831.03 Seminars in Psychological Statistics: Factor Analysis
Prereq: Permission of instructor. Repeatable to a maximum of 40 cr hrs.

831.04 Seminars in Psychological Statistics: Mathematical Models and Theory
Prereq: Permission of instructor. Repeatable to a maximum of 40 cr hrs.

831.05 Seminars in Psychological Statistics: Non-Parametric Statistics
Prereq: Permission of instructor. Repeatable to a maximum of 40 cr hrs.

831.06 Seminars in Psychological Statistics: Quasi-Experimental Design
Prereq: Permission of instructor. Repeatable to a maximum of 40 cr hrs.

831.07 Seminars in Psychological Statistics: Advanced Multivariate Analysis
Prereq: Permission of instructor. Repeatable to a maximum of 40 cr hrs.

831.08 Seminars in Psychological Statistics: Current Practices and Trends
Prereq: Permission of instructor. Repeatable to a maximum of 40 cr hrs.

831.09 Seminars in Psychological Statistics: Computer Simulation Research
Prereq: Permission of instructor. Repeatable to a maximum of 40 cr hrs.

831.10 Seminars in Psychological Statistics: Special Topics
Prereq: Permission of instructor. Repeatable to a maximum of 40 cr hrs.

832 Lifespan Sociomoral 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.

834 Psychology ofInfancy
Psychological development during the first four years of life with particular reference to neonatal period and research methodology in studies involving infants.

835 Child Development
Major developmental aspects of childhood; review of theory, methodology, research studies, and historical and contemporary writing about children; consideration of interdisciplinary approaches.

836 Adolescence
Comprehensive view of adolescence as a stage in human development; theory, methodology, research and application to family, school and community, relation to other developmental stages. Not open to students with credit for 836.01.

837 Maturity and Aging
Psychology of adulthood and aging; social and intimate interactions; problems of coping; normative episodes; stress; cognitive functioning and influence of context. Not open to students with credit for 836.02.

840 Practicum in Developmental Psychology
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.
1 cl, 1 lab hrs. Prereq: 2nd yr grad standing in psych and permission of instructor. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

841 Current Issues in Developmental Psychology
An examination of current issues in developmental psychology, especially fundamental questions, controversies and application. Topics vary year-to-year.
1 3-hr cl. Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

842.01 Seminar in Developmental Psychology: Current Theoretical Issues
Prereq: Permission of instructor. Selected topics. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

842.02 Seminar in Developmental Psychology: Development of Dimensions of Cognitive Differences
Prereq: Permission of instructor. Selected topics. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

842.03 Seminar in Developmental Psychology: Development of Social Cognition
Prereq: Permission of instructor. Selected topics. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.
842.04 Seminar in Developmental Psychology: Cultural Influences on Human Development

Ethnic Minority Children and Adolescence.
Prereq: Permission of instructor. Selected topics. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

842.05 Seminar in Developmental Psychology: Social Development During Adolescence
Prereq: Permission of instructor. Selected topics. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

842.06 Seminar in Developmental Psychology: Development of Creative Behavior
Prereq: Permission of instructor. Selected topics. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

842.07 Seminar in Developmental Psychology: Deviant Behavior in Childhood and Adolescence
Prereq: Permission of instructor. Selected topics. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

842.08 Seminar in Developmental Psychology: Aging and Senescence
Prereq: Permission of instructor. Selected topics. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

842.09 Seminar in Developmental Psychology: The Development of the Self Concept
Prereq: Permission of instructor. Selected topics. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

841.11 Seminar in Developmental Psychology: Deafness and Communication Disorders
Development of Language: Deafness and Communication Disorders.
Prereq: Permission of instructor. Selected topics. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

843.02 Cognitive, Organic, and Structural Theories
Comparative presentation of significant major historical and modern developmental theories with specific evaluation of their relevance in the formulation of a comprehensive psychological theory.
Sp Qtr.

844.01 Psychopathology of Childhood: Concepts
A study of psychopathological conditions of childhood, such as autism, schizophrenia, neurosis, acting out, and behavior problems from a developmental point of view.
Prereq: Permission of instructor.

845 Cognitive Development
Intensive survey of theory and research in cognitive development, including development of perception, language, memory, concepts, reasoning, academic skills, and social cognition.
Sp Qtr. 1 3-hr d.

846 Current Issues in Cognitive Development
Current Issues in Cognitive Development.
Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

847 Language Development
Survey of language acquisition, including phonemes, words, morphology, syntax. Considers universal grammar, linguistic input, social interaction, and statistical learning. Training in use of CHILD/ES database.
W Qtr. 1 3-hr cl. Prereq: Grad standing.

849 Research Methods in Developmental Psychology
A critical survey and evaluation of concepts and techniques in study of developmental psychology.
3 cr. Not open to students with credit for 822.

851 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 in psych.

852 Practicum on the Teaching of Psychology
Lecture preparation, micro-teaching and other practice, assessment and feedback, organization of effective discussions and use of electronic media.
Prereq: Grad standing in Psych.

854 Issues in Adult Psychopathology
To survey the phenomena of psychopathology in adults and become familiar with the present diagnostic system used by the majority of mental health professionals.
Prereq: Permission of instructor.

855 Child Behavior Assessment and Therapy
Assessment and treatment approaches for child behavior.
Prereq: Permission of instructor.

859 Seminars in the Psychology of Exceptional Children and Adults
Advanced topics in research strategies and methodology; specialized topics on the growing edge of the psychology of exceptional children and adults.
Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs.

860 Theories of Personality
A critical consideration of the theories of personality structure psychology.
Prereq: Advanced work in personality and social Psych and permission of instructor.

861 Research Design and Methods in Clinical Psychology
Introduction to the theory and use of clinical methods in psychology, designed for first-year graduate students in clinical psychology.
Prereq: Permission of instructor. Open only to clinical Psych grad students. Repeatable to a maximum of 6 cr hrs.

862 Positive Psychology
Introduction to the field of positive psychology. Topics include positive affect, subjective well-being, optimism, psychological strengths, emotional intelligence, compassion, humor, and spirituality.
Sp Qtr. 1 2.5-hr cl.

864.01 Psychological Appraisal: Lecture
Concepts and procedures for appraising human behavior. Theories and methods of psychological appraisal; integration of different theories and approaches.
Prereq: Permission of instructor.

864.06 Psychological Appraisal: Special Topics
Concepts and procedures for appraising human behavior. Special Topics.
* Prereq: Permission of instructor. Repeatable to a maximum of 8 cr hrs. Course ordinarily involves both classroom and practicum experiences.

865 Introduction to Clinical Psychology
Overview of clinical interviewing skills, theory and application of a cognitive-behavioral orientation to psychotherapy and ethical issues in clinical psychology.
1.25-hr cl. Prereq: Admission to psychology's clinical doctoral program.

866.02 Interventions with Individuals: Behavior Modification
Concepts and practices of various interventions into the troubled behavior of individuals.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. Course ordinarily involves both classroom and practicum experience.

968 Systematic Theory in Social Psychology
Survey of major classic and contemporary theories in social psychology and discussion of the role of theory in scientific endeavor.
Prereq: Permission of instructor. Not open to students with credit for this topic under 873.

870 Advanced Social Psychology
Survey of research and theory in experimental social psychology; covers attitudes, social cognition, group processes, and related topics.
Prereq: Grad standing.

871.01 Survey of Social Psychology: Social Cognition
Introduction to the cognitive underpinnings of social behavior.
Prereq: Grad standing in Psych or 870 or permission of instructor.

871.02 Survey of Social Psychology: Social Motivation
Survey of research on motivational underpinnings of social behavior.
Prereq: Grad standing in Psych or 870 or permission of instructor.

872 Social Psychology Laboratory
Advanced training in methods and data collection in the areas of social psychology, laboratory, and field experience.
2 cl, 1 lab hr. Prereq: Permission of instructor. Repeatable to a maximum of 36 cr hrs.

873.01 Seminar in Social Psychology: Contemporary Attitude Theory and Research
Prereq: 870 or 875 or permission of instructor. Repeatable to a maximum of 18 cr hrs.

873.02 Seminar in Social Psychology: Social Behavior and Personality
Prereq: 870 or 875 or permission of instructor. Most decimals offered every other year. Repeatable to a maximum of 18 cr hrs.

873.03 Seminar in Social Psychology: Attribution Theory Research
Prereq: 870 or 875 or permission of instructor. Most decimals offered every other year. Repeatable to a maximum of 16 cr hrs.

873.04 Seminar in Social Psychology: Social Cognition
Prereq: 870 or 875 or permission of instructor. Most decimals offered every other year. Repeatable to a maximum of 16 cr hrs.

873.05 Seminar in Social Psychology: Current Research Trends
Prereq: 870 or 875 or permission of instructor. Most decimals offered every other year. Repeatable to a maximum of 16 cr hrs.
Psychology

873.06 Seminar in Social Psychology: Group Processes GRAD 3-5
Prereq: Written permission of instructor. Most decimals offered every other year. Repeatable to a maximum of 18 cr hrs.

873.07 Seminar in Social Psychology: The Self GRAD 3-5
Prereq: Written permission of instructor. Most decimals offered every other year. Repeatable to a maximum of 18 cr hrs.

874 Brain and Cognition GRAD 4
Cognitive processes in perception, attention, memory, and language are examined from information processing and neuropsychological perspectives; emphasizes how cognition arises in the brain.
Prereq: 20 cr hrs in Psych or permission of instructor.

875.01 Practicum in Social Psychology I GRAD 3
Survey and supervised experience in using the technique and research designs of social psychology.
Au Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

875.02 Practicum in Social Psychology II GRAD 3
Survey and supervised experience in using the technique and research designs of social psychology.
Wi Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

875.03 Practicum in Social Psychology III GRAD 3
Survey and supervised experience in using the technique and research designs of social psychology.
Sp Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

876.01 Research Methods in Social Psychology I GRAD 3
Laboratory research, field research, research writing, and criticism. Introduction to methods in experimental social psychology; focus on laboratory-based procedures and on problems and issues of scientific inference.
* Prereq: Written permission of instructor.

876.02 Research Methods in Social Psychology II GRAD 3
Laboratory research, field research, research writing, and criticism. Introduction to quasi-experimental methods; focus on problems and issues in conducting non-laboratory and field research.
* Prereq: Permission of instructor.

876.03 Research Methods in Social Psychology III GRAD 3
Laboratory research, field research, research writing, and criticism. Introduction to research writing and critique; focus on preparation of reviews of theoretical and empirical papers.
Prereq: Permission of instructor.

877 Human Learning I: Learning GRAD 4
Introductory survey of the theoretical and empirical issues in human learning; emphasis on the analysis of learning tasks and the conditions under which learning occurs.

878 Human Learning II: Memory GRAD 4
Theoretical issues and experimental research on the topic of human memory.

879 Human Learning III: Cognitive Processes GRAD 4
Theoretical and experimental research in several areas of cognition including concept learning, problem solving, and reasoning.
2 1.5-hr cl. At least 10 cr hrs of undergrad Psych course work.

881 Seminar: Counseling Older Adults GRAD 3
Prereq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.

882 Seminar: Tests and Assessment in Counseling GRAD 3
Prereq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.

883 Seminar: Ethics and Professional Issues GRAD 3
Prereq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.

884 Seminar: Cognitive Approaches to Counseling GRAD 3
Prereq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.

885 Seminar: Counseling Women GRAD 3
Prereq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.

886 Seminar: Psychological Assessment in a VA Hospital Setting GRAD 3
Prereq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.

887 Seminar: Existential and Phenomenological Approaches to Counseling GRAD 3
Prereq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.

888 Seminar: Foundations of Multicultural Counseling and Therapy GRAD 5
Prereq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.

889 Seminar: Counseling Supervision GRAD 3
Prereq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.

890 Seminar: Adult Career Development Problems GRAD 3
Prereq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.

899 Research in Psychology GRAD 1-18
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

Public Affairs, John Glenn School

100 Public Affairs Survey UGRD 1
Introduction to the Public Affairs major at Ohio State, as well as University and Glenn School academic policies and procedures.
Prereq: Permission of instructor. This course is graded S/U.

200 Introduction to Public Affairs UGRD 5
Outlines the public affairs profession and discusses how policy decisions are formulated, implemented and evaluated.
Su, Au, Wi, Sp Qtrs.

240 Public Service and Civic Engagement UGRD 5
Outlines leadership strategies necessary to be an engaged citizen in communities.
Su, Au, Wi, Sp Qtrs.

290 Leadership in the Public and Nonprofit Sectors UGRD 5
Focuses on leadership development theories in the public and nonprofit sectors.
Su, Au, Wi, Sp Qtrs.

293 Individual Studies UGRD 1-5
Individual studies in public affairs.
Prereq: Freshman standing and permission of Associate Director of Academic Affairs and Research. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

294 Group Studies UGRD 1-5
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 10 cr hrs.

337 Introduction to Nonprofit Organizations UGRD 5
An introduction 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 ArtsSci 337. Cross-listed in ArtsSci.

522 Introduction to Public Policy Analysis UGRD 5
Introduction to analytical techniques employed at policy formulation, implementation, and evaluation stages of public policy analysis process, strengths and weaknesses of techniques; research strategies development.
Su, Su Term 1 Qtrs. 2-2.5 hr cl.

531 State and Local Government Finance UGRD 5
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: Econ 530 or PubAffs 730 or equivalent. Not open to students with credit for Econ 531. Cross-listed in Econ.
589 Student Internship in Public Affairs: UGRD 1-5
Washington DC
Provides internship credit for students engaged in internships that explore public policy issues and links experience to theoretical foundations.
594 Group Studies UGRD 1-5
Designed to give groups of students an opportunity to pursue special studies in topics not otherwise offered. Repeatable to a maximum of 15 or hrs.

631 Federal Finance and Fiscal Policy UGRD 3
The economics of government spending and taxation; analysis of the fiscal role and instruments and their effects on the economy.
^ 1.25-hr cl. Prereq; Econ 530 or equiv. Not open to students with credit for 630 or Econ 631. Cross-listed in Economics.
633 State and Local Government Finance UGRD 3
Economic analysis of revenues and expenditures of state and local governments; vertical and horizontal relationships between agencies and units; specific problems in these areas.
^ 1.25-hr cl. Prereq; Econ 530 or equiv. Not open to students with credit for Econ 633. Cross-listed in Economics.
670 Rebuilding Failed and Weak States UGRD 5
Tackles the question of how to design policies and programs to rebuild failed and weak states into functioning, if not vibrant democracies.
^ Sp Qtr. 2.2-hr cl. Prereq; Second yr standing or higher or permission of instructor. Not open to students with credit for IntStds 670. Cross-listed in International Studies.
678.01 Public Affairs Decision-Making UGRD 5
Capstone for PubAfrs majors to gain exposure to current public policy issues and competing interests and actors involved in the creation of legislation and policy.
Prereq: Jr standing. Not open to students with credit for PubAfrs 678.02.
678.02 Public Affairs Decision-Making: Washington DC UGRD 5
Outlines decision making process in the public and nonprofit sectors.
Su, Au, Wi, Sp Qtrs. Prereq: Jr standing. Concur: 589 and 679.02. Not open to students with credit for 678.01.

679.01 Policy Analysis Application UGRD 5
Capstone course for PubAfrs majors to write an analytic policy analysis paper.
Prereq: Jr standing. Not open to students with credit for PubAfrs 679.02.
Focuses on the application of public policy analysis and understanding the impact of that analysis.
Su, Au, Wi, Sp Qtrs. Prereq: Jr standing. Concur: 589 and 679.02. Not open to students with credit for PubAfrs 679.01.

693 Individual Studies UGRD 1-5
Individual Studies in Public Affairs.
Prereq: Jr standing and permission of Associate Director of Academic Affairs and Research. Repeatable to a maximum of 10 or hrs. This course is graded S/U.
699 Undergraduate Research UGRD 1-15
Thesis research in public affairs.
Prereq: 4th yr standing and permission of instructor under whose supervision the work is to be completed and the Associate Director of Academic Affairs and Research. Repeatable to a maximum of 15 or hrs.

730 Public Finance GRAD 5
Comprehensive survey and analysis of the principle fiscal activities of contemporary governments; logic of public sector activity, taxation principles and practice, intergovernmental relations, and current fiscal problems.
Wi Qtr. 2.2-hr cl. Prereq; 830 or Econ 501A and grad standing, or permission of instructor. Not open to students with credit for Econ 630 or 730. Cross-listed in Economics.

795 Public Policy: The Business-Government Relationship GRAD 4
Business tools and strategy for influencing government; evolution and direction of public policy toward business.
^ 2.2-hr cl. Prereq: Sr standing or permission of instructor.

796 Managing in the Political Environment GRAD 4
Introduction to public policy process and stakeholder approaches to issue management; strategic options and policy tools (political action committees, advocacy, and image advertising), state policy incentives, and international relations.
^ 2.2-hr cl. Prereq: Sr standing or permission of instructor.
797 Interdepartmental Seminar GRAD 1-5
Two or more departments may collaborate in presenting seminars in subjects of mutual interest topics to be announced.
^ Repeatable by permission.
797H Public Policy: The Business-Government Relationship UGRD 4
Business tools and strategy for influencing government; evolution and direction of public policy toward business.
^ 2.2-hr cl. Prereq: Sr standing or permission of instructor.
378 Public Affairs, John Glenn School

836 Financial Management GRAD 3
Exploration of capital programming and budgeting, debt management, and other aspects of major urban capital developments.

837 Grants Policy and Administration GRAD 4
Investigation of grant-related policy issues, the distributional impact of grant policy, and how federal grants may have influenced city-suburban hardship disparities.

850 The Political Economy of Administrative Regulation GRAD 3
Development of an understanding of the origin, intent, and technical elements of administrative regulation with special reference to economic and social regulation.

851 Current Issues, Practices, and Concepts in Administrative Commission Regulation GRAD 3
Focus on the economic regulation of transport, power, and communications, and the social regulation of business in the form of environmental and safety standards.

852 Governmental and Non-Profit Accounting GRAD 4
The application of accounting principles to governments and other not-for-profit entities; problems relating to funds, appropriations, and budgetary controls.

870 Urban Policy and Management I GRAD 3
Management processes affecting city growth or decline, and issues facing those involved in the administration of an urban area.

871 Urban Policy and Management II GRAD 3
Introduction to the field of economic development, emphasizing the role of public management.

880.02 Advanced Seminar: Fiscal Policy and Management GRAD 1-6
Special studies of selected problems which may include readings, case studies, internships, field investigations, simulation, system analysis, role playing, team teaching, and other experimental techniques.

880.04 Advanced Seminar: Human Resources Policy and Management GRAD 1-6
Special studies of selected problems which may include readings, case studies, internships, field investigations, simulation, system analysis, role playing, team teaching, and other experimental techniques.

880.05 Advanced Seminar: Management Information Systems' Administration GRAD 1-6
Special studies of selected problems which may include readings, case studies, internships, field investigations, simulation, system analysis, role playing, team teaching, and other experimental techniques.

880.06 Advanced Seminar: Public Policy and Management GRAD 1-6
Special studies of selected problems which may include readings, case studies, internships, field investigations, simulation, system analysis, role playing, team teaching, and other experimental techniques.

880.07 Advanced Seminar: Regulation Policy and Management GRAD 1-6
Special studies of selected problems which may include readings, case studies, internships, field investigations, simulation, system analysis, role playing, team teaching, and other experimental techniques.

880.08 Advanced Seminar: Urban Policy and Management GRAD 1-6
Special studies of selected problems which may include readings, case studies, internships, field investigations, simulation, system analysis, role playing, team teaching, and other experimental techniques.

890 Logic of Inquiry for Policy and Management Science GRAD 5
Explore research paradigms to determine how they suit ones values, research interests and objectives. Determine object of study, approaches and language used to acquire/disseminate knowledge.

1. 2.5-hr cl. Prereq: 730 or Econ 730.
2. 1.5-hr cl. Prereq: 870.
3. 2.5-hr cl. Prereq: 730 or Econ 730.
4. 2.5-hr cl. Prereq: AcctMIS 310 or equiv or permission of instructor. Not open to students with credit for AcctMIS 852. Cross-listed in Accounting and Management Information Systems.
5. 2.1-hr cl.
6. Wi Qtr.
7. 2.1-hr cl.
785 Culminating Project in Public Health  GRAD  1-8

Final project for MPH degree that can be a research report, program evaluation or grant proposal. Students should see division specific requirements.

Su, Au, Wi, Sp Qtrs. 2-2 hr. Prereq: Grad standing in Public Health and permission of instructor.

Not open to students with credit for HSMP, PubHBio, PubHEHS, PubHEpi, PubHBBP 785.

Repeatable to a maximum of 8 cr hrs.

789 Survey Research Practicum  GRAD  5

Hands-on applications for students interested in the planning, implementation, and analysis of a scientific sample survey.


793 Individual Studies in Public Health  GRAD  1-6


Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs.

This course is graded S/U.

794 Group Studies in Public Health  GRAD  1-6


Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs.

795 Topics in Clinical and Translational Science  GRAD  1-2

Seminar addressing varying topics in clinical and translational research; literature review, guest speakers, discussion of issues, student research presentations.

Su, Au, Wi, Sp Qtrs. 1-2 hr. Prereq: Grad standing in public health or permission of instructor.

Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

799 Research in Public Health  GRAD  1-18

Designed for the student who is conducting master's or pre-candidacy doctoral research.

Su, Au, Wi, Sp Qtrs. 2-2 hr cl. and online. Prereq: Grad standing in public health and permission of instructor.

Repeatable to a maximum of 99 cr hrs.

850 Seminar in Public Health  GRAD  1-4

Seminar in Public Health.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in pub hth or permission of instructor. Repeatable to a maximum of 8 cr hrs.

875 Doctoral Seminar in Public Health  GRAD  1-4

Doctoral level seminar on topics that are relevant to students enrolled in the PhD program in Public Health.

Su, Au, Wi, Sp Qtrs. Prereq: Graduate standing in Public Health and permission of instructor.

Repeatable to a maximum of 12 cr hrs.

999 Research in Public Health  GRAD  1-18

Research for post-candidacy dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Prereq: Prereq: Grad standing in Public Health and permission of instructor. Repeatable. This course is graded S/U.

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Public Health: Biostatistics

601 Statistical Methods for Public Health Practice I  GRAD  4

Introduction to biostatistical methods and their applications in epidemiologic studies and public health practice.

Wi Qtr. 10 hrs on 3 3-day weekends. Prereq: Enrollment in MPH Program for Experienced Professionals or permission of instructor. Not open to students with credit for 701 or PubHth 752.

602 Statistical Methods for Public Health Practice II  GRAD  4

Continuation of 601, with emphasis on non-parametric methods, correlation, and regression analysis; critical reading of current articles in public health.

Sp Qtr. 10 hrs on 3-3 day weekends. Prereq: Enrollment in MPH Program for Experienced Professionals or permission of instructor. Not open to students with credit for 702 or PubHth 753.

604 Introduction to SAS for Public Health Students  GRAD  2

Introduction to programming using SAS software to accomplish public health data management and analysis.

Wi Qtr. 2 hr cl. Open only to Public Health students. This course is graded S/U.

605 Applied Survival Analysis  GRAD  4

Techniques for analyzing censored data including: life table and product limit estimator, k-sample tests, and proportional hazards regression.

Wi Qtr. 2-2 hr cl. Prereq: Stat 521 and 645 or PubBio 703; or permission of instructor. Not open to students with credit for Bistat 605. Cross-listed in Biostatistics. Offered in even years.

606 Applied Logistic Regression  GRAD  4

Theoretical and practical training in statistical modeling of a categorical response variable; conditional and unconditional models, assessment of model performance, determination of scale.

Wi Qtr. 2-2 hr cl. Prereq: B- or above in 702 or permission of instructor. Offered in odd years.

607 Practical Biostatistics for Biomedical Laboratory Researchers  GRAD  4

Introduction to statistical principles and methods appropriate for experimental laboratory data with applications in biomedical sciences.

Su Qtr. 4-2 hr cl. Prereq: Enrollment in the Integrated Biomedical Science Graduate Program or permission of instructor.

624 Applied Longitudinal Data Analysis  GRAD  4

Statistical models and methods for the analysis of data arising from longitudinal studies with repeated measurements on subjects over time.

Au Qtr. 2-2 hr cl. Prereq: 703 or permission of instructor. Offered in odd years.

625 Multi-dimensional Data Analysis with Applications from Current Health Sciences Research  GRAD  4

Introduction to statistical models for analyzing multi-dimensional data in the health sciences, with emphasis on experience in use of statistical software.

Sp Qtr. 2-2 hr cl. Prereq: B- or above in 702 or permission of instructor.

651 Survey Sampling Methods  GRAD  4

Sampling from finite populations, simple random, stratified, systematic and cluster sampling designs, ratio and regression estimates; non-sampling errors.

Wi Qtr. 2-2 hr cl. Prereq: Stat 521 or permission of instructor. Not open to students with credit for Stat 651. Cross-listed in Statistics. Offered in even years.

652 Applied Statistical Analysis with Missing Data  GRAD  4

Models and methods for the dataset with missing values, including imputation and likelihood and Bayesian-based models.

Au Qtr. 2-2 hr cl. Prereq: 703 or Stat 529 or permission of instructor. Not open to students with credit for 652. Cross-listed with Stat 652. Knowledge of regression and familiarity with a statistical computing package. Offered in even years.

685 Field Experience in Biostatistics  GRAD  1-8

Placement in a public health agency or related site for supervised practice experience.

Su, Au, Wi, Sp Qtrs. Prereq: Enrollment in MPH program and permission of instructor. Repeatable to a maximum of 6 cr hrs. 30 hours of on-site time per credit hour, arranged with adviser. This course is graded S/U.

701 Design and Analysis of Studies in the Health Sciences I  GRAD  4

Theory and application of basic statistical concepts for design of studies in health sciences, integrated with statistical software applications.

Au, Wi Qtrs. 2-2 hr cl. Prereq: Grad standing in PubHth or permission of instructor.

702 Design and Analysis of Studies in the Health Sciences II  GRAD  4

Review of the fundamental concepts of biostatistics, including more complex analysis of variance designs, integrated with application of computer statistical packages.

Wi, Sp Qtrs. 2-2 hr cl. Prereq: B- or above in 701 or permission of instructor.

703 A Problem-Oriented Approach to Biostatistics  GRAD  4

The employment of actual health-related problems to illustrate the use of computers and apply statistical methods important to epidemiologists and other health professionals.

Sp Qtr. 2-2 hr cl. Prereq: B- or above in 702 or permission of instructor.

706 Regression Modeling of Time-to-Event Data  GRAD  4

Common parametric models for survival data; competing risks, cumulative incidence functions, life table methods, additive hazards regression models, regression diagnostics, multivariate survival analysis.

Sp Qtr. 2-2 hr cl. Prereq: 605 or Bistat 605 or permission of instructor. Offered in odd years.

726 Models for Continuous and Discrete Longitudinal Data  GRAD  4

Classical and modern statistical approaches to analyze continuous and discrete longitudinal data.

Sp Qtr. Prereq: Grad standing in Statistics or Biostatistics: Stat 622 and Stat 645, or permission of instructor. Not open to students with credit for Stat 726. Cross-listed in Statistics. Offered in even years.

727 Statistical Methods in Toxicological Risk Assessment  GRAD  4

Statistical techniques for quantifying the risk of adverse health effects from exposure to harmful substances.

^ Au Qtr. 2-2 hr cl. Prereq: B- or above in 702 or permission of instructor.

750 Topics in Biostatistics  GRAD  1-4

Regular class on topics that are relevant to students enrolled in programs in the Division of Biostatistics.

Su, Au, Wi, Sp Qtrs. Prereq: Graduate standing in Public Health and permission of instructor. Repeatable to a maximum of 12 cr hrs.

785 Culminating Project in Public Health  GRAD  1-8

Final project for MPH degree that can be a research report, program evaluation or grant proposal. Students should see division specific requirements.

Su, Au, Wi, Sp Qtrs. 2-2 hr. Prereq: Graduate standing in Public Health and permission of instructor. Not open to students with credit for PubHth, HSMP, PubHEHS, PubHEpi, PubHBBP 785. Repeatable to a maximum of 8 cr hrs.
Public Health: Environmental Health Sciences

530 Current Issues in Environmental Health UGRD 4
Critical review and discussion of current issues in environmental health, occupational and environmental hazards and responses.
Wi Qtr. 2-2 hr cl.

535 Fundamentals of Environmental Health Risk Assessment UGRD 4
Designed to provide students with a working knowledge of human health risk assessment.

632 Climate Change and Human Health GRAD 4
How global climate change may be related to direct and indirect impacts on human health.

632 Climate Change and Human Health UGRD 4
How global climate change may be related to direct and indirect impacts on human health.

685 Field Experience in Environmental Health GRAD 1-8
Placement in a public health agency or related site for supervised practice experience.
Su, Au, Wi, Sp Qtrs. Prereq: Enrollment in MPH program and permission of instructor. Repeatable to a maximum of 8 cr hrs. 30 hours of on-site time per credit hour, arranged with adviser. This course is graded S/U.

729 Water Contamination: Sources and Health Impact UGRD 4
Contamination of water, air and food, and the impact on health.
Prereq: Previous coursework in microbiology is required or permission of the instructor. Not available to students with credit for FdScTe 729. Cross-listed in FdScTe.

730 Global Health and Environmental Microbiology GRAD 4
Important topics in environmental microbiology with a perspective on global health.
Au Qtr. Prereq: Microbiology 509 or permission from the instructor. Not available to students with credit for FdScTe 730. Cross-listed in FdScTe.

731 Principles of Environmental Health GRAD 4
Survey of major environmental factors affecting human health, including air, water, and land pollution, occupational hazards, trace metals, chemical carcinogens, radiation, and noise.
Au, Wi Qtrs. 2-2 hr cl.

732 Basic Concepts in Toxicology GRAD 4
Fundamentals of dose-response, exposure, and the disposition and biotransformation of chemicals in mammalian systems; actions of toxins in major organ systems.
Wi Qtr. 2-2 hr cl. Prereq: Grad standing in the College of Public Health, the Environmental Sciences Graduate Program, or any Department in the Colleges of Public Health, Medicine, Pharmacy, Veterinary Medicine, or permission of instructor. No prerequisite for undergraduates.

733 Toxicology of Chemical Agents GRAD 4
Disruption of biological systems by chemical agents; discussion of classes of chemical toxins and the health effects they produce; experimental toxicology and epidemiology focused on human health.
Sp Qtr. 2-2 hr cl. Prereq: 732 or permission of instructor.

735 Introduction to Water and Human Health Risk GRAD 4
Water-related pathogens and their pathways to humans; water supply, sanitation and hygiene development; assessing risk to individuals and populations; infectious diseases and outbreak investigation.
Sp Qtr. 2-2 hr cl. Prereq: 731 and PubHlth 701, or permission of instructor.

736 Environmental Law and Policy for Public Health GRAD 2
Basic concepts of environmental law and policy relevant to public health practice.
Wi Qtr. 2 hr cl. Prereq: Grad standing in Public Health. Offered in even years.

738 Exposure Science Monitoring Techniques GRAD 4
This course will familiarize students with the relevance and application of sampling and analysis techniques for human exposure assessment of environmental agents.
Prereq: Graduate standing in the College of Public Health, the Environmental Sciences Graduate Program, or the other related graduate degree program within the university.

741 Environmental Health Management GRAD 2
This applied course will provide students with an overview of environmental and occupational health issues and how these issues interact with health care organizations.
Au Qtr.

830 Principles of Occupational Health GRAD 4
Principles and practice of occupational health and medicine.
Au Qtr. 2-2 hr cl.

831 Principles of Risk Assessment GRAD 4
Introduction to the basic components of quantitative toxicological risk assessment.
Wi Qtr. 2-2 hr cl.

832 Principles of Exposure Assessment GRAD 4
Introductory course that includes discussion of a variety of topics in exposure assessment.
Sp Qtr. 2-2 hr cl. Prereq: 732 and PubHlth 710 or permission of instructor.

835 Molecular Techniques for Environmental Health GRAD 5
Practical introduction to molecular techniques, as applied to research in environmental health sciences.
Sp Qtr. 2-2 hr cl, 6-hr lab. Prereq: Permission of instructor. Offered in even years.

836 Advanced Food Microbiology II GRAD 3
The biology, pathogenesis, and prevention of foodborne viruses.
Prereq: FdScTe 636 (Food Microbiology) or permission from the instructor. Not available to students with credit for FdScTe 636. Cross-listed in FdScTe.

850 Seminar in Environmental Health Sciences GRAD 1-4
Seminar on topics relevant to students enrolled in programs in the Division on Environmental Health Sciences.
Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in Public Health and permission of instructor. Repeatable to a maximum of 12 cr hrs.

875 Doctoral Seminar in Environmental Health GRAD 1-4
Doctoral seminar on topics that are relevant to PhD students enrolled in Environmental Health Sciences.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs.
This course is graded S/U.

Public Health: Epidemiology

510 Introduction to Epidemiology UGRD 4
Introduction to the study of population health; history, methods, applications, and issues in epidemiology.
Au, Wi Qtrs. 2-2 hr cl. Prereq or concur: Stat 135 or 145 or equiv.

615 Outbreak Investigation UGRD 3
Principles and practice of field epidemiology, including outbreak investigation and disease surveillance.
Wi Qtr. Prereq: 510 or 710 or permission of instructor.

685 Field Experience in Epidemiology GRAD 1-8
Placement in a public health agency or related site for supervised practice experience.
Su, Au, Wi, Sp Qtrs. Prereq: Enrollment in MPH program and permission of instructor. Repeatable to a maximum of 8 cr hrs. 30 hours of on-site time per credit hour, arranged with adviser. This course is graded S/U.
Su, Au, Wi, Sp Qtrs. Prereq: Graduate standing in Public Health and permission of instructor. Not open to students with credit for 710.

704 Biological Basis of Public Health GRAD 4
Molecular and epidemiologic evidence of biological mechanisms in major diseases of concern for public health.
Au Qtr. 1.5-3 hr cl. Prereq: Grad standing in Public Health or permission of instructor.

705 Design and Implementation of Health Surveys GRAD 4
Introduction to health survey methods, with public health applications.
Wi Qtr. 2-2 hr cl. Prereq: 710 or permission of instructor.

710 Principles of Epidemiology GRAD 4
Introduction to the nature and scope of epidemiology; survey of basic epidemiologic methods and their application to selected acute and chronic health problems.
Au, Wi Qtrs. 2-2 cl. Prereq: Grad standing in PubHlth or permission of instructor.

711 Epidemiology I GRAD 4
Principles of epidemiology with special emphasis on methods employed in current epidemiologic studies.
Wi, Sp Qtrs. 2-2 cl. Prereq: 710 or permission of instructor.

712 Epidemiology II GRAD 4
Design of epidemiologic studies of major health problems; review of key studies; application of epidemiologic data to public health programs and medical care delivery.
Sp Qtr. 2-2 hr cl. Prereq: 711 and PubHlth 702 or permission of instructor.

713 Epidemiology in Environmental Health GRAD 4
Principles and application of epidemiologic methods in the investigation and control of health problems stemming from environmental hazards.
Au Qtr. 2-2 hr cl. Prereq: 711 or permission of instructor.

714 Injury Epidemiology GRAD 3
Introduction to injury epidemiology; historical context, trends, research methods and issues; survey of areas of injury epidemiology and prevention.
Sp Qtr. 1-3 hr cl. Prereq: 710 or permission of instructor. Offered in even years.

715 Principles and Procedures for Human Clinical Trials GRAD 4
Basic principles and procedures for clinical professionals in the design, conduct and analysis of human clinical trials.
Sp Qtr. Prereq: 710 or 710 recommended; PubHlth 702; or permission of instructor.

716 Psychiatric Epidemiology GRAD 3
Course on the epidemiology of mental health disorders and the methods used in the field of psychiatric epidemiology.
Wi Qtr. 3-3 cl. Prereq: 710 or permission of instructor. Offered in odd years.

717 Tuberculosis: A Public Health Issue GRAD 1
Course on the epidemiology of tuberculosis in the United States and internationally.
Sp Qtr. 1 hr cl. Prereq: 710 or permission of instructor. Offered in even years.

718 Infectious Diseases in the Developing World UGRD 2
This course is designed to provide students with an overview of the field of infectious diseases in the developing world.
Sp Qtr. Basic epidemiology course (510 or 710) recommended but not required.

719 Nutrition in Public Health GRAD 4
An introduction to the role of diet in human disease and to the assessment of diet in human populations.

720 Molecular Epidemiology of Infectious Diseases GRAD 3
Provides students with the knowledge and skills to study disease outbreaks in humans and animals using molecular biology techniques.
Sp Qtr. Prereq: Some basic knowledge of infectious diseases and molecular biology or permission of the instructors. Not open to student with credit for VetPrev 700. Cross-listed in VetPrev 700.

750 topics in Epidemiology GRAD 1-4
Regular class on topics that are relevant to students enrolled in programs in the Division of Epidemiology.
Su, Au, Wi, Sp Qtrs. Prereq: Graduate standing in Public Health and permission of instructor. Repeatable to a maximum of 12 cr hrs.

785 Culminating Project in Public Health GRAD 1-8
Final project for MPH degree that can be a research report, program evaluation or grant proposal. Students should see division specific requirements.
Su, Au, Wi, Sp Qtrs. 2-2 hr cl. Prereq: Graduate standing in Public Health and permission of instructor. Not open to students with credit for PubHlth, PubHlth 702, PubHEHS, HSMP, PubHlth 785. Repeatable to a maximum of 8 cr hrs.

793 Individual Studies in Epidemiology GRAD 1-6
Individual Studies in Epidemiology.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

794 Group Studies in Epidemiology GRAD 1-6
Group Studies in Epidemiology.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs.

803 Health Data: Sources and Uses GRAD 4
Study of compilation of health and health-related data and their utilization; local, state, regional, and national surveys; and life tables and community health indices.
Su Qtr. 2 hr cl. Prereq: PubHlth 702 or permission of instructor.

810 Epidemiologic Methods GRAD 4
Critique and justification for methods of designing, analyzing and interpreting epidemiological data; social, historical and philosophical foundations of epidemiologic methods.
Au Qtr. 2-2 hr cl. Prereq: 712 and PubHlth 703 or permission of instructor.

814 Chronic Disease Epidemiology GRAD 4
Survey of the epidemiology of chronic diseases, including cancer, heart disease, stroke, diabetes mellitus, chronic obstructive pulmonary disease, and neurodegenerative disease.
Wi Qtr. 2-2 hr cl. Prereq: 711 or permission of instructor.

815 Infectious Disease Epidemiology GRAD 4
Introduction to the epidemiology of infectious diseases, with focus on basic methods for investigation, control and prevention of communicable disease.
Wi Qtr. 2-2 hr cl. Prereq: 710 or permission of instructor.

816 Cancer Epidemiology GRAD 4
Epidemiology of cancer, including etiology, risk factors, neoplastic processes, screening, control; application of statistical methods; molecular genetic basis of carcinogenesis.
Sp Qtr. 2-2 hr cl. Prereq: 710 or permission of instructor.

817 Cardiovascular Disease Epidemiology GRAD 4
Introduction to the epidemiology of cardiovascular disease; risk factors, specific diseases, diagnostic procedures; review of classic and current studies.
Sp Qtr. 2-2 hr cl. Prereq: 710 or permission of instructor.

818 Women’s Health Issues GRAD 3
Overview of issues related to women’s health from epidemiological and behavioral perspectives.
* Wi Qtr. Prereq: 710 or permission of instructor. Taught in even years.

819 Epidemic of Obesity GRAD 4
Prevalence, trends, risk factors, measurement, outcomes and issues related to obesity; critical reading and discussion of research on epidemiology of obesity.
Sp Qtr. 2-2 hr cl. Prereq: 711 and PubHlth 701 or permission of instructor.

820 Reproductive and Perinatal Epidemiology GRAD 4
This course will provide students with an overview of the epidemiology of reproductive and perinatal health issues and methodologic challenges unique to the field.
Sp Qtr. Prereq: PubHEpi 710 or permission of instructor. Offered in odd years.

821 Design and Analysis of Group-Randomized Trials GRAD 4
Models and methods for the design and analysis of group-randomized trials in public health research.
Wi Qtr. 2-2 hr cl. Prereq: 712 and PubHlth 703, or permission of instructor. Offered in odd years.

822 Molecular Cancer Epidemiology GRAD 4
This course provides an introduction to the molecular biology underlying cancer and the molecular alterations that initiate or promote the progression of cancer.
Au Qtr. Prereq: 816.

850 Seminar in Epidemiology GRAD 1-4
Seminar on topics that are relevant to students enrolled in programs in the Division of Epidemiology.
Su, Au, Wi, Sp Qtrs. Prereq: Graduate standing in Public Health and permission of instructor. Repeatable to a maximum of 12 cr hrs.

875 Doctoral Seminar in Epidemiology GRAD 1-4
Seminar for doctoral students in Epidemiology.
Su, Au, Wi, Sp Qtrs. Prereq: Graduate standing in Public Health and permission of instructor. Repeatable to a maximum of 12 cr hrs.

Public Health: Health Behavior & Health Promotion

520 The Role of Behavior in Public Health UGRD 4
Introduction to concepts of health behavior and its role in public health; social determinants of health; applications to selected community health problems and issues.
Sp Qtr. 2-2 hr cl.

685 Field Experience in Health Behavior and Health Promotion
Placement in a public health agency or related site for supervised practice experience.
Su, Au, Wi, Sp Qtrs. Prereq: Enrollment in MPH program and permission of instructor. Repeatable to a maximum of 8 hrs. 30 hours of on-site time per credit hour, arranged with adviser. This course is graded S/U.

Public Health: Epidemiology 381
382 Public Health: Health Behavior & Health Promotion

720 Preventing Disease and Promoting Health through Behavioral Science
Examination of behavioral and social science concepts as the basis for public health practice; topics include transferring knowledge, motivating and aiding behavior change efforts, and working with the community.
Su, Wi, Qtrs. 2-2 hr cl. Not open to students with credit for 743.

725 Behavioral Science Foundations for Health Care Managers
Conceptual frameworks and strategies for behavioral and social change efforts, with applications for health care management.
Sp Qtr. 1 hr cl. Prereq: Enrollment in MHA degree or permission of instructor.

750 Special Topics in Health Behavior and Health Promotion
Regular class on topics that are relevant to students enrolled in programs in the Division of Health Behavior and Health Promotion.
Su, Au, Wi, Sp Qtrs. Prereq: Graduate standing in Public Health and permission of instructor. Repeatable to a maximum of 12 cr hrs.

785 Culminating Project in Public Health
Final project for MPH degree that can be a research report, program evaluation or grant proposal. Students should see division specific requirements.
Su, Au, Wi, Sp Qtrs. 2 hr cl. Prereq: Graduate standing in public health and permission of instructor. Not open to students with credit for PubHlth, PubHBio, PubHEHS, PubHEpi, HSMP 785. Repeatable to a maximum of 8 cr hrs.

794 Group Studies in Health Behavior and Health Promotion
Group Studies in Health Behavior and Health Promotion.
Su, Au, Wi, Sp Qtrs. Prereq: Graduate standing in Public Health or permission of instructor. Repeatable to a maximum of 24 cr hrs.

800 Health Care Organization I
Introduction to the history, organization and politics of health care systems; critical review of selected issues using different analytic frameworks.
Su, Au, Wi, Sp Qtrs. 2 hr cl and online. Prereq: Grad standing in Public Health and permission of instructor. Not open to students with credit for PubHlth, PubHBio, PubHEHS, PubHEpi, PubHHBP 785. Repeatable to a maximum of 12 cr hrs.

820 Foundations of Health Behavior and Health Promotion
Overview of the field of health behavior and health promotion; introduction to historical origins, philosophical underpinnings and scientific basis of the field.
Au Qtr. 2-2 hr cl.

821 Community Health Assessment
Models of community health assessment; skills in identifying, analyzing and integrating information concerning community resources and needs.
Wi Qtr. 2-2 hr cl. Prereq: Grad standing in PubHlth or permission of instructor.

822 Settings and Special Populations
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.
Wi Qtr. 2-2 hr cl.

824 Program Evaluation in Public Health
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.
Sp Qtr. 2-2 hr cl. Prereq: Grad standing in PubHlth or permission of instructor.

825 Adolescent Health Issues
Overview of health issues affecting adolescents; current public health practices designed to respond to these issues.
Sp Qtr. 2-2 hr cl.

827 Program Planning and Implementation
Planning and implementation of programs to address public health issues in defined populations; development of a health promotion program for a specific community partner.
Wi Qtr. 2-2 hr cl. Prereq: Grad standing in Public Health, PubHHBP 620 or permission of instructor.

828 Cancer Behavioral Science
Overview of behavioral issues associated with cancer at the individual and community levels.
* Wi Qtr. 1-3 hr cl. Prereq: 720 or permission of instructor. Taught odd years.

830 Fundamental Determinants of Population Health and Implications for Public Health
Presents the ideas that population health is determined by factors outside of healthcare and individual behavior occurs within a social context.
Wi Qtr.

834 Research Methods in Public Health
An overview of research methods that are commonly used in public health research.

850 Seminar in Health Behavior and Health Promotion
Seminar with varying topics related to concepts and issues in health behavior and health promotion.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 12 or hrs.

856 Public Health in Action
Provides an opportunity to participate in an organized service activity that is connected to specific outcomes which meet community needs.

858 Social-Ecological Strategies in Prevention
Student introduction to the social-ecological approach to prevention in a public health context.

875 Doctoral Seminar in Health Behavior and Health Promotion
Doctoral level seminar on topics that are relevant to students enrolled in the PhD program in the Division of Health Behavior and Health Promotion.
Su, Au, Wi, Sp Qtrs. Prereq: Graduate standing in Public Health and permission of instructor. Repeatable to a maximum of 12 cr hrs.

Public Health: Health Services Management & Policy

550 US and International Health Care
Introduction to the history, organization and politics of health care systems; critical review of selected issues using different analytic frameworks.

685 Field Experience in HSMP
Placement in a public health agency or related site for supervised practice experience.
Su, Au, Wi, Sp Qtrs. 2-2 hr cl and online. Prereq: Grad standing in Public Health and permission of instructor. Repeatable to a maximum of 8 cr hrs.

693 Individual Studies
Study of individually designed topics not otherwise available in the curriculum.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 9 or hrs. This course is graded S/U.

694 Group Studies
Group studies of special topics within health services management and policy.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 12 or hrs.

750 Special Topics in Health Services Management and Policy
Regular class on topics that are relevant to students enrolled in programs in Health Services Management and Policy.
Su, Au, Wi, Sp Qtrs. Prereq: Graduate standing in Public Health and permission of instructor. Repeatable to a maximum of 12 or hrs.

785 Culminating Project in Public Health
Final project for MPH degree that can be a research report, program evaluation or grant proposal. Students should see division specific requirements.
Su, Au, Wi, Sp Qtrs. 2-2 hr cl. Prereq: Grad standing in Public Health and permission of instructor.

795 Seminar
Investigation of current topics of significance to health services management and policy.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 9 or hrs.

800 Health Care Organization I
Analysis of arrangements for the organization, financing, and delivery of health care services.
Au, Sp Qtrs. 2-2 hr cl.

801 Health Care Organization II
Continuation of 800, with emphasis on managing health services for a defined population.
Sp Qtr. 2-2 hr cl.

802 Economic Analysis of Health Services
Applications of microeconomic analysis to the health services industry, with emphasis on the market structure and managerial decisions.
Wi Qtr. 2-2 hr cl. Prereq: Grad standing in Public Health or Biostatistics, or permission of instructor.

803 Economics of Health Care I
Microeconomic principles of consumer demand with applications to health care use; role of uncertainty and health insurance.
* 2-2 hr cl. Prereq: 802 or permission of instructor.

804 Economics of Health Care II
Microeconomic principles of supply with applications to the provision of health care services; market place for nurses and physicians; assessment of the competitive model.
* 2-2 hr cl. Prereq: 802 or permission of instructor.

805 Introduction to Health Policy
Introduction to public policy concepts and processes as they apply to the organization, financing, and delivery of health services.
Sp Qtr. 2-2 hr cl. Prereq: 800 or permission of instructor.
811 Legal Environment of Health Care
Law as it affects health care, including malpractice, licensure, professional and business relationships, and legal-ethical decisions.
Au Qtr. 2-2 hr cl. Prereq: Grad standing in Public Health or Biostatistics, or permission of instructor.

815 Health Services Organizational Management
Principles of organizational behavior and management applied to health services organizations; emphasis on professionalism, leadership, and unique problems of health care settings.
Au Qtr. 2-2 hr cl. Prereq: Grad standing in Public Health or Biostatistics, or permission of instructor.

817 Leadership in Health Care
Overview of leadership in health care with an emphasis on theory, leadership development, and leadership styles.
Sp Qtr. 2-2 hr cl.

820 Health Services Finance I
Principles of finance and accounting applied to health service organizations.
Wi Qtr. 2-2 hr cl. Prereq: An introduction to financial accounting course or permission of instructor.

821 Health Services Finance II
Continuation of 820 emphasizing financial analysis, financial planning, and management control.
Sp Qtr. 2-2 hr cl. Prereq: 820 or permission of instructor.

822 Health Services Financial Decision-Making
Principles of financial decision-making in health service organizations, with emphasis on applications of decision support systems.
Au Qtr. 2-2 hr cl. Prereq: 821 or permission of instructor.

823 Financial Management of Public Health Programs
Principles of accounting and finance applied to the management of public health agencies and programs.
Wi Qtr. 2-2 hr cl. Prereq: Enrollment in MPH Program for Experienced Professionals and an intro to accounting course or permission of instructor.

831 Strategic Management and Program Development
Techniques and methods for strategic management and project planning in health care organizations and settings.
Sp Qtr. 2-2 hr cl. Prereq: Enrollment in MHA program or permission of instructor.

840 Disability Policy and Politics
Investigation of public policy in the area of disability and the politics that is the origin and result of these policies.
* Wi Qtr. 2-2 hr cl.

850 Seminar in Health Service Management and Policy
Small group seminar with focus on integrative projects in health services management and policy.
Su, Au, WI, Sp Qtrs. Arr. Prereq: Enrollment in MHA program or permission of instructor. Repeatable to a maximum of 4 cr hrs.

870.01 Advanced Studies: General
Seminar in special topics in health services management and policy with content varying from quarter to quarter.
Prereq: Grad standing in HSMP or permission of instructor. Repeatable to a maximum of 14 cr hrs.

870.02 Advanced Studies: Clinical Rotations
Students will learn to develop a set of values and skills to work collaboratively within a healthcare setting.
Prereq: Enrollment in the MHA program. Repeatable to a maximum of 14 cr hrs.

870.03 Advanced Studies: Data Analysis
Seminar in special topics in health services management and policy with content varying from quarter to quarter.
Prereq: Grad standing in HSMP or permission of instructor. Repeatable to a maximum of 14 cr hrs.

870.04 Advanced Studies: Ethics
Seminar in special topics in health services management and policy with content varying from quarter to quarter.
Prereq: Grad standing in HSMP or permission of instructor. Repeatable to a maximum of 14 cr hrs.

870.05 Advanced Studies: Human Resources
Seminar in special topics in health services management and policy with content varying from quarter to quarter.
Prereq: Grad standing in HSMP or permission of instructor. Repeatable to a maximum of 14 cr hrs.

870.06 Advanced Studies: Marketing
Seminar in special topics in health services management and policy with content varying from quarter to quarter.
Prereq: Grad standing in HSMP or permission of instructor. Repeatable to a maximum of 14 cr hrs.

870.07 Advanced Studies: Quantitative Methods
Seminar in special topics in health services management and policy with content varying from quarter to quarter.
Prereq: Grad standing in HSMP or permission of instructor. Repeatable to a maximum of 14 cr hrs.

871 Introduction to Health Services Research
Provides an overview of the field of health services research and the role of health services research in improving health care delivery.
Wi Qtr. 2-2 hr cl. Prereq: PubHBl 701 and PubHEpi 710, or permission of instructor.

872 Health Care Outcomes Measurement
Specific techniques for measuring outcomes in clinical and health services research studies.

875 Doctoral Seminar in Health Services Management and Policy
Doctoral level seminar on topics that are relevant to PhD students enrolled in Health Services Management and Policy.
Sp Qtrs. Prereq: Graduate standing in Public Health and permission of instructor. Repeatable to a maximum of 12 cr hrs.

880 Operations Management for Health Service Organizations
Concepts and techniques for managing operations in health service organizations; emphasis on management perspective and decision-making.
Wi Qtr. 2-2 hr cl. Prereq: Grad standing in HSMP or permission of instructor.

881 Topics in Health Services Operations Management
Selected topics in health services operations management, such as operations strategy, quality management, process design, materials management, and facility location.
Wi Qtr. Prereq: Graduate standing in the Division of Health Services Management and Policy.

882 Information Systems for Health Services Organizations
Information systems concepts, issues, and challenges for health services organizations; managerial analysis of information and information technology as organizational assets.
Au Qtr. 2-2 hr cl. Prereq: Graduate standing in the Division of Health Services Management and Policy.

900 Advanced Topics in Health Services Management and Policy
Seminar on issues and methods of inquiry in health services management and policy.
Arr. Prereq: Enrollment in PhD in public health or permission of instructor. Repeatable to a maximum of 12 cr hrs.

998 Thesis Research
Research for thesis or dissertation purposes only.
Su, Au, WI, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable. This course is graded S/U.

Quechua

501 Beginning Quechua I
Introduction to Quechua; development of listening, reading, speaking and writing skills.
Au, Wi Qtrs. Prereq: Spanish 104 or 104H or Portgese 104 or 502 or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit.

502 Beginning Quechua II
Continuation of Quechua 1; development of listening, reading, speaking and writing skills.
Prereq: Quechua 501 or equivalent language experience. Not open to native speakers of this language through regular course enrollment or EM credit.

503 Quechua 3
For students who have taken Quechua 502 or have beginning/intermediate level knowledge of Quechua. Comprehensive course, integrates culture and language from the southern Quechua family.
Prereq: 502 or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit.

Radiologic Sciences and Therapy

200 Careers in Radiologic Technology
Provides an orientation to radi tech and describes professional roles and responsibilities available within health care. Professional and career development opportunities described.
Au, Sp Qtrs. 1 cl. A direct field experience will provide the student with 10 hours of clinical experience in the Radiology Department of a clinical affiliate. £200 may be available for honors embedded experience.

210H Interdisciplinary Research: Osteoporosis Diagnosis, Prevention, and Treatment
An interdisciplinary team approach to research on the diagnosis, prevention, and treatment of osteoporosis is presented. Students will complete a pre-project pilot of their own design.
Wi Qtr. 2-2 hr cl. 4 hrs clinical. Prereq: 2nd yr standing honors student. Not open to students with credit for MedDiet 210H. Cross-listed in Medical Dietetics.
384 Radiologic Sciences and Therapy

310 Patient Care in Medical Imaging UGRD 3
Principles of patient care including analysis of ethical and legal issues pertaining to the delivery of medical imaging services. 
Au Qtr. 2 1.5-hr cl. Prereq: Enrollment in Radiologic Sciences and Therapy Division.

311 Patient Care, Ethics and Law in Radiation Therapy UGRD 3
An overview of patient care, ethics, legalities, and patient rights in radiation therapy, including consideration for the physical and psychological needs of the patient/family. 
Wi Qtr. 2 1-hr cl, 1-2 hr lab. Prereq: Enrollment in Radiation Therapy program.

411 Radiographic Procedures I UGRD 4
Principles of radiography of the chest, bronchial tree, abdomen, urinary systems, alimentary tract, and appendicular skeleton, with application in the laboratory. 
Au Qtr. 3 cl, 1.2-hr lab. Prereq: Permission of instructor and enrollment in rad tech; concurrent: 440.

412 Radiographic Procedures II UGRD 4
Principles of radiography of the vertebral column, spinal canal, bony thorax, cerebral and visceral cranial, mammary glands, and reproductive systems. 
Wi Qtr. 3 cl, 1-2 hr lab. Prereq: 411.

414 Radiation Therapy Techniques I UGRD 3
Introduction to the technical aspects of radiation therapy including terminology and technical parameters. Modalities of treatment and patient preparation considerations are discussed. 
Wi Qtr. 2 1.5-hr cl. Prereq: Enrollment in the Radiation Therapy Program.

415 Radiation Therapy Techniques II UGRD 3
Focus on simulation and treatment machine components, QA and functions. Methods and importance of the precise beam alignment will be emphasized. 
Wi Qtr. 2 1.5-hr cl. Prereq: 414.

416 Radiation Therapy Simulation UGRD 1
Designed to introduce students to the simulation techniques used for each of the different body sites that are treated with radiation therapy. 
Su Qtr. 1 2-hr lab. Prereq: Enrollment in Radiation Therapy Program; concurrent with 550.42.

420 Basic Elements of Sonography UGRD 3
An introduction to the medical sonography profession and ultrasound physics with an emphasis on abdominal and OB/GYN diagnostic medical sonography. 
Au Qtr. 2 1.5-hr cl. Prereq: Enrollment in Diagnostic Medical Sonography program.

425 Principles of Radiologic Imaging I UGRD 3
Investigation of the principles of radiation protection and radiologic imaging; including accessory equipment used in radiology departments. 
Au Qtr. 3 cl. Prereq: Enrollment in RadTech.

426 Principles of Radiologic Imaging II UGRD 4
Evaluation of image quality, including sensitometry, processor monitoring, and accessory devices. 
Sp Qtr. 3 cl, 1-2 hr lab. Prereq: 425.

430 Obstetric and Gynecologic Sonography UGRD 4
Provides instruction in the care and imaging of patients for obstetric and gynecologic diagnostic medical sonography procedures. 
Wi Qtr. 2 2-hr cl. Prereq: Enrollment in Diagnostic Medical Sonography program.

431 Abdominal Sonography UGRD 4
Provides content information about the use of sonography to image anatomy and pathology associated with the abdominal organs. 
Sp Qtr. 2-2 hr cl. Prereq: Enrollment in Diagnostic Medical Sonography program.

432 Superficial Structures Sonography UGRD 3
Focuses on the use of medical sonography to image anatomy and pathology associated with the neck, breast, scrotum, and extremities. 
Su Qtr. 2 1.5-hr cl. Prereq: Enrollment in Diagnostic Medical Sonography program.

440.01 Applied Medical Imaging and Therapeutics I - Radiography UGRD 1-6
Clinical application of diagnostic radiographic and fluoroscopic imaging performed in radiology. 
Au Qtr. Prereq: Enrollment in RadTech. Repeatable to a maximum of 8 cr hrs. A direct field experience will provide the student with 16-24 hours of clinical experience in imaging and radiation oncology departments of a clinical affiliate.

440.02 Applied Medical Imaging and Therapeutics I - Radiography UGRD 1-6
Clinical application of diagnostic radiographic and fluoroscopic imaging performed in radiology. 
Wi Qtr. Prereq: Enrollment in RadTech. Repeatable to a maximum of 8 cr hrs. A direct field experience will provide the student with 16-24 hours of clinical experience in imaging and radiation oncology departments of a clinical affiliate.

440.03 Applied Medical Imaging and Therapeutics I - Radiography UGRD 1-6
Clinical application of diagnostic radiographic and fluoroscopic imaging performed in radiology. 
Sp Qtr. Prereq: Enrollment in RadTech. Repeatable to a maximum of 8 cr hrs. A direct field experience will provide the student with 16-24 hours of clinical experience in imaging and radiation oncology departments of a clinical affiliate.

441.01 Applied Radiation Therapy I UGRD 1-6
Clinical application of planning and treatment procedures performed in Radiation Therapy. 
Au Qtr. Prereq: Enrollment in Radiation Therapy program. Repeatable to a maximum of 18 cr hrs.

441.02 Applied Radiation Therapy I UGRD 1-6
Clinical application of planning and treatment procedures performed in Radiation Therapy. 
Wi Qtr. Prereq: Enrollment in Radiation Therapy program. Repeatable to a maximum of 18 cr hrs.

441.03 Applied Radiation Therapy I UGRD 1-6
Clinical application of planning and treatment procedures performed in Radiation Therapy. 
Sp Qtr. Prereq: Enrollment in Radiation Therapy program. Repeatable to a maximum of 18 cr hrs.

441.04 Applied Radiation Therapy I UGRD 1-6
Clinical application of planning and treatment procedures performed in Radiation Therapy. 
Au Qtr. Prereq: Enrollment in Radiation Therapy program. Repeatable to a maximum of 18 cr hrs.

441.05 Applied Radiation Therapy I UGRD 1-6
Clinical application of planning and treatment procedures performed in Radiation Therapy. 
Wi Qtr. Prereq: Enrollment in Radiation Therapy program. Repeatable to a maximum of 18 cr hrs.

441.06 Applied Radiation Therapy I UGRD 1-6
Clinical application of planning and treatment procedures performed in Radiation Therapy. 
Sp Qtr. Prereq: Enrollment in Radiation Therapy program. Repeatable to a maximum of 18 cr hrs.

441.07 Applied Radiation Therapy I UGRD 1-6
Clinical application of planning and treatment procedures performed in Radiation Therapy. 
Au Qtr. Prereq: Enrollment in Radiation Therapy program. Repeatable to a maximum of 18 cr hrs.

441.08 Applied Radiation Therapy I UGRD 1-6
Clinical application of planning and treatment procedures performed in Radiation Therapy. 
Wi Qtr. Prereq: Enrollment in Radiation Therapy program. Repeatable to a maximum of 18 cr hrs.

441.09 Applied Radiation Therapy I UGRD 1-6
Clinical application of planning and treatment procedures performed in Radiation Therapy. 
Sp Qtr. Prereq: Enrollment in Radiation Therapy program. Repeatable to a maximum of 18 cr hrs.

442.01 Applied Diagnostic Medical Sonography I UGRD 1-6
Instruction and experience in the performance and interpretation of sonographic images. 
Au Qtr. 4 hrs clinical per credit. Prereq: Enrollment in Diagnostic Medical Sonography program. Repeatable to a maximum of 18 cr hrs.

442.02 Applied Diagnostic Medical Sonography I UGRD 1-6
Instruction and experience in the performance and interpretation of sonographic images. 
Wi Qtr. 4 hrs clinical per credit. Prereq: Enrollment in Diagnostic Medical Sonography program. Repeatable to a maximum of 18 cr hrs.

442.03 Applied Diagnostic Medical Sonography I UGRD 1-6
Instruction and experience in the performance and interpretation of sonographic images. 
Sp Qtr. 4 hrs clinical per credit. Prereq: Enrollment in Diagnostic Medical Sonography program. Repeatable to a maximum of 18 cr hrs.

471 Radiologic Physics I UGRD 3
The physical principles associated with the design and function of RF imaging equipment and the theoretical basis for X-ray production and interaction with matter. 
Wi Qtr. 3 cl. Prereq: Enrollment in RadTech.

481 Radiation Therapy Physics I UGRD 3
An analysis of the production, decay, interaction and measurement of ionizing radiation. Discussion of the fundamentals of clinical radiation generators, beam quality, and absorbed dose. 
Wi Qtr. 2 1.5-hr cl. Prereq: Enrollment in Radiation Therapy Program.

482 Radiation Therapy Physics II UGRD 3
An analysis of interaction and measurement of ionizing radiation in therapy. Concepts include beam quality, measurement of absorbed dose, dose distribution, and scatter analyses. 
Sp Qtr. 2 1.5-hr cl. Prereq: 481.

483 Dosimetry Calculations UGRD 5
Principles of dosimetric calculations, terms and calculation variables are emphasized according to specific beam energies. Common dosimetry problems occurring during patient treatments are discussed. 
Au Qtr. 2 1.5-hr cl, 1-2 hr cl. Prereq: Enrollment in Radiation Therapy program, 482.

485 Treatment Planning UGRD 2
Describes and compares methods of treatment plans utilizing new and established radiation therapy techniques. Optimal radiation treatment planning is emphasized. 
Wi Qtr. 2 1-hr cl. Prereq: Enrollment in Radiation Therapy Program.

486 Ultrasound Physics I UGRD 3
A practical application of the physics of ultrasound production. Emphasis is placed on instrumentation used in medical sonography. 
Wi Qtr. 2 1-hr cl, 1-2 hr lab. Prereq: Enrollment in Diagnostic Medical Sonography program.

487 Ultrasound Physics II UGRD 3
A continuation of RadSci 486 with emphasis on the physics of ultrasound with practical application to obstetrics and gynecologic sonography. 
Au Qtr. 2 1.5-hr cl, 1-2 hr cl. Prereq: Enrollment in Diagnostic Medical Sonography program.

488 Ultrasound Physics III UGRD 3
A continuation of RadSci 487 with emphasis on the physics of spectral Doppler, color Doppler, and total quality management with practical application to sonography. 
Su Qtr. 2 1.5-hr cl. Prereq: Enrollment in Diagnostic Medical Sonography program.

520 Vascular Sonography I UGRD 3
An introduction to venous imaging and noninvasive testing of the upper and lower extremities. 
Au Qtr. 2 1.5-hr cl. Prereq: Enrollment in Radiologic Sciences and Therapy - Sonography.

521 Vascular Sonography II UGRD 3
An introduction to arterial imaging and noninvasive testing of the upper and lower extremities. 
Wi Qtr. 2 1-2 hr cl. Prereq: Enrollment in Radiologic Sciences and Therapy - Sonography, RadSci 520.

522 Vascular Sonography III UGRD 3
An introduction to sonographic imaging and noninvasive testing of the vascular integration of the carotid arteries, bypass grafts, and transplanted organs. 
Sp Qtr. 2 1.5-hr cl. Prereq: Enrollment of Radiologic Sciences and Therapy - Sonography, RadSci 520, 521.

530 Quality Management in the Radiologic Sciences UGRD 4
Investigation of quality management principles and techniques specific to the imaging sciences including modality specific quality control testing and national/state requirements. 
Au Qtr. 3 cl. 1-2 hr lab. Prereq: 425.
540.01 Applied Medical Imaging and Therapeutics II - Radiography
Clinical application of diagnostic radiographic and fluoroscopic procedures performed in medical imaging.
Au Qtr. Prereq: Enrollment in RadTech. Repeatable to a maximum of 10 cr hrs. A direct field experience will provide the student with 16-24 hours of clinical experience in imaging and radiation oncology departments of a clinical affiliate.

540.02 Applied Medical Imaging and Therapeutics II - Radiography
Clinical application of diagnostic radiographic and fluoroscopic procedures performed in medical imaging.
Su Qtr. Prereq: Enrollment in RadTech. Repeatable to a maximum of 10 cr hrs. A direct field experience will provide the student with 16-24 hours of clinical experience in imaging and radiation oncology departments of a clinical affiliate.

540.03 Applied Medical Imaging and Therapeutics II - Radiography
Clinical application of diagnostic radiographic and fluoroscopic procedures performed in medical imaging.
Au Qtr. Prereq: Enrollment in RadTech. Repeatable to a maximum of 10 cr hrs. A direct field experience will provide the student with 16-24 hours of clinical experience in imaging and radiation oncology departments of a clinical affiliate.

540.04 Applied Medical Imaging and Therapeutics II - Radiography
Clinical application of diagnostic radiographic and fluoroscopic procedures performed in medical imaging.
Wi Qtr. Prereq: Enrollment in RadTech. Repeatable to a maximum of 10 cr hrs. A direct field experience will provide the student with 16-24 hours of clinical experience in imaging and radiation oncology departments of a clinical affiliate.

540.05 Applied Medical Imaging and Therapeutics II - Radiography
Clinical application of diagnostic radiographic and fluoroscopic procedures performed in medical imaging.
Sp Qtr. Prereq: Enrollment in RadTech. Repeatable to a maximum of 10 cr hrs. A direct field experience will provide the student with 16-24 hours of clinical experience in imaging and radiation oncology departments of a clinical affiliate.

541.01 Applied Radiation Therapy II
Continuation of RadSci 441 with clinical application of advanced planning and treatment procedures performed in radiation therapy.
Su Qtr. Prereq: Enrollment in Radiation Therapy program. Repeatable to a maximum of 20 cr hrs.

541.02 Applied Radiation Therapy II
Continuation of RadSci 441 with clinical application of advanced planning and treatment procedures performed in radiation therapy.
Su Qtr. Prereq: Enrollment in Radiation Therapy program. Repeatable to a maximum of 20 cr hrs.

541.03 Applied Radiation Therapy II
Continuation of RadSci 441 with clinical application of advanced planning and treatment procedures performed in radiation therapy.
Au Qtr. Prereq: Enrollment in Radiation Therapy program. Repeatable to a maximum of 20 cr hrs.

541.04 Applied Radiation Therapy II
Continuation of RadSci 441 with clinical application of advanced planning and treatment procedures performed in radiation therapy.
Wi Qtr. Prereq: Enrollment in Radiation Therapy program. Repeatable to a maximum of 20 cr hrs.

541.05 Applied Radiation Therapy II
Continuation of RadSci 441 with clinical application of advanced planning and treatment procedures performed in radiation therapy.
Sp Qtr. Prereq: Enrollment in Radiation Therapy program. Repeatable to a maximum of 20 cr hrs.

542.01 Applied Diagnostic Medical Sonography II
Continuation of RadSci 442 emphasizing instruction and experience in the performance and interpretation of superficial and small structure sonographic imaging.
Su Qtr. Prereq: Enrollment in Diagnostic Medical Sonography program. Repeatable to a maximum of 18 cr hrs.

542.02 Applied Diagnostic Medical Sonography II
Continuation of RadSci 442 emphasizing instruction and experience in the performance and interpretation of superficial and small structure sonographic imaging.
Su Qtr. Prereq: Enrollment in Diagnostic Medical Sonography program. Repeatable to a maximum of 18 cr hrs.

542.03 Applied Diagnostic Medical Sonography II
Continuation of RadSci 442 emphasizing instruction and experience in the performance and interpretation of vascular sonographic imaging.
Au Qtr. Prereq: Enrollment in Diagnostic Medical Sonography program. Repeatable to a maximum of 18 cr hrs.

542.04 Applied Diagnostic Medical Sonography II
Continuation of RadSci 442 emphasizing instruction and experience in the performance and interpretation of vascular sonographic imaging.
Wi Qtr. Prereq: Enrollment in Diagnostic Medical Sonography program. Repeatable to a maximum of 18 cr hrs.

542.05 Applied Diagnostic Medical Sonography II
Continuation of RadSci 442 emphasizing instruction and experience in the performance and interpretation of vascular sonographic imaging.
Sp Qtr. Prereq: Enrollment in Diagnostic Medical Sonography program. Repeatable to a maximum of 18 cr hrs.

550.41 Practica: Cardiovascular and Interventional Radiologic Procedures
Theory and clinical education in radiographic and therapeutic interventional procedures related to vascular structures and organ systems.
Su, Au, Wi, Sp Qtrs. 1 cl, 4-16 hrs clinical education. Prereq: Enrollment in RadTech or permission of instructor. Repeatable to a maximum of 17 cr hrs 6 cr hrs required of RadTech majors.

550.42 Practica: Computed Tomography
Theory and clinical education in computed tomographic procedures.
Su, Au, Wi, Sp Qtrs. 1 cl, 4-16 hrs clinical education. Prereq: Enrollment in RadTech or permission of instructor. Repeatable to a maximum of 17 cr hrs 6 cr hrs required of RadTech majors.

550.60 Practica: Magnetic Resonance Technology
Theory and clinical education in magnetic resonance procedures.
Su, Au, Wi, Sp Qtrs. 1 cl, 4-16 hrs clinical education. Prereq: Enrollment in RadTech or permission of instructor. Repeatable to a maximum of 17 cr hrs 6 cr hrs required of RadTech majors.

550.65 Practica: Mammmography
Theory and clinical education in mammographic procedures.
Su, Au, Wi, Sp Qtrs. 1 cl, 4-16 hrs clinical education. Prereq: Enrollment in RadTech or permission of instructor. Repeatable to a maximum of 17 cr hrs 6 cr hrs required of RadTech majors.

550.75 Practica: Pediatric Imaging Procedures
Theory and clinical education in pediatric medical imaging.
Su, Au, Wi, Sp Qtrs. 1 cl, 4-16 hrs clinical education. Prereq: Enrollment in RadTech or permission of instructor. Repeatable to a maximum of 17 cr hrs 6 cr hrs required of RadTech majors.

550.80 Practica: Operation of a Medical Imaging Department
Methods of delivering radiological services including evaluation of equipment, personnel, budgeting, and the impact of federal equipment regulations.
Su, Au, Wi, Sp Qtrs. 1 cl, 4-16 hrs clinical education. Prereq: AllMed 630 or BusMHR 400; enrollment in RadTech or permission of instructor. Repeatable to a maximum of 17 cr hrs 6 cr hrs required of RadTech majors.

550.81 Practica: Quality Control in Diagnostic Medical Imaging
Examination of quality control methods utilized for radiographic CT and MRI imaging including management, implementation, and evaluation aspects.
Su, Au, Wi, Sp Qtrs. 1 cl, 4-16 hrs clinical education. Prereq: Enrollment in rad tech or permission of instructor. Concur: 530, or permission of instructor. Repeatable to a maximum of 17 cr hrs 6 cr hrs required of RadTech majors.

550.82 Practica: Radiology Informatics
Theory and clinical education in radiology informatics operations and management.
Su, Au, Wi, Sp Qtrs. 1-hr cl, 4-16 hrs clinical. Prereq: 426, 560, and CSE 100 or AllMed 648 or 650 or equiv; enrollment in RadTech or permission of instructor. Repeatable to a maximum of 17 cr hrs 6 cr hrs required of RadTech majors.

550.90 Practica: Radiologic Technology Instruction
Planned professional teaching experience under supervision in a radiologic technology education program.
Su, Au, Wi, Sp Qtrs. 1 cl, 4-16 hrs clinical education. Prereq: Enrollment in RadTech or permission of instructor. Repeatable to a maximum of 17 cr hrs 6 cr hrs required of RadTech majors.

560 Medical Imaging Modalities
Investigation of the basic physical principles of medical imaging modalities and radiation oncology.
Sp Qtr. 3 cl. Prereq: Enrollment in rad tech.

565 Administrative Aspects of Radiologic Technology
Analysis of radiology department management, evaluation of radiographic equipment, federal equipment specifications, accreditation, and licensure.
Sp Qtr. 2 cl. Prereq: Enrollment in rad tech.

572 Applied Nuclear Medicine
Observation and participation in performing static and dynamic examinations requiring the use of radiopharmaceuticals.
Su, Au, Wi, Sp Qtrs. 4-24 hrs clinical education. Prereq: Enrollment in RadTech and permission of instructor. Not open to students with credit for 550.70. Repeatable to a maximum of 17 cr hrs.
Radiologic Sciences and Therapy

573 Applied Technical Oncology I UGRD 2
Introduction to neoplastic disease including incidence, mortality, epidemiology, etiology, detection, prevention, risk, stage and grading. Course emphasizes radiation oncology treatment considerations and modalities.
Wi Qtr. 2 cl. Prereq: Enrollment in radiation therapy program. No field experience.

574 Applied Technical Oncology II UGRD 5
Provides the student with the cognitive skills necessary to assess the types of neoplasms and integrate this knowledge with the oncology treatment process.
Sp Qtr. 4-hr d, 1-2 hr lab. Prereq: 573.

590 Introduction to Angiography UGRD 2
Introduction to the basic techniques employed in vascular and interventional procedures; emphasis placed on anatomical structures demonstrated, the equipment, and contrast agents used.
Sp Qtr. 2 cl. Prereq: Enrollment in RadTech. Repeatable to a maximum of 9 or hrs.

595 Seminar UGRD 1-3
Conferences, group discussions, and presentations of selected topics.
Su, Au, Wi. Sp Qtrs. 1-3 hr cl. Prereq: Enrollment in RadTech. Repeatable to a maximum of 9 or hrs.

615 Radiographic Clinical Correlations UGRD 3
Correlations of clinical experience relative to patient's medical history and quality and appropriateness of diagnostic images.
Wi Qtr. 3 cl. Prereq: Enrollment in RadTech.

616 Advanced Clinical Correlations UGRD 3
Advanced fundamentals of radiographic diagnosis; emphasis on the correlations of the patient's medical history with the medical findings.
Sp Qtr. 2.1-5 hr cl. Prereq: 615 and Sr standing in RadTech. Requires enrollment in a RadTech 550 series to facilitate the research paper topic being integrated with the specialty study.

618 Clinical Radiation Oncology Practice UGRD 2
Principles of neoplasms of the human body emphasizing epidemiology, clinical presentation, detection and diagnosis, staging and treatment techniques of the neoplasm relevant to radiation oncology.
Sp Qtr. 2-1-hr cl. Prereq: Enrollment in Radiation Therapy program.

630.01 Transitions to the Imaging Workplace - Radiography UGRD 1
Provides the practical skills necessary to apply radiographic theory in clinical practice and prepares students for the transition from student to professional radiographer.
Sp Qtr. 1 cl. Prereq: Sr standing in RadSci - radiography. This course is available for EM credit.

630.02 Transitions to the Imaging Workplace - Radiation Therapy UGRD 1
Provides the practical skills necessary to apply radiation therapy theory in clinical practice and prepares students for the transition from student to professional radiation therapist.
Sp Qtr. 1 cl. Prereq: Sr standing in RadSci - radiation therapy. This course is available for EM credit.

630.03 Transitions to the Imaging Workplace - Diagnostic Sonography UGRD 1
Provides the practical skills necessary to apply diagnostic sonographic theory in clinical practice and prepares students for the transition from student to professional sonographer.
Sp Qtr. 1 cl. Prereq: Sr standing in RadSci - diagnostic medical sonography. This course is available for EM credit.

670 Radiobiology for the Radiologic Technologist UGRD 3
Fundamentals of radiobiological principles and radioprotective procedures, including cellular and whole body as it relates to radiologic technology.
Wi Qtr. 3 cl. Prereq: Enrollment in RadTech.

671 Radiobiology for Radiation Therapy UGRD 3
Principles of cellular biology and the reactions from types of ionizing radiation specific to radiation therapy. Emphasis is on the cellular effects from radiation exposure.
Wi Qtr. 2.1-5 hr cl. Prereq: Enrollment in Radiation Therapy program.

672 Radiologic Sectional Anatomy UGRD 3
Identification of anatomic structures as seen in cadaver.
Sp Qtr. 2 cl. 1-2 hr lab. Prereq: Enrollment in RadTech or permission of instructor.

740.01 Applied RA Practicum I GRAD 6
Students actively engage in the performance and analysis of various radiologic examinations and procedures.
Su Qtr. Prereq: Admission to RA program, completion of comprehensive examination. This course is graded S/U.

740.02 Applied RA Practicum II GRAD 6
Students actively engage in the performance and analysis of various radiologic examinations and procedures.
Au Qtr. Prereq: Admission to RA Program, completion of comprehensive examination; completion of 740.01. This course is graded S/U.

740.03 Applied RA Practicum III GRAD 6
Students actively engage in the performance and analysis of various radiologic examinations and procedures.
Wi Qtr. Prereq: Admission to RA Program, completion of comprehensive examination; completion of 740.01 and 740.02. This course is graded S/U.

Radiology

670 Medical Radiation Physics MED 2
Ionizing radiations, their production, properties and interaction with materials of medical interest. Physical principles of radiation therapy, radiation dosimetry, and radiation protection.
Au, Sp Qtrs. 2 cl. Prereq: Permission of instructor.

680 Radiation Biology GRAD 2
Effect of ionizing radiation in biological systems at the molecular, cellular, organism, and community levels with special emphasis on medical implications and radiation safety.
Au Qtr. 2 cl. Prereq: Permission of instructor.

740 Clinical Radiology GRAD 5
Analysis of various radiographic examinations and the opportunity to make presentations.
Su, Au, Wi. Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 or hrs. This course is graded S/U.

750 Radiologic Anatomy GRAD 2
Anatomy of specific regions or areas as it applies to the interpretation and understanding of diagnostic images.
Sp Qtr. Prereq: Satisfactory completion of MedCol 662, or Anatomy 712 or equiv and permission of instructor. Repeatable to a maximum of 8 cr hrs. Cross-listed with CBNAAnat 750.

813 Magnetic Resonance Spectroscopy and Imaging I GRAD 3
Presentation of the basic principles of MRI/MRS, including basic MR physics, pulse sequences, adiabatic excitation, coil design, MR hardware, image formation, localized spectroscopy.
* Sp Qtr. 2 t-5 hr cl. Prereq: Chem 521 or equiv, Biochem 511 or equiv, grad standing, and permission of instructor. Cross-listed in Biomedical Engineering.

814 Magnetic Resonance Spectroscopy and Imaging II GRAD 3
Presentation of the basic principles of MRI/MRS including basic MR physics, pulse sequences, adiabatic excitation coil design, MR hardware, image formation, localized spectroscopy.
* Sp Qtr. 2.1-5 hr cl. Prereq: 813, grad standing, permission of instructor. Cross-listed in Biomedical Engineering.

830 Molecular Basis of Mutagenesis and Carcinogenesis GRAD 3
* Sp Qtr. 2 cl. Prereq: Biochem 613, 614, 615 sequence or MBiochem 827 or Pharmacy 677 or permission of instructor, and grad standing.

850.09 Seminar: Radiation Oncology GRAD 1
Selected topics of particular current interests in both research and applications of ionizing radiation in the treatment of cancer.
Prereq: Permission of instructor. Repeatable to a maximum of 10 or hrs. This course is graded S/U.

850.10 Seminar: Radiobiology GRAD 1
Introduction to state of the art developments and innovations resulting from research directed at the study of cellular-molecular-environmental interactions.
Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 or hrs. This course is graded S/U.

850.20 Seminar: Physics of Imaging GRAD 1
Selected topics of current interests in research, development, and technology in medical physics as applied to medical imaging.
Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 or hrs. This course is graded S/U.

850.26 Seminar: Physics of Radiation Therapy GRAD 1
Selected topics of interest in research and developments of the methodology and technology of radiation treatment, planning, dosimetry, and equipment.
Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 or hrs. This course is graded S/U.

891.01 Interdisciplinary Seminar on Biomedical Images GRAD 1-2
Graduate seminar for Graduate Interdisciplinary Specialization in Comprehensive Engineering and Science of Medical Images.
Au, Wi, Sp Qtrs. 1 cl. Prereq: Grad standing, Cross-listed in Biomedical Engineering, Biomedical Informatics, Biophysics, Computer Science and Engineering, Electrical and Computer Engineering, Integrated Biomedical Science, Pathology, Statistics, and Vision Science. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

999 Research in Radiology GRAD 1-18
Research for thesis purposes only.
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

Respiratory Therapy

320 Components of Respiratory Health UGRD 4
Survey of normal respiratory mechanisms with specific consideration for the basis of respiratory pathophysiology, the respiratory environment and the role of the therapist.
Au Qtr. 2-3 hr cl. Prereq: Admission to the RespTher Division or permission of instructor.
387  Respiratory Therapy

400  Basic Respiratory Care  UGRD  6
Study of theories, procedures, and equipment utilized in delivering, monitoring, and evaluating basic respiratory therapeutics to patients with compromised respiratory function in the hospital setting.
Au Qtr.  2 2-hr cl, 3 2-hr labs. Prereq: Admission to RespTher Division.

410  Introduction to Clinical Respiratory Care  UGRD  4
An introduction to basic cardiopulmonary assessment and life support techniques, infection control, the medical record, and the clinical environment.
Au Qtr.  1 2-hr cl,  1 3-hr lab,  1 3-hr clinical. Prereq: Admission to RespTher Division.

420  Pulmonary Rehabilitation and Continuing Care  UGRD  3
Theories, procedures, equipment, standards, organizations, and legislation applicable to the delivery of respiratory therapeutics in non-hospital settings.
Wi, Sp Qtr.  1 2-hr cl,  1 2-hr lab. Prereq. 400.

430  Pulmonary Function Testing  UGRD  3
Study of theories, procedures, standards, and interpretations of pulmonary functions with consideration of mechanical and electronic principles of testing equipment.
Au Qtr.  1 2-hr cl,  1 3-hr lab. Prereq or concur: 320.

450  Arterial Blood Gas Analysis  UGRD  3
A study of the methods and procedures for obtaining arterial blood, the principles and standards of analysis, and application of the physiologic data.
Wi Qtr.  2-hr cl, 1 2-hr lab. Prereq: 320, 410, 430.

475  Mechanical Ventilation  UGRD  4
Major emphasis is placed on all aspects of the management of the patient-ventilator system and artificial airways.
Wi Qtr.  2 2-hr cl. Prereq: 400, 410, 430; concur: 476.

476  Mechanical Ventilators and Artificial Airways  UGRD  3
Lectures, demonstrations, and laboratories on various mechanical ventilators and artificial airways in use.
Wi Qtr.  2 2-hr cl, 1 3-hr lab. Prereq: 400, 410, 430; concur: 475.

480  Respiratory Disease  UGRD  2
A study of the etiologies, manifestations, and treatment of respiratory diseases and their clinical courses.
Wi Qtr.  1 2-hr cl. Prereq: 320, 400, 430.

489.20 Clinical Experience: Phase I  UGRD  3
Clinical application of basic respiratory therapeutics and non-invasive cardiopulmonary function testing.
Wi Qtr.  120 hrs. arr. Prereq: 320, 400, 410, 430; admission to the RespTher Division. Not open to students with credit for 489.02 or 489.05. Off-Campus field experience required.

489.30 Clinical Experience: Phase II  UGRD  3
Clinical application of intensive respiratory care, evaluation of pulmonary function with emphasis on arterial blood gas analysis.
Sp Qtr.  120 hrs. arr. Prereq: 450, 475, 476, 489.20; admission to the RespTher Division. Not open to students with credit for 489.04 and 489.10. Off-Campus field experience required.

489.40 Clinical Experience: Phase III  UGRD  9
Clinical application of adult, neonatal, and pediatric intensive respiratory care; home, continuing and subspecialty respiratory care with emphasis on pulmonary rehabilitation.
Su Qtr.  360 hrs arr. Prereq: 489.30, 500, 515; admission to the RespTher Division. Not open to students with credit for 489.06 or 489.07 or 489.08. Off-Campus field experience required.

489.50 Clinical Experience: Phase IV  UGRD  2
Clinical application of patient evaluations, developing respiratory care plans and implementing clinical protocols, providing intensive respiratory care, multi-skilling practices, assisting physicians with special procedures.
Au Qtr. 80 hrs arr. Prereq: 489.40; admission to the RespTher Division. Off-Campus field experience required.

500  Neonatal and Pediatric Respiratory Therapy  UGRD  5
Neonatal and pediatric pulmonary pathophysiology with consideration of the necessary adaptations of equipment and therapeutics for application to the pediatric patient.
Sp Qtr.  2 2-hr cl,  1 2-hr lab. Prereq: 475 and 476.

515  Intensive Respiratory Care  UGRD  5
Ecology, manifestations, and treatment of respiratory failure, including principles, techniques, and equipment associated with advanced cardiopulmonary monitoring and cardiac life support.
Sp Qtr.  2 2-hr cl,  1 2-hr lab. Prereq: 475, 476, and 480.

520  Administration of Respiratory Therapy Services  UGRD  3
An analysis of management processes utilized by respiratory therapy services including organization, communication, quality assurance, audit, budget and regulatory processes, personnel management, and educational functions.
Au, Wi Qtr. Prereq or concur: AllMed 630.

525  Basic Teaching Skills for Respiratory Therapists  UGRD  3
Principles and practice of teaching in respiratory therapy. Focuses on various teaching roles and strategies of respiratory therapists in academic and clinical settings.
Wi Qtr.  1 2-hr cl, 1 2-hr lab. Prereq: 489.50. Earning certification as a basic life support instructor is a requirement of this course.

589  Advanced Clinical Practice  UGRD  1-5
Supervised clinical education and experiences in respiratory therapy education, administration of respiratory services, and areas of advanced professional practice.
Su, Au, Wi, Sp Qtr. 8 hrs/wk, 1 cr hr. Prereq: Written permission of instructor and satisfactory completion of all respiratory therapy professional courses. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

593  Individual Studies in Respiratory Therapy  UGRD  1-5
Guided study of topics or pursuit of individual experiences in respiratory therapy.
Su, Au, Wi, Sp Qtrs. Prereq: Admission to the Respiratory Therapy Division or permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

595  Seminar  UGRD  1-5
Conferences, group discussions, and presentations of selected topics.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Admission to Respiratory Therapy Division or permission of instructor. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

600  Fundamentals of Respiratory Care Research  UGRD  3
Survey of research problems, methods, and designs utilized in respiratory care, with emphasis on data presentation and analysis.
Au Qtr.  2 1.5-hr cl. Prereq: Psych 220, or Stat 135 or 145 or equiv, and 4th yr or grad standing.

Romance Linguistics

692  The Romance Languages  UGRD  5
Examines the socio-historical factors and the linguistic processes that contributed to the Romance languages and to their divergences. 3 1.5-hr cl. Prereq: One year of a Romance language or permission of instructor. Not open to students with credit for French 692 or Italian 692. Cross-listed in French and Italian. Offered bi-annually. Taught in English. This course counts toward the: the Italian major (as one of the two courses taught in English), the French major (as an elective for all the major tracks), the Linguistics major or minor, the Spanish major (as an elective and the one course taught in English permitted to count for the major).

811  Romance Linguistics I  GRAD  5
A general survey of the development of the Romance languages and an introduction to the basic materials and techniques of investigation.
* 2 2-hr cl. Prereq: Permission of instructor.

812  Romance Linguistics II  GRAD  5
Topics and problems, both synchronic and diachronic; special attention to the minor Romance languages. 1 2-hr cl. Prereq: 811 or permission of instructor.

831  Seminar in Romance Linguistics  GRAD  3-5
Seminar in Romance Linguistics.
* Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor.

893  Individual Studies  GRAD  1-5
Individual Studies.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

894  Group Studies  GRAD  1-15
Investigation of minor problems in the various fields of Romance linguistics. Prereq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.

999  Research in Romance Linguistics  GRAD  1-18
Research for thesis purposes only.
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

Rumanian

101  Elementary Romanian  UGRD  5
Extensive practice in the basic language skills.
Au Qtr. Not open 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. GEC for lang course.

102  Elementary Romanian  UGRD  5
The elements of Romanian grammar with oral and written exercises; development of conversational skill; reading, vocabulary building, attention to Romanian idioms.
Wi Qtr.  5 cl. Prereq: 101. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. Fl. Admis Cond course.

104  Intermediate Romanian  UGRD  5
Reading, oral and written practice, grammar review; balanced use of the four basic skills (reading, oral comprehension, speaking, and writing).
Au Qtr.  5 cl. Prereq: 112 or equiv with permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course.
388 Romanian

111 Intensive Intermediate Romanian  UGRD 10
An intensive course that combines the content of two quarters of Romanian to complete the presentation of the basic Romanian grammar and readings based on Romanian geography, history, and customs.  Prereq: 102.  Equiv to the third and fourth courses of the foreign language sequence; successful completion of 101-102-111 fulfills the Arts and Sciences foreign language requirement.  Not open to students with credit for 104, or to native speakers of this language through regular course enrollment or EM credit.  Students with credit for 103 or equiv will enroll for 5 cr hrs.  GEC for lang course.

235 Introduction to Romanian Culture  UGRD 5
Romanian literature in its cultural context, survey of the relationship of literature, art, cultural traditions from the beginnings to the present.  Taught in English.  GEC arts and hums cultures and ideas course.

293 Individual Studies  UGRD 1-5
Individual studies in Romanian.  Au, Wi, Sp Qtrs.  Prereq: Permission of dept.  Repeatable to a maximum of 15 cr hrs.  This course is graded S/U.

294 Group Studies  UGRD 1-5
Group studies in Romanian language, literature, and culture.  Su, Au, Wi, Sp Qtrs.  Prereq: Permission of dept.  Repeatable to a maximum of 15 cr hrs.

405 Conversation and Composition I  UGRD 5
Drill in everyday patterns of conversation and elementary practice in writing.  Prereq: 104 or 111 or permission of instructor.

407 Conversation and Composition II  UGRD 5
Review of Romanian grammar; written compositions; perfection of pronunciation, translation practice, and expansion of vocabulary.  Prereq: 405 or permission of instructor.

697 Study at a Foreign Institution  UGRD 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.  Su, Au, Wi, Sp Qtrs.  Prereq: Written permission of dept chairperson.  Repeatable to a maximum of 45 cr hrs.  This course is Progress (P) graded.  Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

Rural Sociology

105 Introduction to Rural Sociology  UGRD 5
Principles of society, major social institutions, and social change; emphasizes social changes in rural life, rural life organizations, population, and family living.  Su, Au, Wi, Sp Qtrs.  C'l.  Not open to students with credit for Sociol 101 or 201.  BER/LAR course.  GEC soc sci organizations and polities and social diversity in the US course.  SS Admin Cond course.

378 Social Groups in Developing Societies  UGRD 5
Discussion of different life experiences, statuses, and behavior of people in major social groupings in developing societies.  Sp Qtr. 2-2 hr d.  Prereq: 5 cr hrs in RurlSoc, Sociol, or related social science; or permission of instructor.  BER/LAR course.  GEC soc sci individuals and groups and social diversity - international issues (Global) course.

489 Internship in Rural Sociology  UGRD 3-5
Supervised experience with an approved firm or organization; written comprehensive report required.  Su, Au, Wi, Sp Qtrs.  Prereq: Permission of major adviser.  Open only to dept majors.  Repeatable to a maximum of 10 cr hrs.  This course is graded S/U.

542 Leadership and Community Development  UGRD 5
The application of leadership principles and best practices to community development.  Sp Qtr. 5 cr.  Prereq: Sociol 101 or RurlSoc 105 or 5 cr hrs of related social sciences, or permission of instructor.

622 Amish Society  UGRD 5
Analysis of the historical, social, religious, economic and cultural dimensions of the Amish.  Wi Qtr. 2-2 hr d.  Prereq: 10 cr hrs in RurlSoc, Sociol, or related social sciences, or permission of instructor.

662 Diffusion of Innovations  UGRD 5
Examines the sociological processes involved in the dissemination of new ideas and technologies in developing nations and U.S.  Assesses the consequences of new technologies for farmers, peasants, communities, and public well-being.  Au Qtr. 2.125 minute classes.  Prereq: 10 cr hrs in RurlSoc, Sociol, or related social science.  Not open to students with credit for 562.

666 Rural Poverty  UGRD 5
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 Qtr. 2-2 hr d.  Prereq: 15 cr hrs in RurlSoc or related social science.

678 Women in Rural Society  UGRD 5
Women's role in rural society from a comparative perspective, focusing on agriculture, the environment, informal sector, and household production, both in developing and developed countries.  Sp Qtr. 2-2 hr cl.  Prereq: 15 cr hrs in RurlSoc, Sociol, or related social science, or permission of instructor.

693.01 Individual Studies: Rural Social Problems  UGRD 2-5
Prereq: 2.50 cumulative pt/hr ratio and written permission of instructor.  Prereq: 2.5 crhp and permission of instructor.  Repeatable to a maximum of 15 cr hrs.  This course is graded S/U.

693.02 Individual Studies: Rural Formal Organizations  UGRD 2-5
Prereq: 2.50 cumulative pt/hr ratio and written permission of instructor.  Prereq: 2.5 crhp and permission of instructor.  Repeatable to a maximum of 15 cr hrs.  This course is graded S/U.

693.03 Individual Studies: Rural Sociology in Foreign Areas  UGRD 2-5
Prereq: 2.50 cumulative pt/hr ratio and written permission of instructor.  Prereq: 2.5 crhp and permission of instructor.  Repeatable to a maximum of 15 cr hrs.  This course is graded S/U.

693.04 Individual Studies: Research Methods in Rural Sociology  UGRD 2-5
Prereq: 2.50 cumulative pt/hr ratio and written permission of instructor.  Prereq: 2.5 crhp and permission of instructor.  Repeatable to a maximum of 15 cr hrs.  This course is graded S/U.

693.05 Individual Studies: Rural Community and Institutions  UGRD 2-5
Prereq: 2.50 cumulative pt/hr ratio and written permission of instructor.  Prereq: 2.5 crhp and permission of instructor.  Repeatable to a maximum of 15 cr hrs.  This course is graded S/U.

693.06 Individual Studies: Community Development  UGRD 2-5
Prereq: 2.50 cumulative pt/hr ratio and written permission of instructor.  Prereq: 2.5 crhp and permission of instructor.  Repeatable to a maximum of 15 cr hrs.  This course is graded S/U.

693.07 Individual Studies: Diffusion of Technology  UGRD 2-5
Individual Studies
Prereq: 2.50 cumulative pt/hr ratio and written permission of instructor.  Prereq: 2.5 crhp and permission of instructor.  Repeatable to a maximum of 15 cr hrs.  This course is graded S/U.

693.08 Individual Studies: General Rural Sociology  UGRD 2-5
Individual Studies
Prereq: 2.50 cumulative pt/hr ratio and written permission of instructor.  Prereq: 2.5 crhp and permission of instructor.  Repeatable to a maximum of 15 cr hrs.  This course is graded S/U.

694 Group Studies  UGRD 2-5
An intensive study of a selected area in rural sociology appropriate to the needs of the group not provided in other courses.  Su, Au, Wi, Sp Qtrs.  Prereq: Permission of instructor.  Repeatable to a maximum of 8 cr hrs.

697 Study at a Foreign Institution  UGRD 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.  Su, Au, Wi, Sp Qtrs.  Prereq: Written permission of dept chairperson.  Repeatable to a maximum of 25 cr hrs.  Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

733 Sociology of Agriculture and Food Systems  GRAD 5
Overview of sociological theory and research related to agricultural change and food system development, focusing on individual, family, community and environmental impacts.  * Sp Qtr.  Prereq: 15 cr hrs in RurlSoc or related social science.

742 Concepts and Theories in Rural Sociology  GRAD 5
Examines the sociological significance of “rurality” and the conceptual perspectives applied to major substantive areas in rural sociology, such as community, environment, and agriculture.  ** Sp Qtr. 2-2 hr cl.  Prereq: 15 cr hrs in RurlSoc and/or Sociol at the 300-level or higher.  Not open to students with credit for 642.

766 Environmental Sociology  GRAD 5
Sociological approaches to the study of environmental policy.  Analysis of major issues relating to the use and abuse of natural resources.  Sp Qtr. 2-2 hr cl.  Prereq: 15 cr hrs in RurlSoc and/or Sociol at 400 level or above.

778 Sociology Theory Applied to Domestic Development  GRAD 5
Application of general sociological theories and development research findings to the analysis of domestic rural development; emphasis upon consensus and conflict models.  Au Qtr. 1-3 hr cl.  Prereq: 15 cr hrs in RurlSoc or Sociol or related social science.  Not open to students with credit for 786.06.

789 Survey Research Practicum  GRAD 5
888 Social Action in Community Development

Analysis of the social action process and its application to rural community development.

* WI, Sp Qtrs. Arr.

892 Rural Sociology of Development and Social Change

Overview of sociological principles, theories, and practice applied to international development and social change in rural settings.

** WI Qtr. 2.25-hr cl. Prereq: Grad standing. Not open to students with credit for 792. Offered even numbered years.

999 Research

GRAD 1-18

Research for thesis and dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded SU.

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Russian

101.01 Elementary Russian I

UGRD 5
Development of oral and written language skills.

Au, Wi, Qtr. Not open 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. GEC for lang course. FL Admis Cond course. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

101.51 Elementary Russian I: Individualized Track

UGRD 1-5
Development of oral and written language skills: Individualized Track.

Su, Au, Wi, Sp Qtrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Repeatable to a maximum of 5 cr hrs. Not open 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. GEC for lang course. FL Admis Cond course.

102.01 Elementary Russian II

UGRD 5
Development of oral and written language skills.

Prereq: 101.01 or 5 cr hrs of 101.51. Students must register for and complete 5 cr hrs during the qtr. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. FL Admis Cond course. This course is available for EM credit.

102.51 Elementary Russian II: Individualized Track

UGRD 1-5
Development of oral and written language skills: Individualized Track.

Su, Au, Wi, Sp Qtrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the quarter may proceed to 103.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Repeatable to a maximum of 5 cr hrs. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. FL Admis Cond course.

103.01 Intermediate Russian I

UGRD 5
Readings, oral and written practice, grammar review.

Au, Sp Qtrs. 5 cr. Prereq: 101.01 or 5 cr hrs or 101.51. Students must register for and complete 5 cr hrs during the qtr. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. This course is available for EM credit.

103.51 Intermediate Russian II: Individualized Track

UGRD 1-5
Readings, oral and written practice, grammar review.

Su, Au, Wi, Qtrs. Prereq: Grade of B- or above in 103.01 or 5 cr hrs of 103.51 or permission of instructor. Students may register for 103.51 and 105.51 concurrently with permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the quarter may proceed to 103.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Repeatable to a maximum of 5 cr hrs. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course.

104.01 Intermediate Russian II

UGRD 5
Readings, oral and written practice, grammar review. Balanced use of the four basic skills: reading, oral comprehension, speaking, and writing: emphasis on Russian literary texts.

Au, Wi Qtrs. Prereq: 103.01 or 5 cr hrs of 103.51. Not open to native speakers of this language through regular course enrollment or EM credit. Not open to students with credit for 104. This course is available for EM credit. GEC for lang course.

104.51 Intermediate Russian II: Individualized Track

UGRD 1-5
Readings, oral and written practice, grammar review: Individualized Track.

Su, Au, Wi, Sp Qtrs. Prereq: Grade of B- or above in 103.01 or 5 cr hrs of 103.51 or permission of instructor. Students may register for 103.51 and 105.51 concurrently with permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Repeatable to a maximum of 5 cr hrs. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course.

110 Intensive Elementary Russian

UGRD 5-10
An intensive course combining the content of 101.01 and 102.01.

* Not open to students with credit for 102, 102 decimal subdivisions, or 112; or to native speakers of this language through regular course enrollment or EM credit. Students with credit for 101 or any cr hrs of 101 decimal subdivisions may not register for more than 5 cr hrs. Equiv of first and second courses of the foreign language sequence; successful completion of 110-103 and 110-111 fulfills the ASC foreign language requirement. GEC for lang course.

111 Intensive Intermediate Russian

UGRD 5-10
An intensive course combining the content of 103.01 and 104.01.

* Prereq: 102. Not open to students with credit for 104 or 104 decimal subdivisions; or to native speakers of this language through regular course enrollment or EM credit. Equiv to third and fourth courses of the foreign language sequence; successful completion of 101-102-111 fulfills the Arts and Sciences foreign language requirement. Students with credit for 103 or any hours of 103 decimal subdivisions, or 112 may not register for more than 5 cr hrs. GEC for lang course.

135 Introduction to Russian Culture

UGRD 5
Russian literature in its cultural context, survey of the relationship of literature, art, music, and drama from the beginnings to the present.

Su, Au, Wi, Sp Qtrs. Taught in English. GEC arts and hums cultures and ideas and social diversity - international issues (Global) course.

235 Modern Russian Culture: Magnificence, Mayhem, and Mafia

UGRD 5
Modern Russian culture (magnificence, mayhem, and mafia) through analysis of literature, film, and visual arts.

4 cl. Taught in English. GEC arts and hums cultures and ideas and social diversity - international issues (Global) course.

250 Masterpieces of 19th Century Russian Literature

UGRD 5
Reading and analysis of great works of 19th century Russian literature by authors such as Alexander Pushkin, Ivan Turgenev, Fyodor Dostoevsky, Leo Tolstoy, and Anton Chekhov.

251 Masterpieces of 20th and 21st Century Russian Literature

UGRD 5
Reading and analysis of great works of 20th and 21st century Russian literature. 251H (honors) may be available.

4 cl. Taught in English. GEC arts and hums lit and social diversity - international issues (Global) course.

360 Russian Dreams and Nightmares: The Modern Russian Experience through Film

UGRD 5
Exploration of some of the most revealing hopes and disappointments of Russian people presented in internationally acclaimed Russian films.

Su, Aw, Qtr. 4 cl. Taught in English. No knowledge of Russian necessary. GEC arts and hums VPA and social diversity - international issues (Global) course.

401.01 Intermediate Russian

UGRD 5
Speaking, listening, reading, and writing practice in Russian at the Intermediate level. Prereq: 104.01 or 104.51 or permission of instructor. Not open to students with credit for 401.51, 405.01 or 405.51; or to native speakers of this language through regular course enrollment or EM credit.

401.51 Intermediate Russian: Individualized Track

UGRD 1-5
Speaking, listening, and writing practice in Russian at the Intermediate level. Individualized track.

Su, Au, Wi, Sp Qtrs. Prereq: 104.01 or 104.51 or permission of instructor. Not open to students with credit for 401.01 or 401.51 or 405.01 or 405.51; or to native speakers of this language through regular course enrollment or EM credit.

402.01 Intermediate Russian II

UGRD 5
Speaking, listening, reading and writing practice in Russian at the Intermediate level II.

Su, Au Qtr. 4 cl. Prereq: 104.51 or 105.51 or permission of instructor. Prereq: 402.01 or 402.51 or 405.01 or 405.51, or permission of instructor. Not open to students with credit for 401.01 or 401.51, 402.01 or 402.51, or 405.01 or 405.51; or to native speakers of this language through regular course enrollment or EM credit.

402.51 Intermediate Russian II: Individualized Track

UGRD 1-5
Speaking, listening, reading and writing practice in Russian at the Intermediate level II, individualized track.

Su, Au, Wi, Qtr. Prereq: 402.51 or 401.01, or 5 cr hrs of 405.01 or 405.51 or 401.51, or permission of instructor. Prereq: 402.01 or 402.51 or 405.01 or 405.51, or permission of instructor. Not open to students with credit for 402.01, 402.51 or 407.01 or 407.51; or to native speakers of this language through regular course enrollment or EM credit.

501 Contemporary Russian in Cultural and Literary Contexts I

UGRD 5
An intermediate Russian language course designed to improve the student's ability to communicate accurately and effectively in spoken and written Russian.

Au Qtr. Prereq: 402.01 or 407.01, 5 cr hrs of 402.51 or 407.51, or permission of instructor.

502 Contemporary Russian in Cultural and Literary Contexts II

UGRD 5
An intermediate Russian language course designed to improve the student's ability to communicate accurately and effectively in spoken and written Russian.

Wi Qtr. Prereq: 501 or 560, or permission of instructor.
390 Russian

503 Current Events through Russian Media UGRD 5
An introduction to the Russian mass media with an emphasis on current events; focuses on developing skills for approaching written and oral native Russian texts. Sp Qtr. Prereq: 502 or 561, or permission of instructor.

511 Language Maintenance Course UGRD 2
Intended for students desiring to maintain an active knowledge of Russian without enrolling in advanced courses in grammar, literature or linguistics. Intermediate level conversation and non-literary popular readings. 2 cl. Prereq: 407, 407.01 or 407.51 or permission of instructor. Repeatable to a maximum of 12 cr hrs. Credit does not count for the major or minor. This course is graded S/U.

512 Practical Russian Conversation UGRD 3
Contemporary Russian conversational patterns. Sp Qtr. 3 cl. Prereq: 30 hrs of Russian or permission or instructor. Not open to students with credit for 695, 895 or 995.

514 Camp Horizon (Lager’ Gorizont) UGRD 1
A weekend total immersion Russian language camp; Russian only spoken; lectures, discussions, films, singing, dancing. * Friday 6 pm-Sunday 2 pm. Prereq: 560 or equiv., or permission of instructor. Repeatable to a maximum of 4 cr hrs. Travel and subsistence costs will be borne by the student. This course is graded S/U.

520 The Golden Age of Russian Literature UGRD 5
Novels, stories, plays and poetry of the major early nineteenth-century Russian Writers, including Pushkin, Lermontov and Gogol. Taught in English.

521 Russian Literature in the Age of Realism UGRD 5
Explosion of the Age of Realism in Russia through prose writings of authors such as Turgeniev, Dostoevsky, Tolstoy, Chernyshevsky, and Chekhov. Prereq: English 110 or equiv. Taught in English.

522 Modernism and Revolution in Russian Literature UGRD 5
Decadent, modernist and avant-garde currents in Russian literature and culture at the beginning of the 20th century. Taught in English.

523 Rise and Fall of Soviet Literature UGRD 5
Literature of the Soviet and post-Soviet period representing some of the broad artistic and intellectual movements, such as socialist realism and postmodernism.

550 Russian Power, Culture and Politics UGRD 5
Examines contemporary facets of the Russian political system: state-society relations, political culture, political agency and power, and Russia within the context of globalization.

571 Basic Russian for Graduate Students GRAD 5
Basic elements of Russian grammar. Prereq: Grad standing. Credit does not apply to the minimum hours required for the master's or doctoral degrees.

572 Russian for Research I GRAD 3
Russian for Research I. Prereq: Grade of C or above in 571 or equiv. Credit does not apply to the minimum hours required for the master's or doctoral degrees. Repeatable to a maximum of 6 cr hrs. Satisfactory completion of this course (grade A or B) may be accepted by the student's dept as evidence of a thorough reading knowledge of Russian. Credit does not apply to minimum hrs required for the master's or PhD degree. No audit.

573 Russian for Research II GRAD 3
Reading of difficult material at a reasonable rate of speed and with only infrequent use of dictionaries. Prereq: Grade of A or B in 572 or equiv preparation demonstrated by a placement test and permission of instructor. Open only to grad students. Repeatable to a maximum of 6 cr hrs. Completion of this course with a grade of A or B may be accepted by the student's dept as evidence of a thorough reading knowledge of Russian. Credit does not apply to minimum hrs required for the master's or PhD degree. No audit.

580.51 Reading Russian: Individualized Track UGRD 1-5
Readings from a variety of sources, development of reading strategies. Su, Au, Wi, Sp Qtrs. Prereq: 402.01 or 407.01, or 5 cr hrs of 402.51 or 407.51, or permission of instructor. Repeatable to a maximum of 5 cr hrs.

581.51 Reading Russian: Individualized Track UGRD 1-5
Readings from a variety of sources, development of reading strategies. Su, Au, Wi, Sp Qtrs. Prereq: 580.51 or permission of instructor. Repeatable to a maximum of 5 cr hrs.

582.51 Russian Grammar Review: Individualized Track UGRD 1-5
Intensive review of Russian grammar and syntax. Su, Au, Wi, Sp Qtrs. Prereq: 581.51 or permission of instructor. Repeatable to a maximum of 5 cr hrs.

601 Advanced Russian I UGRD 5
Speaking, listening, reading and writing practice in Russian at the Advanced level. Prereq: 503 or 562, or permission of instructor.

602 Advanced Russian II UGRD 5
Speaking, listening, reading, and writing practice in Russian at the Advanced level. Prereq: 501 or permission of instructor.

617 Business Russian UGRD 5
Simulated trade negotiations with the Russians providing sufficient terminology to facilitate bilingual trade negotiations. Prereq: 30 hrs of Russian or permission of instructor.

631 Introduction to Russian Conversation UGRD 3
An introduction to linguistic concepts useful in the study of Russian; survey of major figures in Russian historical and descriptive linguistics. Prereq: 30 cr hrs in Russian.

635 Practical Russian Pronunciation UGRD 5
Lectures and practical exercises, use of phonetic symbols, corrective exercises, and problems of teaching pronunciation. Prereq: 30 cr hrs in Russian.

640 Introduction to the Structure of Russian UGRD 5
Elements of Russian pronunciation and grammar with comparisons to English.

644 Russian Folklore UGRD 5
From the beginning to present; proverbs, the oral epic, historical songs, folktales, the folk theatre; analysis of the folklore component in modern Russian literature. * Taught in English.

650 Dostoevsky UGRD 5
Critical analysis of the major novels and shorter works; intellectual and literary development of Dostoevsky. Prereq: Permission of instructor required of undergrad non-majors. Given in English but undergrad majors in Slavic will do prescribed portions of the reading in the original; grad students in Slavic must read in the original items starred on the departmental MA reading list.

651 Tolstoy UGRD 5
Analysis of all major works including the novels, plays, stories, and important polemical works. Prereq: Permission of instructor required of undergrad non-majors. Given in English but undergrad majors in Slavic will do prescribed portions of the reading in the original; grad students in Slavic must read in the original items starred on the departmental MA reading list.

653 Russian Drama UGRD 5
Emphasis on the period from 1850 to present day; Ostrovsky, Chekhov, Gorky, Andreyev, Blok, and Soviet writers Leonov and Kataev. ** Prereq: 10 cr hrs in Russian or other literature courses at the 200 level or above. Given in English but undergrad majors in Slavic will do prescribed portions of the reading in the original; grad students in Slavic must read in the original items starred on the departmental MA reading list.

655 Russian Women Writers UGRD 5
The contributions of women writers to Russian literature and culture in the 19th and 20th centuries; emphasis on the contesting and transformation of gender roles.

657 Gender and National Identity in Russian Cinema UGRD 5
Explores changes of Russian national and gender identities during the twentieth century as reflected in Russian cinema. Sp Qtr. 2 2-hr cl. Prereq: 360 or English 263 or 378 or FilmStd 270 or WGSSt 317 or grad standing or permission of instructor. Cross-listed in WGSSt. Taught in English. No prior knowledge of Russian language required.

660 Basic Approaches to the Study of Russian Literature UGRD 3
Historical overview of Russian literary criticism and theory; basic practical approaches to the study of literary texts. Prereq: Grad standing in dept or 25 hrs of Russian literature, or permission of instructor.

662 The Poetics of Russian Prose UGRD 4
Stylistic, thematic, and structural study of Russian prose as a developing genre in the 19th and 20th centuries.

664 Studies in 20th-Century Russian Literature UGRD 5
Offerings will include such topics as: the Serapion Brethren, literature and the revolution, prose of the 1920's emigre literature.

674 Russian Opera: Meanings and Identities UGRD 5
Study of Russian opera from 1838-1936 in relation to concurrent literary, cultural and social developments. 2 1.5-hr cl. Not open to students with credit for Music 674. Cross-listed in Music.

675 Writing Seminar on Topics of Russian Literature, Language, and Life UGRD 5
Junior-senior seminar explores issues of Russian language and literature, focusing on reading in Russian and on honing English oral and writing skills. Prereq: GEC second writing course; jr or sr standing; or permission of instructor. Not open to grad majors.

693.20 Individual Studies: Literature UGRD 2-10
Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept chairperson. Repeatable to a maximum of 30 cr hrs (including or hrs in 693.01 through 693.08) in any combination of decimal subdivisions. This course is graded S/U.
693.30 Individual Studies: Linguistics UGRD 2-10
Su, Au, WI, Sp Ctrs. Prereq: Permission of dept chairperson. Repeatable to a maximum of 30 or hrs (including cr hrs in 693.01 through 693.08) in any combination of decimal subdivisions. This course is graded S/U.

693.40 Individual Studies: Language UGRD 2-10
Su, Au, WI, Sp Ctrs. Prereq: Permission of dept chairperson. Repeatable to a maximum of 30 or hrs (including cr hrs in 693.01 through 693.08) in any combination of decimal subdivisions. This course is graded S/U.

693.50 Individual Studies: Unspecified UGRD 2-10
Su, Au, WI, Sp Ctrs. Prereq: Permission of dept chairperson. Repeatable to a maximum of 30 or hrs (including cr hrs in 693.01 through 693.08) in any combination of decimal subdivisions. This course is graded S/U.

694 Group Studies UGRD 2-10
Group Studies.
Su, Au, WI, Sp Ctrs. Prereq: Permission of dept chairperson. Repeatable to a maximum of 15 or hrs.

697 Study at a Foreign Institution UGRD 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, WI, Sp Ctrs. Arr. Prereq: Written permission of chair. Repeatable to a maximum of 45 or. This course is Progress (P) graded. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

711 Advanced Russian Linguistic Stylistics GRAD 5
Advanced study of Russian morphological, syntactic and semantic features and their stylistic function in a literary text.
Prereq: 610 or permission of instructor. Repeatable to a maximum of 10 or hrs.

720 History of the Russian Language UGRD 5
Survey of phonetic, morphological, and syntactic changes in Russian from prehistory to the present. Not open to students with credit for 820.

723 Topics in Russian Poetry UGRD 5
Topics vary: the history of Russian poetry, versification theory, literary schools such as symbolism, formalism, or futurism; study of individual poets from any period.
Prereq: 610 or permission of instructor. Repeatable to a maximum of 20 or hrs.

750 Pushkin and his Time GRAD 5
Analysis of Eugene Oneguin as poetry and an encyclopedia of the times; social, political, and cultural trends in the 1820s and 1830s, romantic poets.
Prereq: 10 hrs of Russian literature at the 200 level or above or permission of instructor.

751 Gogol' and 19th-Century Russian Satire UGRD 5
Satire in the works of Nikolay Gogol', Nikolay Leskov, and Mikhail Saltykov-Shchedrin studied in the context of Russian literary and social development.
** Prereq: 10 hrs in Russian or other literature in courses at the 200 level or above, or permission of instructor.

752 Turgenev, Chekhov, and Aspects of Russian UGRD 5
Realism
Study of Russian prose works outside of the satirical genre and others than the prose of Dostoievsky and Tolstoy.
Prereq: 10 hrs of Russian or other literature at the 200 level or above, or permission of instructor.

754 Contemporary 20th-Century Russian Literature GRAD 5
Russian literature of the 1980s through the present.
Prereq: Grad standing and good reading ability in Russian; or permission of instructor.

755 Film Adaptations of Russian Literature GRAD 5
This course examines how Russian literary classics have been transposed into Russian and foreign cinema. Readings and films include Dostoievsky, Tolstoy, and Chekhov.
Sp Ctr. Prereq: grad standing or permission of instructor.

801 College Teaching of Russian I GRAD 5
Methods and techniques for teaching Russian at the college level, selection and preparation of teaching and testing materials, the language laboratory, and other aids.
Au Ctr. Prereq: 611 or equiv., or permission of instructor. Requires participation in intensive workshops in September.

826 Topics in the Structure of Russian UGRD 5
Analysis and description of the structure of contemporary standard Russian.
Prereq: 640 or equiv with permission of instructor. Repeatable to a maximum of 15 or hrs.

827 Topics in the History of Russian UGRD 5
Development of Russian from Common Slavic to contemporary standard Russian with consideration of its place within East Slavic.
Prereq: 720 or equiv with permission of instructor. Repeatable to a maximum of 15 or hrs.

829 Old Russian Literature: 15th-17th Century GRAD 5
Study of literary works of various genres cultivated in this period.
831 Russian Literature, 1650-1800 GRAD 5
The baroque period, classicism, and sentimentalism; emphasis on the classical period of the 18th century.
Prereq: 2nd yr grad standing or permission of instructor.

851 Seminar in Russian Literature, 1820-1917 GRAD 3-5
Seminar in Russian Literature, 1820-1917.
Repeatable to a maximum of 15 or hrs.

852 Seminar in Russian Literature since 1917 GRAD 3-5
Seminar in Russian Literature since 1917.
Repeatable to a maximum of 15 or hrs.

932.20 Individual Studies: Literature GRAD 2-10
Prereq: Permission of dept chairperson. Repeatable to a maximum of 40 or hrs in any combination of decimal subdivisions. This course is graded S/U.

993.30 Individual Studies: Linguistics GRAD 2-10
Prereq: Permission of dept chairperson. Repeatable to a maximum of 40 or hrs in any combination of decimal subdivisions. This course is graded S/U.

993.40 Individual Studies: Language GRAD 2-10
Prereq: Permission of dept chairperson. Repeatable to a maximum of 40 or hrs in any combination of decimal subdivisions. This course is graded S/U.

993.50 Individual Studies: Unspecified GRAD 2-10
Prereq: Permission of dept chairperson. Repeatable to a maximum of 40 or hrs in any combination of decimal subdivisions. This course is graded S/U.

Sanskrit

621 Elementary Sanskrit UGRD 5
Introduction to Indo-European, Indic, and Sanskrit; reading of introductory texts.
* Not open to students with credit for Linguist 621.

622 Classical Sanskrit UGRD 5
Reading of classical Sanskrit texts.
* Prereq: 621 or permission of instructor. Not open to students with credit for Linguist 622.

Scandinavian

222 Nordic Mythology and Medieval Culture UGRD 5
The myths and gods of northern Europe and the culture which produced them within a modern social and psychological context.
Taught in English. GEC arts and hums lit and social diversity - international issues (Western) course.

500 Masterpieces of Scandinavian Literature UGRD 5
Selected masterpieces of Scandinavian literature in European cultural context.
Taught in English. GEC arts and hums lit course.

513 The Icelandic Saga UGRD 5
Introduces students to the Icelandic sagas, the greatest vernacular literature of the European Middle Ages.
Wi Ctr. 2.2- hr cl. Taught in English. GEC arts and hums lit course.

520 The Films of Ingmar Bergman UGRD 5
Major works of Sweden's foremost director; stress on film as a creative expression of the development of modern aesthetic and philosophical concerns.
3 cl. Taught in English. GEC arts and hums VPA and social diversity - international issues (Western) course.

571 Reading the Scandinavian Languages UGRD 5
Fundamentals of grammar of the Scandinavian languages for research purposes in the humanities, sciences, and social and behavioral sciences.
5 cl.

693 Individual Studies UGRD 2-5
Investigation of problems in the various fields of Scandinavian literature and philology.
Au, WI, Sp Ctrs. Arr. Prereq: Permission of chairperson. Repeatable to a maximum of 25 or hrs.
This course is graded S/U.

710 Introduction to Old Norse-Icelandic UGRD 5
Introduction to the grammer of Old Norse-Icelandic language. Brief overview of Old Norse literature and the context of its production.
Wi Ctr.

710 Introduction to Old Norse-Icelandic UGRD 5
Introduction to the grammer of Old Norse-Icelandic language. Brief overview of Old Norse literature and the context of its production.
Wi Ctr.

783H Honors Research UGRD 3-5
A program of research for each student which includes individual conferences and which culminates in an honors thesis or oral defense.
Au, WI, Sp, Ctr. Prereq: Approved candidacy for graduation with distinction, which include humanities, sciences, and social and behavioral sciences.

993.30 Individual Studies: Linguistics GRAD 2-10
Prereq: Permission of dept chairperson. Repeatable to a maximum of 40 or hrs in any combination of decimal subdivisions. This course is graded S/U.

993.40 Individual Studies: Language GRAD 2-10
Prereq: Permission of dept chairperson. Repeatable to a maximum of 40 or hrs in any combination of decimal subdivisions. This course is graded S/U.

993.50 Individual Studies: Unspecified GRAD 2-10
Prereq: Permission of dept chairperson. Repeatable to a maximum of 40 or hrs in any combination of decimal subdivisions. This course is graded S/U.

Sensory Biophysics
**Serbo-Croatian**

- **101.01 Elementary Serbo-Croatian I**
  - UGRD 5
  - Not open 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. GEC for lang course. FL Admis Cond course.

- **102.01 Elementary Serbo-Croatian II**
  - UGRD 5
  - Prereq: 101 or 101.01 or 5 cr hrs of 101.51 or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. FL Admis Cond course.

- **103.01 Intermediate Serbo-Croatian I**
  - UGRD 5
  - Prereq: 102 or 102.01 or 5 cr hrs of 102.51 or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course.

- **104.01 Intermediate Serbo-Croatian II**
  - UGRD 5
  - Continuation of 103; development of the four skills. Prereq: 103.01 or 5 cr hrs of 103.51 or equiv or permission of instructor. Not open to students with credit for 104 or 111; or to native speakers of this language through regular course enrollment or EM credit. GEC for lang course.

- **405.01 Conversation and Composition I**
  - UGRD 5
  - Reading texts of moderate difficulty, conversation, and simple compositions. Prereq: 104.01 or 5 cr hrs of 104.51 or 111 or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course.

- **405.51 Conversation and Composition I: Individualized Track**
  - UGRD 1-5
  - Reading texts of moderate difficulty, conversations, and simple compositions. Prereq: 104.01 or 5 cr hrs of 104.51 or 111 or permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Repeatable to a maximum of 5 cr hrs. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 405.51 and 407.51 concurrently with permission of instructor.

- **407.01 Conversation and Composition II**
  - UGRD 5
  - Reading from modern Serbo-Croatian literature, practice in writing and speaking.

- **407.51 Conversation and Composition II: Individualized Track**
  - UGRD 1-5
  - Reading from modern Serbo-Croatian literature; practice in writing and speaking. Prereq: 405.01 or 5 cr hrs of 405.51 or permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Repeatable to a maximum of 5 cr hrs. Progress is sequential from one cr hr to the next with proficiency at the level of 80% required for advancement. Students may register for 405.51 and 407.51 concurrently with permission of instructor.

- **580.51 Reading Serbo-Croatian I: Individualized Track**
  - UGRD 1-5
  - Development of reading skills; short texts and headlines from contemporary popular journals and newspapers. Arr. Prereq: 5 cr hrs of 407 or permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Repeatable to a maximum of 5 cr hrs. Progress is sequential from one cr hr to the next with proficiency at the level of 80% required for advancement. Students may register for 407.51 and 580.51 concurrently with permission of instructor.

- **581.51 Reading Serbo-Croatian II: Individualized Track**
  - UGRD 1-5
  - Continuation of 580.51; reading of somewhat more difficult unedited texts from contemporary magazines and newspapers; reading for comprehension without a dictionary. Arr. Prereq: 5 cr hrs of 580.51 or permission of instructor. Repeatable to a maximum of 5 cr hrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next with proficiency at the level of 80% required for advancement. Students may register for 580.51 and 581.51 concurrently with permission of instructor.

**Shona**

- **101.01 Elementary Shona I**
  - UGRD 5
  - Development of oral proficiency in elementary conversational Shona. *GEC for lang course.*

- **102.01 Elementary Shona II**
  - UGRD 5

- **103.01 Intermediate Shona I**
  - UGRD 5

- **104.01 Intermediate Shona II**
  - UGRD 5
  - Continued development of oral proficiency in intermediate conversational Shona. *Prereq: 103. GEC for lang course.*

**Slavic and East European Studies**

- **130.01 Introduction to Slavic Culture: The Vampire in East European and American Culture**
  - UGRD 5
  - Introduction to East European culture (including ethnic subgroups and religions), focusing on beliefs about vampires and their influence on western literature, film, and popular culture. Au Qtr. Taught in English. GEC arts and hums cultures and ideas and social diversity - international issues (Western) course.

- **245.01 Introduction to Slavic Literature and Culture**
  - UGRD 5
  - Selected Slavic or East European literature(s) in its/their cultural context; relationships between literature, film, drama; may include art and music. Repeatable to a maximum of 15 or hrs. Taught in English. GEC arts and hums lit and social diversity - international issues (Western) course.

- **251.01 Underground Literatures and Unofficial Cultures in Old and New Media**
  - UGRD 5
  - Cultural history of underground activity in 20th Eastern Europe with a focus on contemporary issues in media studies. No prior knowledge of Eastern European culture or language required. GEC arts and hums lit and international issues (non-western or global) course.

- **294.01 Group Studies**
  - UGRD 1-5
  - Group Studies. Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 10 cr hrs.

- **360.01 Screening Minorities: Representations of the Other in Slavic Film**
  - UGRD 5
  - The course explores film representations of ethnic and religious others in East European cinema. Wi Qtr. GEC arts and hums VPA course.

- **367.01 The East European Experience in America**
  - UGRD 5
  - An intermediate course that extends and refines expository writing and analytic reading skills, with an emphasis on writings about issues presented through the diverse voices of Eastern European immigrants in the United States from the nineteenth century to the present day. Prereq: English 110 or 111, or equiv with permission of instructor; and soph standing. GEC second writing and social diversity in the US course.

- **520.01H Slavic and European Cities: The City of Sarajevo**
  - UGRD 5
  - A literary and cultural analysis of the city of Sarajevo as an urban space using sources from many periods and cultures. Prereq: English 110 or equivalent.

- **583H Cinderella's Fantasy: Gender and Women in Western and Eastern Europe**
  - UGRD 5
  - The complementary nature of feminists' notions in Western and Eastern European societies and cultures via literature and film. Prereq: Enrollment in an honors program or by permission of department or instructor. Taught in English. Films have English subtitles.

- **584H Dead Man Writing: Literary Representations of Capital Punishment**
  - UGRD 5
  - Study of execution as a theme in literature of the nineteenth and twentieth centuries. Au Qtr. 2 hr cr. Prereq: Enrollment in an honors program or by permission of department or instructor. Taught in English.

- **671.01 Grammar of Selected Slavic Languages**
  - UGRD 5
  - Fundamentals of grammar required for reading; the language to be taught will change each yea. Prereq: Permission of instructor. Repeatable to a maximum of 25 or hrs. Individual languages not repeatable. Taught in English.

- **672.01 Reading of Selected Slavic Languages**
  - UGRD 5
  - Reading of elementary and intermediate texts and translation into English. Prereq: 671 (same language) or equiv. Repeatable to a maximum of 25 or hrs. Individual languages not repeatable. Taught in English.

- **693.20 Individual Studies: Literature**
  - UGRD 2-10
  - Prereq: Permission of dept chairperson. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

- **693.30 Individual Studies: Linguistics**
  - UGRD 2-10
  - Prereq: Permission of dept chairperson. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

- **693.40 Individual Studies: Languages**
  - UGRD 2-10
  - Prereq: Permission of dept chairperson. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

- **693.50 Individual Studies: Unspecified**
  - UGRD 2-10
  - Prereq: Permission of dept chairperson. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.
694 Group Studies UGRD 1-10
Group Studies.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept. chairperson. Repeatable to a maximum of 10 cr hrs.

697 Study at a Foreign Institution UGRD 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept. chairperson. Repeatable to a maximum of 45 cr hrs. This course is Progress ("P") graded. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

700 Introduction to Slavic and East European Studies GRAD 5
Central topics, current research, and research methodology in the Slavic and East European area studies.
Au Qtr. Prereq: Grad standing or permission of instructor.

760 Survey of the Slavic Languages UGRD 5
A general survey of all the Slavic languages and their common features. Not open to students with credit for 860. Knowledge of a Slavic language is helpful but not required.

770 Violence and Altery in the Balkans UGRD 5
Au Qtr. Prereq: Grad standing or permission of instructor.

783H Honors Research UGRD 3-5
Honors Research.
Au, Wi, Sp Qtrs. Prereq: 4th yr standing; a grade of A in at least half of the Slavic 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. Repeatable to a maximum of 15 cr hrs. Failure to receive a mark of S in this course is a disqualification for special honors. This course is graded S/U.

792 Interdepartmental Studies in the Humanities GRAD 3-5
Two or more departments present collosqua on subjects of mutual interest; topics to be announced.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

802 Introduction to Second Language Acquisition GRAD 5
This course follows the 801 workshop and RUB01 training course and introduces students to the major issues in the field of Second Language Acquisition.
Wi Qtr. Prereq: Russian 801 or other 801 course.

803 Cognitive and Linguistic Aspects of Bilingualism GRAD 5
This course discusses the main issues in the field of Bilingualism from four different perspectives: linguistic, psycholinguistic, socio-linguistic, and applied linguistic.
Prereq: Graduate status or permission of instructor.

804 LANGUAGE and MEMORY: Psycholinguistic Approach to Bilingualism GRAD 5
This course focuses on psycholinguistic works related to MEMORY and its role in LANGUAGE processing, learning, and forgetting.
Prereq: Graduate status or permission of instructor.

810 Old Church Slavonic GRAD 5
Study of the earliest Slavic language, reading and linguistic interpretation of original documents.

812 Readings in Church Slavonic Texts GRAD 5
Reading and analysis of Church Slavonic texts of the later period.
Prereq: 810 or permission of instructor.

814 Slavic Paleography GRAD 5
Fundamentals of Slavic paleography with special reference to the manuscripts on microfilm housed in the Hilander Research Library.
* Su (2nd term) Qtr. 2 cl, 2 lab. Prereq: 810 and 812 or permission of instructor.

821 Structure of Selected Slavic Languages GRAD 5
Structure of any of the following: Belorussian, Bulgarian, Czech, Sorbian, Macedonian, Polish, Serbo-Croatian, Slovak, Slovenian, or Ukrainian.
Prereq: Permission of instructor. Repeatable to a maximum of 25 cr hrs. Individual languages not repeatable.

834 Medieval Slavic Literatures 9th-14th Century GRAD 5
Emphasis on the Eastern and South Slavic literatures.
Prereq: Permission of instructor.

861 History of the South Slavic Languages GRAD 5
Bulgarian, Macedonian, Serbo-Croatian, and Slovenian, with emphasis on Serbo-Croatian and its relation to the other South Slavic languages.
Prereq: Good command of Russian and acquaintance with a second Slavic language or permission of instructor.

862 History of the West Slavic Languages GRAD 5
Polish, Czech, Slovak, Polabian, Kashubian, and Sorbian, with special emphasis on Polish and its relation to the other West Slavic languages.
Prereq: Good command of Russian, and acquaintance with a second Slavic language or permission of instructor.

864 Comparative Slavic Grammar GRAD 5
Development of Indo-European phonology and morphology into Common Slavic and the development in contemporary Slavic languages.
Prereq: 760 or permission of instructor.

870 Seminar in Slavic Philology GRAD 3-5
Historical and comparative studies in the Slavic languages and related language families, including Baltic and Finno-Ugric.
Repeatable to a maximum of 20 cr hrs.

871 Seminar in Slavic Linguistics GRAD 3-5
Descriptive and transformational studies in Russian and other Slavic languages.
Repeatable to a maximum of 20 cr hrs.

875 Seminar in Slavic Literature GRAD 3-5
Selected topics from medieval and modern literature.
* Au Qtr. 2 cl. Repeatable to a maximum of 15 cr hrs.

894 Group Studies GRAD 5
Group Studies.
Su, Au, Wi, Sp Qtrs. Repeatable.

999 Research in Slavic GRAD 1-18
Research for thesis purposes only.
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

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Social and Behavioral Sciences, College of

100 Social and Behavioral Sciences Survey UGRD 1
Academic requirements, University procedures, grading system, resources; student rights and responsibilities; overview of Social and Behavioral Sciences areas of study, Arts and Sciences services. 100H (honors) may be available.
Au Qtr. Not open to students with credit for AgrHnt 100, ArtsCol 100.01 or 100.02, ArtsSci 100 or 100.01 or 100.02, BioSci 100, Engineer 100, HumCol 100, MPPSci 100, or any decimal subdivision of UnivCol 100. This course is graded S/U.

101 Capstone Course in Public Policy UGRD 5
Integrative course based on social and behavioral science perspectives about public policy: methods, case studies, analyses, policy solutions.
Prereq: PolSci 305 and Econ 532 (or AEDEcon 631) and two courses in a specialization area of the SBS Public Policy minor.

694 Group Studies UGRD 1-5
Interdisciplinary studies in the social and behavioral areas. Repeatable to a maximum of 15 cr hrs.

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Social Work

100 Social Work Survey UGRD 1
Introduction to university undergraduate community and strategies for a successful transition; exploration of the social work profession.
Su, Au, Wi, Sp Qtrs. 2 1.5-hr cl, 1 2-hr lab. GEC soc sci individuals and groups course.

220 Introduction to Social Welfare UGRD 5
Introduction to the history, structure, and function of the social welfare institution. Examines the nature and causes of social problems, explores the influence of societal values and beliefs on the social welfare system, considers issues of diversity and discrimination, and explores student values and beliefs related to social welfare issues.
SOC soc sci human, natural, and economic resources course.

230 Introduction to Social Work in a Contemporary Society
An introduction to the core values, fundamental goals, unique functions and methods of the social work profession.
Su, Au, Wi, Sp Qtrs. 2 1.5-hr cl, 1 2-hr lab. GEC soc sci individuals and groups course.
## 394 Social Work

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Units</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>300</td>
<td>Minority Perspectives: Race, Ethnicity, and Gender</td>
<td>UGRD 5</td>
<td>Examination of the structure of human societies, cultures, and institutions, and the allocation of resources from the vantage point of oppressed minority populations. Au, Wi, Sp Qtr. 2.5-hr cl. 1 hr lab. GEC social diversity in the US course.</td>
</tr>
<tr>
<td>301</td>
<td>Needs and Social Conditions of Latino/as, Social Policies, and Human Services</td>
<td>UGRD 5</td>
<td>Role of current social policies and human services in the lives of Latino/as, including public assistance health, education, immigration, border issues, and official language policy. Sp Qtr. 2.5-hr cl. Prereq: 10 cr hrs of course work in pol sci, psych, or sociol. GEC social diversity course.</td>
</tr>
<tr>
<td>310</td>
<td>Prevention and Youth Development through Sport, Recreation, and Play</td>
<td>UGRD 5</td>
<td>Based on ecological theory, this course focuses on how human characteristics and environmental contexts contribute to social, academic, and health-related problems among youth. Prereq: Sophomore, junior, or senior standing.</td>
</tr>
<tr>
<td>494</td>
<td>Group Studies</td>
<td>UGRD 2-5</td>
<td>Designed to give students an opportunity to pursue special studies not otherwise offered in an academic framework.</td>
</tr>
<tr>
<td>503</td>
<td>Juvenile Delinquency: Origins and Social Control</td>
<td>UGRD 5</td>
<td>Examination of juvenile delinquency as a social problem with emphasis on its history, policy initiatives, and treatment. Wi Qtr. 2.5-hr cl. Prereq: Jr standing; 15 cr in social sciences. GEC contemporary world course.</td>
</tr>
<tr>
<td>520</td>
<td>Problems, Policies, and Programs in Social Welfare I</td>
<td>UGRD 3</td>
<td>An introduction to historical backgrounds and the utilization of an analytical framework in the study of the American welfare system. 520H (honors) may be available. Au Qtr. 1-hr cl. Prereq: SocWork major; nonmajors with permission only.</td>
</tr>
<tr>
<td>521</td>
<td>Problems, Policies, and Programs in Social Welfare II</td>
<td>UGRD 3</td>
<td>Application of an analytical framework to the study of current issues and problems of policies, programs and social welfare services in the perspective of the American welfare system. Wi Qtr. 1.5-hr cl. Prereq: 520 or 522.</td>
</tr>
<tr>
<td>533</td>
<td>Human Behavior in the Social Environment I</td>
<td>UGRD 3</td>
<td>Study of life cycle, growth, and development from birth through middle childhood from a biopsychosocial perspective; theories of personality discussed in relationship to growth and development. 533H (honors) may be available.</td>
</tr>
<tr>
<td>534</td>
<td>Human Behavior in the Social Environment II</td>
<td>UGRD 3</td>
<td>Study of life cycle from young adulthood through old age including dying and death; discussion of influences on social functioning of group relationships, organizations, and institutions. Wi Qtr. 1.5-hr cl. Prereq: 533.</td>
</tr>
<tr>
<td>570</td>
<td>Quantitative Analyses of Social Data</td>
<td>UGRD 5</td>
<td>Examination of welfare data with a focus on data analysis; review of descriptive and inferential methods with a primary emphasis on interpretation and computer applications. Wi Qtr. 2.5-hr cl. 1.5 lab hrs. Prereq: 230 and Math 104 or equiv. GEC data analysis course. 570E may be available for honors embedded experience.</td>
</tr>
<tr>
<td>570E</td>
<td>Quantitative Analyses of Social Data</td>
<td>UGRD 5</td>
<td>Examination of welfare data with a focus on data analysis; review of descriptive and inferential methods with a primary emphasis on interpretation and computer applications. Wi Qtr. 2.5-hr cl. 1.5 lab hrs. Prereq: Math 104, Math 116, Math 131, Math 130, Math 148, Math 150, Math 151, or Placement Levels MP1/MP2.</td>
</tr>
<tr>
<td>571</td>
<td>Introduction to Research Methods In Social Work</td>
<td>UGRD 4</td>
<td>Science and society; research design; measuring variables; data collection, processing, and analysis. 571H (honors) may be available. Au Qtr. 2.2-hr cl.</td>
</tr>
<tr>
<td>576</td>
<td>Critical Assessment of Social Research</td>
<td>UGRD 5</td>
<td>Development of practical skills in critical and analytic writing in weighing competing ideas both in written and oral forms. Sp Qtr. 2.5-hr cl. Prereq: 571 or equiv. English 110 or 111, second writing course, and jr or sr standing. LARC course. GEC data analysis course. 576E may be available for honors embedded experience.</td>
</tr>
<tr>
<td>593</td>
<td>Individual Studies</td>
<td>UGRD 1-5</td>
<td>Individual study projects on problems and services in selected areas of social welfare; report required. Su, Au, Wi, Sp Qtrs. Prereq: 10 cr hrs in SocWork or related courses, approval of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.</td>
</tr>
</tbody>
</table>
Social Work 395

695.16 Integrative Seminars: Physical Health Care UGRD 3
Examines the various fields of social work practice; focuses on developing the ability to set practice goals, decide methods of intervention, implement, and evaluate consequences. Wi Qtr. 1 3-hr cl. May be taken to fulfill social work elective or hrs.

695.17 Integrative Seminars: AIDS: Facts and Issues UGRD 3
Examines the various fields of social work practice; focuses on developing the ability to set practice goals, decide methods of intervention, implement, and evaluate consequences. Au Qtr. 1 3-hr cl. Certificate upon completion of 695.17, 695.18, 695.19.

695.18 Integrative Seminars: AIDS: Psychosocial UGRD 3
Examines the various fields of social work practice; focuses on developing the ability to set practice goals, decide methods of intervention, implement, and evaluate consequences. Sp Qtr. 1 3-hr cl. Prereq: 695.18. Certificate upon completion of 695.17, 695.18, 695.19.

695.19 Integrative Seminars: AIDS: Community UGRD 3
Examines the various fields of social work practice; focuses on developing the ability to set practice goals, decide methods of intervention, implement, and evaluate consequences. Su, Au Qtr. 1 3-hr cl.

695.20 Integrative Seminars: Sexuality, Diversity, and UGRD 3
Social Work
Ecological and social systems perspectives on sexual diversity for social workers and human services professionals. Content consistent with social work ethics and values; especially advocacy for the marginalized and oppressed.
Su, Au, Wi, Sp Qtrs. 1 3-hr cl. Prereq: Sr standing or permission of instructor.

695.21 Integrative Seminars: Child Welfare I UGRD 3
Protecting Children by Strengthening, Supporting and Empowering Families. Provides knowledge, concepts and tools needed for beginning practice in public and private child welfare including family issues and social policies.
Wi Qtr. 1 3-hr cl. Prereq: 695.21.

695.22 Integrative Seminars: Child Welfare II UGRD 3
Addressing Children's Developmental and Permanency Needs. Addresses developmental needs of children in child welfare system including effects of maltreatment, separation, placement issues, and adoption.
Wi Qtr. 1 3-hr cl. Prereq: 695.21.

695.23 Integrative Seminars: Social Work and the Law UGRD 3
How legal concepts and principles shape policy and practice; how social research is used by the legal system and how social activism influences the legal system.
Su, Au, Wi, Sp Qtrs. 1 3-hr cl. Prereq: Sr standing. May be taken to fulfill social work elective credits.

695.24 Integrative Seminars: Caregiving Across the Life Span UGRD 3
Contemporary issues, Programs and Policies. Needs of individuals providing care for a chronically ill or disabled family member or friend are addressed including issues faced by diverse and oppressed populations.
Wi Qtr. 1 3-hr cl. Prereq: Sr ranking. May be taken to fulfill Undergraduate and Graduate Interdisciplinary Specializations in Aging elective.

695.25 Integrative Seminars: Women and Aging: International Perspectives UGRD 3
Introduction to the diversity of aging experiences for women throughout the world: explore current and historical, social, economic, and health realities of older women.
Wi Qtr. 1 3-hr cl. Fullfills elective credit in Undergraduate and Graduate Interdisciplinary Specializations in Aging.

696H Thesis Seminar UGRD 3
Direction will be provided to facilitate honors students and MSW students at designing a thesis proposal.
Au Qtr. 1 2.5-hr cl. Prereq: 576 or MSW major. Not open to students with credit for 694H. Open only to SocWork majors.

697.01 Study at a Foreign Institution: India UGRD 5
Social Work in the Context of Social Development: Comparative Policy and Practice in India. An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Emphasizes comparative social work practice and policy within a social development framework; addresses a variety of fields of practice: health, child welfare, and others. Su Qtr. Arr. Prereq: Permission of instructor; concurrent enrollment required in IntStdts 697 (Indian History, Society, and Culture). This course is Progress (P) graded. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs. Course taught on location in South India (mostly Madras) as part of an International Education offering.

697.02 Study at a Foreign Institution: Eastern Europe UGRD 9
Social Welfare in Eastern Europe: The Polish Experience. An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Focus on social welfare policy and practice in Poland through lectures and visits to social service agencies in Cracow, Poland.
Su, Au Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 18 or hrs. This course is Progress (P) graded. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs. Preference given to social work majors. Cross-listed with International Studies 697.

697.03 Study at Foreign Institution: Mexico GRAD 10
Examines knowledge for practice with immigrant populations; history and culture of Mexico, economic pressures, immigration and its effects on immigrants, families and communities in Mexico.
Su, SocWork 695.08, or permission of instructor.

698.01 Study Tour: Domestic UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only.

698.02 Study Tour: Foreign UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only.

699H Honors Research UGRD 3-14
Research for Honors Thesis purpose only.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: 696H. Repeatable to a maximum of 14 or hrs. This course is graded S/U.

700.01 Seminar on Interprofessional Care GRAD 3
Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation. Treatment of the whole person through the analysis of the interrelated problems of actual patients/clients.
Wi, Sp Qtrs. Repeatable to a maximum of 9 or hrs. Limited to students in allied medical professions, education, law, medicine, nursing, social work, and theology.

700.03 Interprofessional Education: Ethical Issues GRAD 3
Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation. Ethical issues of concern to the professions and arising out of the advanced technology: euthanasia, mind control, malpractice, and social responsibility of the professions.
Au Qtr. Repeatable to a maximum of 9 or hrs. Limited to students in allied medical professions, education, law, medicine, nursing, social work, and theology.

709 Poverty in Social Work Practice: An Immersion Approach GRAD 3
A conceptual framework for effective social work practice with oppressed, impoverished, and disfranchised populations.
Au Qtr. 1 2.5-hr cl. Prereq: Admission to Master’s of Social Work.

710 Women's Issues in Social Work GRAD 3
Examination of relevant issues in the professional practice of social work.
Su, Au, Wi Qtrs. 1 2.5-hr cl. Prereq: Grad standing.

711 Race and Ethnicity in Social Work Practice GRAD 3
An analytical approach to problems, needs, and intervention for effective social work practice with the oppressed target populations of Appalachians and Blacks.
Su, Au, Wi Qtrs. 1 2.5-hr cl. Prereq: Grad standing.

712 Social Welfare and the Jewish Community GRAD 3
A study of the historical, cultural, and religious antecedents for the development of the current organization of Jewish Communal Services in the United States.
Sp Qtr. 1 2.5-hr cl. Prereq: Grad standing.

713 Social Work Practice in the Schools GRAD 3
Examination of major issues in American schools, theoretical framework for social work services, delivery of services, models of school social work intervention, and intervention strategies.
Sp Qtr. 1 2.5-hr cl. Prereq: 746 or 747.

714 Loss and Grief: A Social Work Practice Perspective GRAD 3
Examines theoretical, cultural, social, and personal aspects of loss and grief and how they affect the clients' lives from a social work practice perspective.
Prereq: Grad standing.

715 Affirmative Clinical Social Work Practice with LGBTQ Individuals, Couples, and Families GRAD 3
Introduces the salient issues, stressors, and life-course phenomena distinctive to being LGBTQ to structured a clinical practice foundation: addressing diversity, oppression, and stigma from a strength-based, affirmative lens for clinical social work practice.
Sp Qtr. Prereq: Social Work grad or permission of instructor.

7171.01 Family Systems: An Interdisciplinary Approach to Families of Handicapped Children UGRD 3
Focus on interdisciplinary topics in mental retardation and development disabilities.
Wi Qtr. 1 3-hr cl. Prereq: Permission of instructor. Not open to students with credit in 717.01 in any cross-listed areas. Cross-listed in Allied Medicine, Education: Physical Activity and Educational Services, Human Development and Family Science, Human Nutrition, Psychology, and Speech and Hearing Science.
396 Social Work

717.02 Interdisciplinary Perspectives on Autism Spectrum Disorders
Focus on interdisciplinary topics in mental retardation and developmental disabilities. Critical examination of the latest information on biomedical, psycho-social, educational, communication and language, family and sensory issues of autism spectrum disorders. Su Qtr. 1.3 hr-cl. Preq: Permission of instructor. Not open to students with credit in 717.02 in any cross-listed areas. Cross-listed in Allied Medicine, Education: Physical Activity and Educational Services, Human Development and Family Science, Human Nutrition, Nursing, Psychology, and Speech and Hearing Science.

717.03 Developmental Disabilities
Focus on interdisciplinary topics in mental retardation and developmental disabilities. Focus on the most pertinent scientific and societal issues of developmental disabilities. Au Qtr. 1.3 hr-cl. Preq: Permission of instructor. Not open to students with credit for 717.03 in any of the cross-listed areas. Cross-listed in Allied Medicine, Education: Physical Activity and Educational Services, Human Development and Family Science, Human Nutrition, Nursing, Psychology, and Speech and Hearing Science.

720 Social Welfare Policies and Programs I
Historical and comparative analysis of social welfare systems; their relationship to change in the basic social institutions: family, church, government, and economic institutions. Au Qtr. 1.25-hr cl. Preq: SocWork grad standing or permission of instructor.

721 Social Welfare Policies and Programs II
The development and application of a conceptual model for social welfare policy and program analysis. Wi Qtr. 1.25-hr-cl. Preq: 720.

730.01 Seminars in Social Functioning: Institutional and Organizational Behavior
Critical examination of personality, interactional, small group, organizational and community concepts and approaches used in social welfare analysis of social dysfunction. Preq: SocWork grad standing.

730.02 Seminars in Social Functioning: Psychopathology and Deviance
Critical examination of personality, interactional, small group, organizational and community concepts and approaches used in social welfare analysis of social dysfunction. Preq: SocWork grad standing.

733 Human Behavior and the Social Environment I
Social work theories and concepts related to individuals and families as they develop over the life span; systems models provide a unifying framework. Wi Qtr. 1.25-hr-cl. Preq: SocWork grad standing or permission of instructor.

734 Human Behavior and the Social Environment II
Continues applying the social work systems and life span frameworks to extra-familial environments (i.e., groups, communities and cultures) that affect individual development and social functioning. Wi Qtr. 1.25-hr-cl. Preq: 733.

741.02 Clinical Practice: Individuals
Theory and methods of clinical social work practice with individuals. Su, Au Qtr. 1.25-hr-cl. Preq: 745 and 746 or 747.

741.03 Clinical Practice: Couple and Family Therapy
Theory and methods of clinical social work practice with families. Wi Qtr. 1.25-hr-cl. Preq: 745 and 746 or 747.

741.04 Clinical Practice: Crisis Intervention
Theory and methods of intervention of clinical social work practice with individuals, families, and groups. Sp Qtr. 1.25-hr-cl Preq: 745 and 746 or 747.

741.05 Clinical Practice: Groups
Theory and methods of clinical social work practice with groups. Au Qtr. 1.25-hr-cl. Preq: 745 and 746 or 747.

741.09 Clinical Practice: Special Topics

742.02 Administrative Aspects of Practice in Human Service Organizations: Staffing
Conceptual framework for the staff management of human services professionals. Au Qtr. 1.25-hr-cl. Preq: 745 and 746 or 747.

742.04 Administrative Aspects of Practice in Human Service Organizations: Program Design and Management
Examines generic functions and processes of administration in relation to a conceptual framework for the management of human services professionals. Au Qtr. 1.25-hr-cl. Preq: 745 and 746 or 747.

742.05 Administrative Aspects of Practice in Human Service Organizations: Financial Management
Examines generic functions and processes of administration in relation to a conceptual framework for the management of human services professionals, based in a social work value orientation; application to public and voluntary social welfare/human services organizations. Wi Qtr. 1.25-hr-cl. Preq: 742.04.

742.06 Administrative Aspects of Practice in Human Service Organizations: Management Information Systems
Examines generic functions and processes of administration in relation to a conceptual framework for the management of human services professionals, based in a social work value orientation; application to public and voluntary social welfare/human services organizations. Wi Qtr. 1.25-hr-cl. Preq: 742.04.

742.07 Administrative Aspects of Practice in Human Service Organizations: Resource Acquisition
Learn rationale and methods for acquiring resources for both public and private human service organizations with emphasis on grant writing, fund raising and related topics. Sp Qtr. 1.25-hr-cl. Preq: 745 and 746 or 747.

742.09 Administrative Aspects of Practice in Human Service Organizations: Special Topics
Examines generic functions and processes of administration in relation to a conceptual framework for the management of human services professionals, based in a social work value orientation; application to public and voluntary social welfare/human services organizations. Su Qtr. Arr. Preq: 746 or 747. Repeatable to a maximum of 20 cr hrs.

743.03 Social Planning Aspects of Practice: Advanced Community Practice
Concepts and strategies involved in the design, planning, implementation, monitoring, and evaluation of social delivery. Sp Qtr. 1.25-hr-cl. Preq: 745 and 746 or 747.

744 Social Work Practice Lab
Didactic and experiential learning of generalist practice skills. Au Qtr. 1.3-hr cl. Open only to social work major only of grad standing. This course is graded S/U.

745 Practice and Profession I
Assessment, planning and contracting with various levels of client systems within the context of the profession's commitment to an ecosystem perspective. Wi Qtr. 1.25-hr-cl. Preq: 744.

746 Practice and Profession II
Intervention, evaluation and termination with various sized client systems within the context of the profession's commitment to an ecosystem perspective. Wi Qtr. 1.25-hr-cl. Preq: 744. Open only to SWK majors.

747 Graduate Integrative Practice Seminar
Integrate knowledge from undergraduate practice foundation into a more advanced generalist practice framework using micro and macro case-based practice applications with attention given to populations-at-risk. Su Qtr. 2.2-hr-cl. Preq: ASAP standing. Not open to students with credit for 744, 745 or 746.

750.01 Social Welfare Policies and Programs: Child and Family Services
Understanding and application of the analytic model of social welfare policies and programs with special emphasis on the disadvantaged as applied to child and family social work practice. Preq: 721 and 745 or 747. Students may not register for more than a total of 9 cr hrs under this series.

750.02 Social Welfare Policies and Programs: Aging
Examination of social welfare policies affecting the elderly; identification of current and future issues and comparison of international, federal, state, and local programs. Preq: 721 and 745 or 747. Students may not register for more than a total of 9 cr hrs under this series.

750.03 Social Welfare Policies and Programs: Health
Analysis of social and economic policies and political forces which influence the delivery of health services and the role of social workers in health care. Preq: 721 and 745 or 747. Students may not register for more than a total of 9 cr hrs under this series.

750.04 Social Welfare Policies and Programs: Mental Health
Utilizing a social policy analytic framework; introduces social welfare policy issues and program organization. Preq: 721 and 745 or 747. Students may not register for more than a total of 9 cr hrs under this series.

751.01 Social Work Practice: Child and Family Services
Develops advanced skills in dealing with problems of children and their families to assure protection and permanency through direct and indirect social work intervention. Preq: 745 or 746. Students may not register for more than a total of 9 cr hrs under this series.
751.02 Social Work Practice: Aging

Theoretical perspectives relevant to the aging process are examined; review of special concerns and treatment modalities unique to adults in middle and later years.

PreReq: 746 or 747. Students may not register for more than a total of 9 or hrs under this series.

751.03 Social Work Practice: Health

Knowledge and skills for specialized social work practice in health; clinical, planning, and administrative roles in several subspecialties are addressed.

PreReq: 746 or 747. Students may not register for more than a total of 9 or hrs under this series.

751.04 Social Work Practice: Mental Health

Provides knowledge and skills in clinical, and planning/administrative modes of practice in a range of mental health settings with selected target populations.

PreReq: 746 or 747. Students may not register for more than a total of 9 or hrs under this series.

752 Advanced Social Policy Practice

Aims to strengthen knowledge base and skill sets required of professionals to inform policy formulation, advocacy and policy research.

Wi, Sp Qtrs. PreReq: 721.

770 Research Methods in Social Work

Basic research methodology; the role of research in social work.

Su, Au Qtrs. 1 2-5 hr cl. PreReq: SocWork grad standing or permission of instructor.

771 Data Analysis Designs

Interpretation of social work data; quantitative techniques; designs of data analysis.

Su, Wi Qtrs. 1 2-5 hr cl. PreReq: SocWork grad standing or permission of instructor.

772 Evaluation of Social Work Practice

Utilization and application of methodological techniques and applications for evaluating practice design and program effectiveness.

Su, Sp Qtrs. 1 2-5 hr cl. PreReq: 770 and 771. Not open to students with credit for 875.01 or 875.03.

789.01 Field Practicum I: Columbus

Integration of field practice with social work practice theory.

PreReq: 744. Open only to SW majors. Proof of liability insurance. Placement in assigned human service organization 2 days wklly. Normally scheduled Wi and Sp Qtrs. Repeatable to a maximum of 8 hrs. This course is graded S/U. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

789.02 Field Practicum I: Lima

Integration of field practice with social work practice theory.

PreReq: 744. Open only to SW majors. Proof of liability insurance. Placement in assigned human service organization 2 days wklly. Normally scheduled Wi and Sp Qtrs. Repeatable to a maximum of 8 hrs. This course is graded S/U. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

789.03 Field Practicum I: Mansfield

Integration of field practice with social work practice theory.

PreReq: 744. Open only to SW majors. Proof of liability insurance. Placement in assigned human service organization 2 days wklly. Normally scheduled Wi and Sp Qtrs. Repeatable to a maximum of 8 hrs. This course is graded S/U. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

789.04 Field Practicum I: Newark

Integration of field practice with social work practice theory.

PreReq: 744. Open only to SW majors. Proof of liability insurance. Placement in assigned human service organization 2 days wklly. Normally scheduled Wi and Sp Qtrs. Repeatable to a maximum of 8 hrs. This course is graded S/U. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

789.05 Field Practicum I: Wright State

Integration of field practice with social work practice theory.

PreReq: 744. Open only to SW majors. Proof of liability insurance. Placement in assigned human service organization 2 days wklly. Normally scheduled Wi and Sp Qtrs. Repeatable to a maximum of 8 hrs. This course is graded S/U. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

789.06 Field Practicum I: Franklin County Children's Services

Integration of field practice with social work practice theory.

PreReq: 744. Open only to SW majors. Proof of liability insurance. Placement in assigned human service organization 2 days wklly. Normally scheduled Wi and Sp Qtrs. Repeatable to a maximum of 8 hrs. This course is graded S/U. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

790 Introduction to Gerontology

Introduction to impact of physiological, psychological, and socio-economic conditions associated with aging to provide foundation in gerontology.

Au Qtr. 1 3-hr cl. Open to sr level students with permission of instructor. Cross-listed in Allied Medicine. Core course required for Graduate Specialization in Aging.

793 Individual Studies

Directed readings and tutorials related to specific problems.

Su, Au, Wi, Sp Qtrs. PreReq: SocWork grad standing, permission of instructor. Repeatable to a maximum of 15 hrs. This course is graded S/U.

794 Group Studies

Group seminars in specialized areas of curriculum.

Su, Au, Wi, Sp Qtrs. SocWork grad standing, permission of instructor. Repeatable to a maximum of 15 hrs.

797 Interdepartmental Seminars: Research Issues in Gerontology

Explores the interface between research and practice issues in gerontology and geriatrics.

Sp Qtr. 1-3 hr cl. PreReq: Grad standing; one course in research design or statistics is recommended. Open to undergraduates only. Cross-listed with Anthrop 320.18. Fees listed at http://registrar.osu.edu.

889.01 Field Practicum II: Columbus

Designed to permit students to achieve greater autonomy and to maximize skill development in the integration of social work theory and practice.

PreReq: 789 or 747. Open only to SW majors. Proof of liability insurance. Placement 3 days wklly Au, Wi, Sp Qtrs in human service organization in accordance with student's primary mode of intervention. Repeatable to a maximum of 21 hrs. This course is graded S/U. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

889.02 Field Practicum II: Lima

Designed to permit students to achieve greater autonomy and to maximize skill development in the integration of social work theory and practice.

PreReq: 789 or 747. Open only to SW majors. Proof of liability insurance. Placement 3 days wklly Au, Wi, Sp Qtrs in human service organization in accordance with student's primary mode of intervention. Repeatable to a maximum of 21 hrs. This course is graded S/U. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

889.03 Field Practicum II: Mansfield

Designed to permit students to achieve greater autonomy and to maximize skill development in the integration of social work theory and practice.

PreReq: 789 or 747. Open only to SW majors. Proof of liability insurance. Placement 3 days wklly Au, Wi, Sp Qtrs in human service organization in accordance with student's primary mode of intervention. Repeatable to a maximum of 21 hrs. This course is graded S/U. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

889.04 Field Practicum II: Newark

Designed to permit students to achieve greater autonomy and to maximize skill development in the integration of social work theory and practice.

PreReq: 789 or 747. Open only to SW majors. Proof of liability insurance. Placement 3 days wklly Au, Wi, Sp Qtrs in human service organization in accordance with student's primary mode of intervention. Repeatable to a maximum of 21 hrs. This course is graded S/U. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

889.05 Field Practicum II: Wright State

Designed to permit students to achieve greater autonomy and to maximize skill development in the integration of social work theory and practice.

PreReq: 789 or 747. Open only to SW majors. Proof of liability insurance. Placement 3 days wklly Au, Wi, Sp Qtrs in human service organization in accordance with student's primary mode of intervention. Repeatable to a maximum of 21 hrs. This course is graded S/U. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

889.06 Field Practicum II: Franklin County Children's Services

Designed to permit students to achieve greater autonomy and to maximize skill development in the integration of social work theory and practice.

PreReq: 789 or 747. Open only to SW majors. Proof of liability insurance. Placement 3 days wklly Au, Wi, Sp Qtrs in human service organization in accordance with student's primary mode of intervention. Repeatable to a maximum of 21 hrs. This course is graded S/U. Requires materials and/or equipment for which an additional fee has been assessed. Course Fees listed at http://registrar.osu.edu.

894.01 Group Studies: Social Work Practice

PreReq: MSW or equiv with written permission of instructor. Not more than 10 hours shall be repeated in any of the decimal areas. Repeatable to a maximum of 20 hrs.

894.02 Group Studies: Social Welfare Policy

PreReq: MSW or equiv with written permission of instructor. Repeatable to a maximum of 20 hrs.

894.03 Group Studies: Dynamics of Social Functioning

PreReq: MSW or equiv with written permission of instructor. Repeatable to a maximum of 20 hrs.

894.04 Group Studies: Other

PreReq: MSW or equiv with written permission of instructor. Not more than 10 hours shall be repeated in any of the decimal areas. Repeatable to a maximum of 20 hrs.
### Social Work

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>993.01</td>
<td>Individual Studies: Social Work Research</td>
<td>1-5</td>
<td>Directed readings and tutorials related to specific problems and issues in following decimal areas. Prereq: MSW or permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>993.02</td>
<td>Individual Studies: Social Welfare Policy</td>
<td>1-5</td>
<td>Directed readings and tutorials related to specific problems and issues in following decimal areas. Prereq: MSW or permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>993.03</td>
<td>Individual Studies: Dynamics of Social Functioning</td>
<td>1-5</td>
<td>Directed readings and tutorials related to specific problems and issues in following decimal areas. Prereq: MSW or permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.</td>
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</table>

### Sociology

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>Introductory Sociology</td>
<td>5</td>
<td>Fundamental concepts of sociology and introduction to the analysis of social problems and social interactions, (e.g. wealth, gender, race inequality, family, crime) using sociological theories. 101H (honors) may be available.</td>
</tr>
<tr>
<td>202</td>
<td>Social Problems</td>
<td>UGRD 5</td>
<td>Analysis of contemporary social problems.</td>
</tr>
<tr>
<td>209</td>
<td>Introduction to Criminal Justice</td>
<td>UGRD 5</td>
<td>Examination of the development and administration of criminal law and agencies (police, prosecutors, courts); emphasis on criminal proceedings and their justification.</td>
</tr>
<tr>
<td>210</td>
<td>Sociological Aspects of Deviance</td>
<td>UGRD 5</td>
<td>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.</td>
</tr>
<tr>
<td>211</td>
<td>Corrections: An Inside-Out Course</td>
<td>UGRD 5</td>
<td>This inside-out course examines theory and policy, and is comprised of OSU students and prison inmates with class meetings held in a local state prison.</td>
</tr>
<tr>
<td>212</td>
<td>Sociology of Death and Dying</td>
<td>UGRD 5</td>
<td>Provides a sociological overview of death and dying, including the demographics of death, social epidemiology, social meanings of death and dying.</td>
</tr>
<tr>
<td>290</td>
<td>Group Studies</td>
<td>UGRD 3-5</td>
<td>Topics vary each quarter offered. Repeatable to a maximum of 10 cr hrs.</td>
</tr>
<tr>
<td>298.01</td>
<td>Study Tour: Domestic</td>
<td>UGRD 1-15</td>
<td>Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details. Prereq: Permission of instructor. Repeatable for different titled study tours only.</td>
</tr>
<tr>
<td>298.02</td>
<td>Study Tour: Foreign</td>
<td>UGRD 1-15</td>
<td>Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details. Prereq: Permission of instructor. Repeatable for different titled study tours only.</td>
</tr>
<tr>
<td>302</td>
<td>Technology and Global Society</td>
<td>UGRD 5</td>
<td>Social aspects of technology, social change, and technological development; underdevelopment and the global economy.</td>
</tr>
<tr>
<td>306</td>
<td>Sociology of Poverty</td>
<td>UGRD 5</td>
<td>A study of low-income peoples, especially concerning the effect of poverty on them, and their consequent social participation. GEC soci sci organizations and policies and social diversity in the US course.</td>
</tr>
<tr>
<td>309</td>
<td>Introduction to Law and Society</td>
<td>UGRD 5</td>
<td>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.</td>
</tr>
<tr>
<td>310</td>
<td>Sociology of Gangs</td>
<td>UGRD 5</td>
<td>Broad range of topics related to gang activity with a focus on why individuals join gangs, societal consequences of gangs, and social policy.</td>
</tr>
<tr>
<td>315</td>
<td>Sociology of Terrorism</td>
<td>UGRD 5</td>
<td>Provides a broad review of the definitions, histories, types, and theories of terrorism from a sociological perspective.</td>
</tr>
</tbody>
</table>
320 Sociology of Education UGRD 5
Current social trends as they affect education; backgrounds of school children, social status of teachers, role of power and bureaucracy. SS Admins Cond course.

330 Marriage and Society UGRD 5
The impact of modern society and social policies on marriage forms emphasizing mate selection, cohabitation, marriage alternatives and interactional patterns within the family.

340 Sex and Love in Modern Society UGRD 5
How behavior and meanings relating to sex and love have changed in recent decades, what explains these changes, and consequences of these changes.

345 Contemporary American Society UGRD 5
An exposition of the structural patterns of American society, using sociological theories and data but integrating them into a general view. 345H (honors) may be available. GEC soc sci organizations and polities course.

367.01H Politics and American Society UGRD 5
Sociological analysis of American politics and society, emphasizing political elites and interest groups, and the changing role of the state in the economy. Prereq: English 110 or 111 or equiv. GEC second writing and soc sci organizations and polities course.

367.02 Cities and Urban Life UGRD 5
The place of the city in social organization; the emergence, nature, and problems of modern urbanization; projects and case studies of urban and regional centers. Prereq: English 110 or 111 or equiv. GEC second writing and soc sci organizations and polities course.

367.03H Work and Family in the United States UGRD 5
Sociological examination of linkages between occupational and economic arrangements and marital and parental experiences in the United States. Prereq: English 110 or 111 or equiv. GEC second writing and soc sci organizations and polities course.

370 Social Factors in Personality UGRD 5
Analysis of relationships between social structure and personality; its consequences for social behavior; socialization: learning of motives and social roles; personality: development, organization, and disruption. GEC soc sci individuals and groups course.

380 Race in Society UGRD 5
Historical and contemporary study of race and ethnicity in the US with a focus on relations within and between groups. GEC soc sci individuals and groups course. SS Admins Cond course.

382 Sociology of Asian American Life UGRD 5
Introduction to Asian American life with attention to this group's social history, present status, and racial-ethnic relations. GEC social diversity in the US course.

389 Career Exploration in Sociology and Criminology UGRD 3
Designed for sociology and criminology majors to explore career paths of interest, facilitate vocational development and acquire career search skills. Credit does not apply to hours in the Sociology or Criminology majors. This course is graded S/U.

391 The Community UGRD 5
Development of the modern community, approaches to the study of communities; significance of processes and value systems for community organization and disorganization.

407 Social Change UGRD 5
Examines dynamic forces and key actors engaged in cultural, economic, and political change around the world in sociological perspective; processes of globalization, democratization, and development.

410 Criminology UGRD 5
The nature and causes of crime and delinquency, criminal liability, criminal careers, and organized racketeering. 410H (honors) may be available.

430 Sociology of the Family UGRD 5
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.

434 The Child and Society UGRD 5
A study of the ways in which society socializes children; current breakdown in the socialization processes and implications for the school and other educational agencies. 

435 Sociology of Gender UGRD 5
Analyzes multilevel processes that differentiate women and men in education, employment, and relationships. Examines variations in gendered experiences across racial-ethnic and social class groups. 

450 Illness and Social Behavior UGRD 5
Study of cultural, social, psychological, and sociological factors in disease processes, distribution of disease, definition of illness, organization of health professions and facilities.
Sociology

563 Global Inequality and Poverty  UGRD 5
Focus on globalization, world-wide inequalities, and poverty in sociological perspective with particular attention to the causes, correlates, and consequences of global poverty and inequality. Prereq: 5 or hrs in Sociology at the 200-400 level.

589.01 Fieldwork in Sociology  UGRD 5
Practicum in the collection of sociological data through field work; identification of research problem; development of data collection methods; data processing and analysis. Prereq: Permission of instructor.

589.02 Fieldwork in Sociology: Criminology and Criminal Justice  UGRD 5
Practicum in criminology and/or the criminal justice system. Prereq: Criminology and Criminal Justice Studies or Sociology major, or permission of instructor. This course is graded SU.

591 Building Community Capacity: A Service Learning Approach  UGRD 5
This service learning course will explore the basic concepts, methods, and approaches used when sociology is put into practice in urban, organizational settings. Wi Qtr: Prereq: 5 or hrs in Sociology at the 200-400 level, or grad standing. This is a service learning course that takes advantage of the urban location of OSU and the experience of Professor Price-Spratten to offer students a new opportunity.

597.01 Contemporary World Societies: Social Institutions and Social Change  UGRD 5
Sociological analysis of contemporary world societies-non-industrialized, industrializing, and industrialized-with special attention to major social institutions and patterns of social change. Prereq: Jr or sr standing. GEC contemporary world course.

597.02 World Population Problems  UGRD 5
General introduction to population studies, emphasizing how population growth and structure have caused or aggravated social problems in various countries. Prereq: Jr or sr standing; 5 or hrs of social science course work; GEC data analysis requirement. GEC contemporary world course.

599H Research Seminar  UGRD 5
Advanced research skills for honors sociology majors and honors criminology majors. * Sp Qtr. 2 2-hr cl. Prereq: 487, 488, and 549.

601 Comparative Family Organization  UGRD 5
Analysis of family organizations in various societies, emphasizing the impact of changing world conditions on family and kinship structures. Prereq: 5 credit hours in Sociology at the 200-400 level or grad standing.

605 Sociology of Sexuality  UGRD 5
A social and institutional approach to the study of sexuality with a focus on sexual identities, practices, institutions, communities, and sexuality movements. Prereq: Jr or sr standing or above.

606 Social Movements and Collective Behavior  UGRD 5
An examination of theories and research on non-traditional group efforts to change social systems and institutions; emphasis on contemporary societies and movements. Prereq: 5 credit hours in Sociology at the 200-400 level or grad standing.

608 Gender, Race, and Class in Mass Communications  UGRD 5
Sociological aspects of mass communications; emphasis on relationships among media, audience and social structure; examination of culture and depiction of race, class, and gender. Prereq: 5 credit hours in Sociology at the 200-400 level or grad standing. GEC social diversity in the US course.

609 Neighborhoods and Crime  UGRD 5
Exploitation of the social distribution of crime, with attention to the patterns and causes of neighborhood crime, and the impact of crime on fear of crime and on neighborhood decline. Prereq: 5 credit hours in Sociology at the 200-400 level or grad standing.

610 Sociology of Deviant Behavior  UGRD 5
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: 5 credit hours in Sociology at the 200-400 level or grad standing.

611 Penology  UGRD 5
The treatment of adult offenders in detention and incarcerations; short and long term institutions. Prereq: 5 credit hours in Sociology at the 200-400 level or grad standing.

615 Control and Prevention of Crime and Delinquency  UGRD 5
Analysis of the operational effectiveness of special measures and programs pointed toward the control and prevention of crime and delinquency. Prereq: 5 credit hours in Sociology at the 200-400 level or grad standing.

616 Challenges to Childhood: An International Perspective  GRAD 5
Course will explore children's forced participation in war and its consequences and child poverty, labor, health, abuse and victimization in international perspective. Cross-listed in International Studies.

618 Sociology of Police and Policing  UGRD 5
Sociological understanding of the origins of routine police conduct and misconduct; representative topics include police-citizen encounters and police abuse of discretion. Prereq: 5 credit hours in Sociology at the 200-400 level or grad standing.

623 Advanced Sociology of Education  UGRD 5
Comparisons of the structures and functions of educational systems, elementary through university; recruitment and allocation of personnel and resources, power, conflict, and boundary maintenance. Prereq: 5 credit hours in Sociology at the 200-400 level or grad standing.

629 Sociology of Health: Mental and Physical Dimensions  UGRD 5
Analysis of sociological and social psychological aspects of mental and physical disorders, and types of illness behavior associated with mental and physical illness. Prereq: 5 credit hours in Sociology at the 200-400 level or grad standing.

630 Medical Sociology  UGRD 5
Sociological analysis of the distribution of disease, and the nature of health care institutions, health professions and the delivery of health care services. Prereq: 5 credit hours in Sociology at the 200-400 level or grad standing.

635 Men in Society  UGRD 5
The social psychology of males, their relationships with females, other males, and society; emphasis on socialization, social roles, sexuality, etc. Prereq: 5 credit hours in Sociology at the 200-400 level or grad standing.

640 Sociology of Everyday Life  UGRD 5
A basic course in ethnomethodology; a survey of the basic literature; study of the taken-for-granted, verbal and non-verbal features of social interaction; involves making observations and descriptions. Prereq: 5 credit hours in Sociology at the 200-400 level or grad standing.

648 Introduction to Quantitative Research  UGRD 5
An introduction to statistical methods in sociological research. Au Qtr.

649 Principles of Multiple Regression  UGRD 5
Assumptions, principles, and applications of the multiple regression model in sociological practice; basic model, dummy variables, and special functional forms. Wi Qtr: Prereq: 549 or 650 or equiv.

651 Approaches to Sociological Inquiry  UGRD 5
Theory and practice in essentials of the research process; comparison of alternative approaches and design models; questionnaire construction, interview techniques, and related problems. Sp Qtr: Prereq: 649 or equiv, or permission of instructor.

652 Sociological Survey Research Methods I  UGRD 5
Design of sociological survey research: question format, questionnaire design, alternative modes of administration, etc; hands-on practice in Computer Assisted Telephone Interviewing (CATI). Prereq: 10 or hrs in Sociology or grad standing.

653 Sociological Survey Research Methods II  UGRD 5
Administration and analysis of sociological surveys; emphasis on development, administration, and analysis of survey data. Prereq: 652 or written permission of instructor.

655 Sociology of Sport  UGRD 5
Sport from a sociological perspective: relationship of sport to social institutions; socialization into sport; stratification within sports; sport and small group analysis. Prereq: 5 credit hours in Sociology at the 200-400 level or grad standing.

666 Political Sociology  UGRD 5
Examination of structures, continuities, and processes of change: of models and building blocks; and of social contexts of power and dynamic forces altering political systems. Prereq: 5 credit hours in Sociology at the 200-400 level or grad standing.

670 Topics in Sociology  UGRD 5
Examination of selected current topics of interest to sociologists; topics vary by section and instructor. 2 2-hr cl. Prereq: 5 credit hours in Sociology at the 200-400 level or grad standing. Repeatable to a maximum of 15 or hrs.

671 Population Studies I: Theory, Substance, and Techniques  UGRD 5
Survey of population studies covering sources of demographic data, mortality, and fertility. Prereq: 487 or grad standing.

672 Population Studies II: Theory, Substance, and Techniques  UGRD 5
Continuation of survey of population studies covering models of population growth, population theories, migration, population estimations and projections, population problems, and policy decisions. Prereq: 671 and Math 152 or equiv recommended.
Individual Studies.

Su, Au, Wi, Sp Qtrs. Prereq: 20 cr hrs in sociol, or grad standing and permission of instructor. Repeatable. This course is graded S/U.

Group Studies: Sociology of Education UGRD 3-5
Prereq: 5 credit hours in Sociology at the 200-400 level or grad standing. Repeatable to a maximum of 15 cr hrs. Topics vary each qtr offered. Repeatable to a maximum of 15 cr hrs.

Group Studies: Sociology of Labor UGRD 3-5
Prereq: 5 credit hours in Sociology at the 200-400 level or grad standing. Repeatable to a maximum of 15 cr hrs. Topics vary each qtr offered. Repeatable to a maximum of 15 cr hrs.

Group Studies: Family UGRD 3-5
Prereq: 5 credit hours in Sociology at the 200-400 level or grad standing. Repeatable to a maximum of 15 cr hrs. Topics vary each qtr offered. Repeatable to a maximum of 15 cr hrs.

Group Studies: Race/Ethnic/Minority Relations UGRD 3-5
Prereq: 5 credit hours in Sociology at the 200-400 level or grad standing. Repeatable to a maximum of 15 cr hrs. Topics vary each qtr offered. Repeatable to a maximum of 15 cr hrs.

Group Studies: Political Sociology UGRD 3-5
Prereq: 5 credit hours in Sociology at the 200-400 level or grad standing. Repeatable to a maximum of 15 cr hrs. Topics vary each qtr offered. Repeatable to a maximum of 15 cr hrs.

Group Studies: Population/Demography UGRD 3-5
Prereq: 5 credit hours in Sociology at the 200-400 level or grad standing. Repeatable to a maximum of 15 cr hrs. Topics vary each qtr offered. Repeatable to a maximum of 15 cr hrs.

Group Studies: Gender UGRD 3-5
Prereq: 5 credit hours in Sociology at the 200-400 level or grad standing. Repeatable to a maximum of 15 cr hrs. Topics vary each qtr offered. Repeatable to a maximum of 15 cr hrs.

Group Studies: Unclassified UGRD 3-5
Prereq: 5 credit hours in Sociology at the 200-400 level or grad standing. Repeatable to a maximum of 15 cr hrs. Topics vary each qtr offered.

Individual Studies.

Su, Au, Wi, Sp Qtrs. Prereq: 20 cr hrs in sociol, or grad standing and permission of instructor. Repeatable. This course is graded S/U.

Group Studies: Criminology and Criminal Justice UGRD 3-5
Prereq: 5 credit hours in Sociology at the 200-400 level or grad standing. Repeatable to a maximum of 15 cr hrs. Topics vary each qtr offered. Repeatable to a maximum of 15 cr hrs.

Group Studies: Social Psychology UGRD 3-5
Prereq: 5 credit hours in Sociology at the 200-400 level or grad standing. Repeatable to a maximum of 15 cr hrs. Topics vary each qtr offered. Repeatable to a maximum of 15 cr hrs.

Group Studies: The Family UGRD 3-5
Prereq: 5 credit hours in Sociology at the 200-400 level or grad standing. Repeatable to a maximum of 15 cr hrs. Topics vary each qtr offered. Repeatable to a maximum of 15 cr hrs.

Group Studies: Research Methodology UGRD 3-5
Prereq: 5 credit hours in Sociology at the 200-400 level or grad standing. Repeatable to a maximum of 15 cr hrs. Topics vary each qtr offered. Repeatable to a maximum of 15 cr hrs.

Group Studies: Urban/Community/Ecology UGRD 3-5
Prereq: 5 credit hours in Sociology at the 200-400 level or grad standing. Repeatable to a maximum of 15 cr hrs. Topics vary each qtr offered. Repeatable to a maximum of 15 cr hrs.

Group Studies: Labor Markets/Economy and Society UGRD 3-5
Prereq: 5 credit hours in Sociology at the 200-400 level or grad standing. Repeatable to a maximum of 15 cr hrs. Topics vary each qtr offered. Repeatable to a maximum of 15 cr hrs.
402 Sociology

723 The Sociology of Crime Control and Punishment GRAD 5
Theoretical survey of reactions to crime including arrest, charge, and sentencing.
Prereq: Grad standing.

735 Sociology of Gender GRAD 5
An examination of current theory and research on the sociology of gender through extensive readings.
Prereq: Grad standing or permission of instructor.

747 Theories of Social Change GRAD 5
Analysis of theoretical traditions in the study of social change, and methods of constructing synthetic theories of change.
Pre req: 682 or 762 or equiv.

748 Comparative Methods in Sociology GRAD 5
Basic review of methods of comparative analysis as used in the study of social change.
Pre req: 651.

752 Principles and Techniques of Scale Construction GRAD 5
Approaches and techniques in the development and testing of social measurement instruments
Pre req: 549 or equiv or SocWork 540.

754 Demographic Analysis GRAD 5
An exposition of census data and vital statistics, demographic rates, life tables, cohort analysis, and similar elementary techniques and data sources in demography.
5 cl. Pre req: 1 course in general statistics.

755 The Social Context of Human Fertility GRAD 5
A critical and methodological analysis of fertility, with special emphasis on the social context of reproductive behavior in American society.

756 Migration and Social Mobility GRAD 5
Theories and models of population mobility; determinants and consequences of the migration process; policy implications of rural-urban migration.

757 Seminar on the Life Course GRAD 5
Introduction to the life course as a theoretical orientation, methodology, and field of study within sociology.
Pre req: Grad standing or permission of instructor.

758 Population, Health, and Life Course GRAD 5
Social and demographic forces that affect well being, health, and survival.
2-2 1/2 hr cl. Pre req: Grad standing or permission of instructor.

760 Sociology of Conflict and Violence GRAD 5
Comparative analysis of the sources and impact of conflict and violence.
Pre req: 10 cr hrs in Sociology or grad standing.

761 Social Stratification GRAD 5
A survey of major theories, issues, and empirical literature on societal stratification and inequality with particular focus on the United States.

762 Comparative Social Inequality GRAD 5
Using historical and cross-cultural approaches, two aspects of social inequality are examined: class relations and the distribution of goods.

770 Individual in Society GRAD 5
Analysis and synthesis of the major theories and findings of social psychology.

771 Symbolic Interaction GRAD 5
Analysis of the relationship between the individual and the social structure; particular reference paid to the symbolic interaction orientation.

780 Racial and Ethnic Differentiation GRAD 5
An analysis of the origin, persistence, adaptation and change of systems and racial and ethnic differentiation.

782 Earlier Developments in Sociological Theory GRAD 5
Analysis of classical systems and their representatives, e.g., positivistic social evolutionism (Comte, Spencer, Durkheim), historical materialism (Marx-Engels), and humanistic idealistic reactions (Toonniess, Simmel, M. Weber).
Pre req: Grad standing.

783.01H Honors Research: Sociology UGRD 1-5
A conference-thesis course; subject matter will vary depending upon the student's topic.
Pre req: 4th yr standing with a grade of A in at least half of the Sociology courses 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. Repeatable to a maximum of 10 cr hrs, including cr hrs earned in 783H. At least 2 qtrs are required of candidates for the degree BS with distinction in Sociology. Failure to receive a mark of S in this course is a disqualification for special honors. This course is graded S/U.

783.02H Honors Research: Criminology and Criminal Justice UGRD 1-5
A conference-thesis course; subject matter will vary depending upon the student's topic.
Pre req: 4th yr standing with a grade of A in at least half of the Criminal and/or Sociol courses 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. Repeatable to a maximum of 10 cr hrs including cr hrs earned in 783H. At least 2 qtrs are required of candidates for the degree BS with distinction in Criminal. Failure to receive a mark of S in this course is a disqualification for special honors. This course is graded S/U.

790 Social Organization of the Community GRAD 5
An examination of the nature, structures, processes, and trends of social organization of modern communities.

791 Sociological Methods of Community Analysis UGRD 5
Methods, techniques, sources of data, and objectives of community analysis.

792 Structural Sociology GRAD 5
Key concepts, issues, recent trends in the study of social structure with special emphasis on formal social organizations, social stratification, comparative social systems, and research methods.
5 cl. Pre req: Grad standing in Sociology.

800 Proseminar in Sociology GRAD 2
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. Repeatable to a maximum of 6 cr hrs.
Pre req: Open only to 1st year grad students in Sociology. This course is graded S/U.

801 PhD Proseminar GRAD 2
Orientation for new PhD students in sociology.
Pre req: PhD standing in Sociology. This course is graded S/U.

802 Teaching Sociology GRAD 3
Designed to prepare sociology graduate students to teach independent sections of basic sociology classes.
1-3 hr cl. Pre req: Grad standing in Sociology or permission of instructor. This course is graded S/U.

806 Social Movements GRAD 5
Explores how and why social movements arise and their impact on society.
Pre req: Grad standing or permission of instructor.

820 Seminar in the Sociology of Education GRAD 5
Special problems will be considered in different quarters, including urban education, student movements, bureaucratic-professional problems, school-community relations, and innovation. Repeatable to a maximum of 10 cr hrs.

830 Seminar in Medical Sociology: Problems in the Sociology of Health Organization GRAD 5
Analysis of theory and research bearing upon the role of medicine in society and the health organizations on national, community, and institutional levels.

837 Seminar in Political Sociology GRAD 5
Selected topics in political sociology.
Pre req: Grad standing or permission of instructor.

841 Sociology of Urban Sub-Communities GRAD 5
Examination of sociology and culture of sub-communities such as ethnic and racial ghettos, suburbs; generalization about the patterns of integration with larger systems.

848 Seminar in the Sociology of Religion GRAD 5
An analysis of selected contemporary problems in the sociology of religion; religious organization and involvement.

850 Seminar in Sociological Research Methods GRAD 1-5
Special topic seminars in research methodology.
Repeatable to a maximum of 30 cr hrs.

851 Hierarchical Linear Models GRAD 5
Introduction to hierarchical linear and nonlinear models; review of three level, latent growth curve, cross-classified, and latent variable models for hierarchical data.
Pre req: Grad standing or permission of instructor.

852 Event History Analysis of Social Data GRAD 5
This course provides an introduction to event history analysis of social data.
Pre req: Grad standing or permission of instructor.

859 Practicum in Sociological Research GRAD 1-15
Supervised practical experience in the independent execution of sociological research, the application of appropriate analytical techniques, and preparation of research reports.
Pre req: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

862 Seminar in Complex Organizations GRAD 5
Analysis of bureaucratization, structure, boundary problems, resource allocation, organizational change and conflict.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>884.01</td>
<td>Seminar: Sociological Theory</td>
<td>1-5</td>
<td>Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>884.03</td>
<td>Seminar: Medical Sociology</td>
<td>1-5</td>
<td>Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>884.04</td>
<td>Seminar: Criminology and Criminal Justice</td>
<td>1-5</td>
<td>Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>884.06</td>
<td>Seminar: Race/Ethnic/Minority Relations</td>
<td>1-5</td>
<td>Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>884.08</td>
<td>Seminar: The Family</td>
<td>1-5</td>
<td>Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>884.09</td>
<td>Seminar: Research Methodology</td>
<td>1-5</td>
<td>Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>884.10</td>
<td>Seminar: Urban/Community</td>
<td>5</td>
<td>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 15 cr hrs.</td>
</tr>
<tr>
<td>884.11</td>
<td>Seminar: Labor Markets/Economy and Society</td>
<td>1-5</td>
<td>Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>884.12</td>
<td>Seminar: Political Sociology</td>
<td>1-5</td>
<td>Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>884.13</td>
<td>Seminar: Population/Demography</td>
<td>1-5</td>
<td>Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>884.14</td>
<td>Seminar: Gender</td>
<td>1-5</td>
<td>Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>884.15</td>
<td>Seminar: Unclassified</td>
<td>1-15</td>
<td>Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>884.99</td>
<td>Research for Sociology: Dissertation: Unclassified</td>
<td>1-18</td>
<td>Research for dissertation purposes only. This course is graded S/U.</td>
</tr>
</tbody>
</table>

### Somali

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>Elementary Somali I</td>
<td>5</td>
<td>Development of oral proficiency through basic listening, speaking and reading skills using a competency-based curriculum. Au Qtr: 5 hr-cl. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for long course. This course is available for EM credit.</td>
</tr>
<tr>
<td>102</td>
<td>Elementary Somali II</td>
<td>5</td>
<td>Continuation of 101; further work on developing oral proficiency through basic listening, speaking and reading skills using a competency-based curriculum. Wi Qtr: 5 hr-cl. Prereq: 101. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for long course. This course is available for EM credit.</td>
</tr>
<tr>
<td>103</td>
<td>Intermediate Somali I</td>
<td>5</td>
<td>Further development of listening, reading, speaking and writing skills; readings based on Somali culture and literature. Sp Qtr: 5 hr-cl. Prereq: 102. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for long course. This course is available for EM credit.</td>
</tr>
<tr>
<td>104</td>
<td>Intermediate Somali II</td>
<td>5</td>
<td>Balanced use of basic language skills; emphasis on speaking and aural comprehension; further exposure to Somali culture through community interaction and current readings. Sp Qtr: 5 hr-cl. Prereq: 103. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for long course. This course is available for EM credit.</td>
</tr>
</tbody>
</table>

### Spanish

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>Spanish for Communication</td>
<td>3</td>
<td>For students who wish to refresh or recover oral Spanish skills, or for highly-motivated students who have never studied Spanish and wish to develop basic survival Spanish skills. Su, Au, Wi, Sp Qtrs. 2-72-hr cl. Not open to Spanish majors and minors or students with credit for Spanish 101 or above, except for Spanish 150 and 151.</td>
</tr>
<tr>
<td>101.01</td>
<td>Elementary Spanish I</td>
<td>5</td>
<td>Introduction to Spanish; development of listening, reading, speaking, and writing skills. Students must register for and complete 5 cr hrs during the qtr. 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 dept. GEC for lang course. FL Admis Cond course. This course is available for EM credit.</td>
</tr>
<tr>
<td>102.01</td>
<td>Elementary Spanish I</td>
<td>5</td>
<td>Continued study of Spanish; development of listening, reading, speaking and writing skills. Prereq: 101.01. Students must register for and complete 5 cr hrs during the qtr. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. FL Admis Cond course. This course is available for EM credit.</td>
</tr>
<tr>
<td>102.66</td>
<td>Elementary Spanish II: Intensive Spanish for Review I</td>
<td>5</td>
<td>Continued study of Spanish; development of listening, reading, speaking, and writing skills; Intensive review of basic vocabulary, structures, and skills needed for entry into 103.01. Prereq: 2 or more years of high school Spanish and placement at 101 level. Not open to native speakers of this language through regular course enrollment or EM credit. Not open to native speakers of Spanish through regular course enrollment or EM credit, or to students with credit for 101.01 or 102.01. GEC for lang course. FL Admis Cond course.</td>
</tr>
<tr>
<td>103.01</td>
<td>Intermediate Spanish II</td>
<td>5</td>
<td>Continued study of Spanish; development of listening, reading, speaking, and writing skills; readings based on Spanish culture and literature. Prereq: 101.01 or 5 cr hrs of 101.51, or 3 or more yrs of high school Spanish and placement into 102 by placement exam. Not open to native speakers of this language through regular course enrollment or EM credit. Not open to native speakers of Spanish through regular course enrollment or EM credit, or to students with credit for 102.01, 102.66, or 103.01. GEC for lang course.</td>
</tr>
<tr>
<td>104.01</td>
<td>Intermediate Spanish II</td>
<td>5</td>
<td>Reading of Spanish short stories, plays, and media with attention to literary appreciation; development of basic language skills. Su, Au, Wi, Sp Qtrs. 5 cr-cl. Prereq: 103.01 or 103.66 or equiv. Not open to native speakers of this language through regular course enrollment or EM credit; or to students with credit for 104.01 or 104.66. GEC for lang course.</td>
</tr>
<tr>
<td>104H</td>
<td>Honors Intermediate Spanish II</td>
<td>5</td>
<td>Intensive, intermediate Spanish for potential Spanish majors, minors, and highly-motivated students in other areas of study; emphasis on development of proficiency in speaking and writing Spanish and knowledge of Hispanic cultures. Au, Sp Qtrs. 5 cr-cl. Prereq: 103.01 or 103.66 or equiv, and GPA 3.4 or higher. Not open to native speakers of this language through regular course enrollment or EM credit, except to students with credit for 104.01, 104.66, or 103.01. GEC for lang course.</td>
</tr>
<tr>
<td>111</td>
<td>Intensive Intermediate Spanish</td>
<td>10</td>
<td>An intensive course that combines the content of 103 and 104; continuing study of Spanish grammar vocabulary, listening, speaking, reading, and writing. Su, Au, Wi, Sp Qtrs. 5-2 hr-cl. Prereq: 102.01 or 102.66, or equiv with written permission of instructor. A &quot;C&quot; average in previous spanish course work strongly recommended. Not open to students with credit for 104 or 104.66 104.01 or 104.66. GEC for long course.</td>
</tr>
<tr>
<td>150</td>
<td>Culture and Literature of Spain</td>
<td>5</td>
<td>Introduction to the principal developments of the culture of Spain through literature, art, music, film, and folklore. 2-2 hr-cl, 1-1 hr rec. Taught in English. GEC arts and hums cultures and ideas and social diversity - international issues (Western) course.</td>
</tr>
<tr>
<td>151</td>
<td>Introduction to Latin American Culture and Literature</td>
<td>5</td>
<td>Introduction to the culture of Spanish America and Brazil through literature, art, music, film, and folklore. 2-2 hr-cl, 1-1 hr rec. Taught in English. GEC arts and hums cultures and ideas and social diversity - international issues (Global) course.</td>
</tr>
</tbody>
</table>
240.01 Comprehension: A Listening Course in Spanish  UGRD  4
Listening strategies and practice for development of literal, evaluative, and critical listening skills in Spanish; a variety of comprehension strategies and their application to authentic audio and video texts.
4 cr or 2 1.5-hr cl. Prereq: 104, 111, or equiv.
240.51 Comprehension: A Listening Course in Spanish: Individualized Track  UGRD  1-4
Listening strategies and practice for development of literal, evaluative, and critical listening skills in Spanish; various comprehension strategies and their application to authentic audio/video texts.
Prereq: 104, 111, or equiv. Recommended for students who did not pass the listening portion of the SLRPE.
242 Introduction to Latino/a Studies  UGRD  5
Introduction to Latino/a studies, history, politics, and cultural production of Latino/a communities in the U.S. and its borderlands.
Prereq: English 110 or equiv. GEC arts and hums cultures and ideas and social diversity in the US course. Not available to student with credit for ComSt 242. Cross-listed in ComSt.
250.01 Fact and Fiction: A Reading Course in Spanish  UGRD  4
Reading strategies and reading practice based on authentic Spanish texts, both journalistic and literary.
2 2-hr cl. Prereq: 104 or 111. Upon successful completion of the SLRPE, students may register for 400-level courses.
250.51 Reading Comprehension: Individualized Instruction  UGRD  1-4
Reading strategies and practice based on authentic Spanish texts, both journalistic and literary.
Prereq: 104 or equivalent. Upon successful completion of the SLRPE (80% on listening and 80% on reading) students may register for 400 level courses. C- required to continue to 400 level courses. Not open to native speakers of this language through regular course enrollment or EM credit. Repeatable to a maximum of 4 cr hrs.
293 Individual Studies  UGRD  1-15
Individual Study.
Su, Wi, Sp Qtrs. Prereq: Written permission of dept. Repeatable to a maximum of 99 cr hrs. This course is graded S/U.
294 Group Studies  UGRD  1-15
Group Studies.
Prereq: Written permission of dept. Repeatable to a maximum of 30 cr hrs.
320 Don Quixote in Translation  UGRD  5
Introductory critical reading of Don Quixote in English.
2 2-hr cl. Credit does not count toward a major or minor in Spanish. Taught in English. GEC arts and hums cultures and ideas and social diversity - International Issues (Western) course.
321 The Spanish Don Juan Theme in the Theatre  UGRD  5
Introduction to the Don Juan theme from its origins in Renaissance Spain, through different versions, to the 20th century.
2 2-hr cl. Credit does not count toward a major or minor in Spanish. Taught in English. GEC arts and hums lit and social diversity - International Issues (Western) course.
322 Spanish Society and the Arts  UGRD  5
Introduction to Spanish art and its relationship to society, from Goya to Toral: a visual approach to culture.
2 2-hr cl. Credit does not count toward a major or minor in Spanish. Taught in English. GEC arts and hums lit and social diversity - International Issues (Western) course.
330 Reinventing America  UGRD  5
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.
2 2-hr cl. Credit does not count toward a major in Spanish. Taught in English. GEC arts and hums VPA and social diversity - International Issues (Western) course.
331 Caribbean Cultures  UGRD  5
The analysis of Caribbean societies and cultures; analysis of texts to unravel the cultural processes of creolisation, negritude, cannibalisim.
2 2-hr cl. Credit does not count toward a major or minor in Spanish. Taught in English. GEC arts and hums cultures and ideas and social diversity - International Issues (Global) course.
332 Introduction to Andean and Amazonian Cultures  UGRD  5
Introduction to the historical formation of the contemporary societies of the Andean and Amazonian regions. Explores the ethnic, social, and cultural features of the region and maps out the historical, economic, and political processes that have shaped the geo-cultural formations.
Au Qtr: GEC arts and hums cultures and ideas and int issues (nor-western or global) course.
367 The U.S. Experience: Hispanics, Language, and Literacy  UGRD  5
A GEC second writing (social diversity) course focusing on generating ideas, drafting, revising writing projects set within context of literacy and related issues among U.S. Hispanics.
Prereq: 250; English 110, 110.01, 110.02 or 110.03. Taught in Spanish. GEC second writing and social diversity in the US course. Service learning course.
380 Introduction to Latin American Film  UGRD  5
Introduction to Latin American film traditions; analysis of genres, filmmakers, and alternate aesthetics; focus on relation of film to social, political, and economic processes.
3 2-hr cl. Prereq: English 110 or 2nd yr standing. Credit does not apply toward a major or minor in Spanish. Taught in English. GEC arts and hums VPA and social diversity - international issues (Global) course.
393 Topics in Foreign Study  UGRD  1-15
Credit from study abroad for courses not offered by department.
Arr. Used only to convert 697 credit to more appropriate content level. Repeatable to a maximum of 99 cr hrs. Not applicable to Spanish major or minor. Arranged only with permission of departmental study abroad adviser. Class may be taught in Spanish or English.
401 Advanced Grammar  UGRD  4
In-depth examination of difficult points of Spanish grammar; emphasis on comprehension of key grammatical concepts in the language. 401H (honors) may be available.
Su (1st term), Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 104H. 250. Not open to students with credit for Spanish 601. This course is available for EM credit.
403 Intermediate Spanish Composition  UGRD  4
Spanish prose forms and practice in writing descriptive, narrative, and expository compositions.
404 Spanish Pronunciation  UGRD  3
Practice with corrective exercises; some attention to problems of teaching pronunciation.
2 2-hr cl. Prereq: 104H or 250. Not open to students with credit for Spanish 694.
406 Intermediate Business Spanish  UGRD  5
An introduction to business Spanish with emphasis on business terminology, commercial transactions, and international procedures.
2 2-hr cl. Prereq: 403. Taught in Spanish.
430 Introduction to Spanish Linguistics  UGRD  5
Introduction to the analysis of Spanish from the perspective of modern linguistic theory.
2 2-hr cl. Prereq: 401 and 404.
450 Introduction to the Study of Literature and Culture in Spanish: Reading Texts  UGRD  4
Strategies for reading literary and cultural texts from Spanish and Spanish America. 450H (honors) may be available.
2 2-hr cl. Prereq: 401 and 403. 450H required of Spanish honors majors and minors.
506 Latin American Culture in a Business Context  UGRD  5
Examination of cultural differences and similarities between the U.S. and Latin America and repercussions of conducting business with competent understanding.
2 2-hr cl. Credit does not apply to a major or traditional minor in Spanish. May be applied to a Spanish Minor for Business. Taught in English.
510 Mexican Studies  UGRD  3
Interdisciplinary study of different issues and processes in Mexican culture, history, and society.
1 2-hr cl. Priorly given to students enrolled in the scholars program. Taught in English. Credit does not count toward the Spanish major or minor.
520 Latin American Literature (in Translation): Fictions and Realities  UGRD  5
Critical examination of modern Latin American literature (in English translation) paying close attention to its own literary and cultural traditions.
2 2-hr cl. Credit does not apply toward a major or minor in Spanish. GEC arts and hums lit and social diversity - international issues (Global) course.
530H Honors Introduction to Spanish Linguistics  UGRD  5
Introduces concepts and techniques for the analysis of sentence structure (syntax), sounds (phonology and phonetics) and word formation (morphology) in Spanish.
2 2-hr cl. Prereq: 401 and 404. Not open to students with credit for 430.
536 Language Change in Spanish  UGRD  5
Historical development of the Spanish language, including details of phonological, morphosyntactic, and semantic changes; external history; and changes currently in progress.
2 2-hr cl. Prereq: 430.
537 Spanish Psycholinguistics  UGRD  5
Overview of child language acquisition, second language acquisition and child and adult language disorders in Spanish-speaking populations.
2 2-hr cl. Prereq: 430.
538 Language Variation in Spanish  UGRD  5
Survey of linguistic variation across the Spanish-speaking world, including geographical and social factors.
2 2-hr cl. Prereq: 430.
551 Spanish Golden Age Literature  UGRD  5
Introductory critical study of major literary works from the 16th and 17th centuries in Spain.
2 2-hr Survey Prereq: 450. 551E may be available for honors embedded experience.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>552</td>
<td>Modern Spanish Literature</td>
<td>Introductory critical study of major literary works from the 19th and 20th centuries in Spain. 2 2-hr cl. Prereq: 450.</td>
</tr>
<tr>
<td>555</td>
<td>Indigenous and Colonial Literatures of Spanish America</td>
<td>Introductory critical study of issues and processes in the formation of indigenous and colonial expression through 19th century regional discourses. 2 2-hr cl. Prereq: 450. E555 may be available for honors embedded experience.</td>
</tr>
<tr>
<td>556</td>
<td>Modern Spanish American Literature</td>
<td>Introductory critical study of issues and processes in Spanish American writing from Modernism through the 20th century. 2 2-hr cl. Prereq: 450.</td>
</tr>
<tr>
<td>557</td>
<td>Survey of Latino/a Literature in the U.S.</td>
<td>Introductory critical study of authors, topics, and movements in Latino/a literature from the late 19th century to the present. 2 2-hr cl. Prereq: 450.</td>
</tr>
<tr>
<td>560</td>
<td>Introduction to Spanish American Culture</td>
<td>Major elements in the culture of the peoples of Spanish America. 560H (honors) may be available. 2 2-hr cl. Prereq: 450. 561H required of Spanish honors majors.</td>
</tr>
<tr>
<td>561</td>
<td>Introduction to the Culture of Spain</td>
<td>Major developments in the culture of Spain. 561H (honors) may be available. 2 2-hr cl. Prereq: 450. 561H required of Spanish honors majors.</td>
</tr>
<tr>
<td>564</td>
<td>Spanish Culture During Franciscoism</td>
<td>Spanish culture during Franco's dictatorship through film and literature as representations of the historical, social, political and economic experiences Spain lived through those years. Prereq: Successful completion of Spanish 450 or H450 with a C- or better.</td>
</tr>
<tr>
<td>565H</td>
<td>Latin American Indigenous Literatures and Cultures</td>
<td>Introduction to continuities and transformations that link Latin American indigenous texts with contemporary cultural expression. 2 2-hr cl. Prereq: 450H. Limited to Spanish and honors majors with 3.3 gpa and above.</td>
</tr>
<tr>
<td>567</td>
<td>Spanish Mosaic: Catalonia, Basque Country, Galicia and Andalusia</td>
<td>Explores the fragmentation and renegotiation of Spanish cultural and political identity in tension with its peripheral &quot;nations&quot;: Catalonia, Basque Country, Galicia, Andalusia. 2 2-hr cl. Prereq: 450 or 450H. Taught in Spanish.</td>
</tr>
<tr>
<td>567H</td>
<td>Spanish Mosaic: Catalonia, Basque Country, Galicia and Andalusia</td>
<td>Explores the fragmentation and renegotiation of Spanish cultural and political identity in tension with its peripheral &quot;nations&quot;: Catalonia, Basque Country, Galicia, Andalusia. 2 2-hr cl. Prereq: Completion of Spanish 450 or 450H with a C- or better. Taught in Spanish.</td>
</tr>
<tr>
<td>568</td>
<td>Latin American Film</td>
<td>Study of Latin American film; special attention is paid to the relationship between film and the society in which it is produced. 3 2-hr cl. Prereq: 450.</td>
</tr>
<tr>
<td>569</td>
<td>Spanish Film</td>
<td>Study of Spanish film; special attention is paid to the relationship between film and the society in which it is produced. 2 2-hr cl. Prereq: 450.</td>
</tr>
<tr>
<td>570</td>
<td>Latino Ohio: A Culture Course in English for Educators and Other Professionals</td>
<td>A close-up look at Ohio culture with attention to educational, linguistic, and professional issues especially important to those working with Spanish-speaking populations. 3 2-hr cl. Prereq: 450/450H. Open only to Spanish and Honors majors with 3.4 GPA and above. Cross-listed with History 589.02 (specific topics only). Taught in English.</td>
</tr>
<tr>
<td>570H</td>
<td>Interdisciplinary Protocols: Identity and National Formation in Latin America: Perspectives from Latinos</td>
<td>Examines the intersections between history and literature, and exposes students to core discussions in contemporary historical and cultural scholarship. Prereq: 450/450H. Open only to Spanish and Honors majors with 3.4 GPA and above. Cross-listed with History 589.02 (specific topics only). Taught in English.</td>
</tr>
<tr>
<td>580</td>
<td>Latin American Film</td>
<td>Study of Latin American film; special attention is paid to the relationship between film and the society in which it is produced. 3 2-hr cl. Prereq: 450.</td>
</tr>
<tr>
<td>580H</td>
<td>Honors Seminar in Latin American Film</td>
<td>Study of Latin American film; special attention is paid to the relationship between film and the society in which it is produced. 3 2-hr cl. Prereq: 450/450H. Open only to Spanish and Honors majors with 3.4 GPA and above. Cross-listed with History 589.02 (specific topics only). Taught in English.</td>
</tr>
<tr>
<td>580H</td>
<td>Honors Seminar in Latin American Film</td>
<td>Study of Latin American film; special attention is paid to the relationship between film and the society in which it is produced. 3 2-hr cl. Prereq: 450/450H. Open only to Spanish and Honors majors with 3.4 GPA and above. Cross-listed with History 589.02 (specific topics only). Taught in English.</td>
</tr>
<tr>
<td>590H</td>
<td>Interdisciplinary Protocols: Identity and National Formation in Latin America: Perspectives from Latin America</td>
<td>Examines the intersections between history and literature, and exposes students to core discussions in contemporary historical and cultural scholarship. Prereq: 450/450H. Open only to Spanish and Honors majors with 3.4 GPA and above. Cross-listed with History 589.02 (specific topics only). Taught in English.</td>
</tr>
<tr>
<td>593</td>
<td>Special Topics in Foreign Study</td>
<td>Credit from study abroad for courses not offered by department but eligible for Spanish major core. Arr. Used only to convert 697 credit to more appropriate content level. Repeatable to a maximum of 99 or hrs. Arranged only with permission of departmental study abroad advisor.</td>
</tr>
<tr>
<td>600H</td>
<td>Modern Spanish Syntax</td>
<td>Study of modern Spanish grammar, modern tendencies in syntactic analysis. 2 2-hr cl. Prereq: 430.</td>
</tr>
<tr>
<td>603</td>
<td>Advanced Spanish Composition</td>
<td>Analysis of different prose styles and practice in writing fluent Spanish compositions. 2 2-hr cl. Prereq: 450.</td>
</tr>
<tr>
<td>604</td>
<td>Spanish Phonetics</td>
<td>Analysis of the phonological structure of Spanish and a comparison with English; practical problems of teaching pronunciation. 2 2-hr cl. Prereq: 430. E604 may be available for honors embedded experience.</td>
</tr>
<tr>
<td>604H</td>
<td>Spanish Phonetics</td>
<td>Analysis of the phonological structure of Spanish and a comparison with English; practical problems of teaching pronunciation. Prereq: 430 or 530H.</td>
</tr>
<tr>
<td>606</td>
<td>Advanced Business Spanish</td>
<td>An in-depth study of the Hispanic economic, social, and cultural environment as it relates to business. 2 2-hr cl. Prereq: 403 or permission of instructor.</td>
</tr>
<tr>
<td>610</td>
<td>Contrastive Structures of Spanish and English</td>
<td>Phonetics, phonemics, morphology, and syntax of Spanish contrasted with English. 2 2-hr cl. Prereq: 430.</td>
</tr>
<tr>
<td>613</td>
<td>Advanced Spanish Composition for Native Speakers</td>
<td>Development of the ability to organize and express ideas in written Spanish; cultural component 2 2-hr cl. Prereq: Several courses in Spanish grammar in the U.S. or in a Spanish-speaking country. Not open to students studying Spanish as a second &quot;foreign&quot; language. Designed for students of Hispanic culture or heritage who have no serious problems with spoken Spanish but who need further practice writing.</td>
</tr>
<tr>
<td>630</td>
<td>Senior Seminar in Spanish Linguistics</td>
<td>Intensive study of a major topic in Spanish linguistics; topic varies, for example: the Spanish pronoun system, Spanish American dialectology, Spanish orthography. 2 2-hr cl. Prereq: Any two of 536, 538, 601, 604, 610. Repeatable to a maximum of 15 cr hrs.</td>
</tr>
<tr>
<td>650</td>
<td>Senior Seminar in Spanish Peninsular Literatures and Cultures</td>
<td>Intensive study of a major theme, author, literary or cultural problem related to Spain. 2 2-hr cl. Prereq: 561 plus one of 551, 552, 567, 581. Repeatable to a maximum of 15 cr hrs. Required for Spanish majors in the Peninsular track.</td>
</tr>
<tr>
<td>660</td>
<td>Senior Seminar in Latin American Literatures and Cultures</td>
<td>Intensive study of a major theme, author, literary or cultural problem related to Latin America. 2 2-hr cl. Prereq: 560 plus one of 555, 556, 557, 569H, 580, 590H. 640. Repeatable to a maximum of 15 cr hrs. Required for Spanish majors in the Latin American track.</td>
</tr>
<tr>
<td>680</td>
<td>Group Studies</td>
<td>Group Studies. Prereq: Permission of instructor. Repeatable to a maximum of 99 or hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>689</td>
<td>Spanish in Ohio: An Experiential Course for Selected Majors</td>
<td>Interaction with Hispanic communities in Ohio; intensive and extensive practice with Spanish as spoken by native speakers from the U.S. and abroad. This course requires 100 field contact hours outside class. Prereq: 560 or 561 and permission of instructor. Not open to native Spanish speakers unless their secondary education was completed in the United States. Students will pay travel costs, if required.</td>
</tr>
<tr>
<td>697</td>
<td>Group Studies</td>
<td>Group Studies. Prereq: Permission of instructor. Repeatable to a maximum of 30 or hrs.</td>
</tr>
<tr>
<td>702</td>
<td>Introduction to Literary Analysis</td>
<td>Literary criticism and methods of discourse analysis; emphasis on application of critical concepts. 2 2-hr cl. Prereq: Grad standing or permission of instructor. Intended for beginning grad students; may be taken by advanced undergraduates, with permission of instructor.</td>
</tr>
</tbody>
</table>
705 Introduction to Latino Studies: Methods and Approaches
Introduction to the interdisciplinary field of Latino Studies.
Prereq: Not available to students with credit for CompStd 705. Cross-listed in CompStd.

732 Spanish Syntax and Semantics
Prereq: Grad standing or permission of instructor.
Introduction to structural and semantic characteristics of Spanish in the light of recent theoretical frameworks in linguistics.

734 Spanish Phonology and Morphology
Prereq: Grad standing or permission of instructor.
Introduction to phonological and morphological characteristics of Spanish in the light of recent theoretical frameworks in linguistics.

736 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.

738 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.

739 Introduction to Medieval Spanish
Prereq: Grad standing or permission of instructor.
Introduction to Medieval Spanish sounds, forms, constructions, and vocabulary, based on reading and linguistic comment of representative texts.
Prereq: Grad standing or permission of instructor.

751 Studies in Medieval Spanish Literature
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 20 cr hrs.
In-depth study of a major topic or problem in Medieval Spanish literature.

752 Studies in Spanish Golden Age Literature
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 20 cr hrs.
In-depth study of a major topic or problem in Spanish Golden Age literature.

753 Studies in Spanish Literature of the 18th and 19th Centuries
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 20 cr hrs.
In-depth study of a major topic or problem in 18th or 19th century Spanish literature.

754 Studies in 20th Century Spanish Literature
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 20 cr hrs.
In-depth study of a major topic or problem in 20th century Spanish literature.

755 Studies in Indigenous and Colonial Spanish American Literature
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 20 cr hrs.
In-depth study of a major topic or problem in indigenous and colonial Spanish American literature.

756 Studies in Independence and 19th Century Spanish American Literature
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 20 cr hrs.
In-depth study of a major topic or problem in Spanish American literature of the independence period and the 19th century.

757 Studies in Modern Spanish American Literature
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 20 cr hrs.
In-depth study of a major topic or problem in Spanish American literature of the modern period from approximately 1880 to 1950.

758 Studies in Contemporary Spanish American Literature
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 20 cr hrs.
In-depth study of a major topic or problem in contemporary Spanish American literature.

759 Comparative Topics in Iberian and Latin American Literature
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 20 cr hrs.
In-depth study of a major topic comparing Spanish, Spanish American and/or Luso-Brazilian literature.

760 Topics in Spanish American Culture and Civilization
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.
Analysis of Spanish American culture through the study of selected topics in literature, film, and the arts; topics vary.

761 Topics in Spanish Culture and Civilization
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.
Analysis of Spanish culture through the study of selected topics in literature, film, and the arts; topics vary.

780 Latin American Film
Prereq: Grad standing or permission of instructor.
Overview of Latin American film focusing on historical periods, dominant genres, distinguished directors, and relation of film to larger social, cultural and political dynamics.

783H Honors Research
This course offers undergraduates with special aptitudes a greater opportunity to do independent study than is possible in ordinary courses.
Prereq: 4th yr standing with a record of A in at least half of the Spanish courses 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. Repeatable to a maximum of 90 credit hours. This course is graded S/U.

790 Foundations of Contemporary Critical Theory
Prereq: Grad standing or permission of instructor.
Interdisciplinary survey of the theoretical bases of the major contemporary approaches to the study of literature; readings in Marx, Freud, Derrida, Cixous, and others.
Prereq: Grad standing or permission of instructor.

792 Interdepartmental Studies in the Humanities
Prereq: Two or more departments present colloquia on subjects of mutual interest; topics to be announced.
Prereq: Grad standing or permission of instructor(s). Repeatable to a maximum of 15 cr hrs.

801 Teaching Spanish at the College Level
Methods and techniques for teaching Spanish language at the college level.
Prereq: Three-week intensive workshop previously to beginning of qtr followed by a 2-hr seminar every second week during qtr. Repeatable to a maximum of 30 cr hrs.

830 Hispanic Linguistics Colloquium
Forum for presentation of research in Hispanic linguistics; introduction to professional issues in workshop format.
Prereq: Grad standing or permission of instructor.
Introduction to research methods and design in Hispanics literatures and cultures.
Prereq: Grad standing or permission of instructor.

832 Studies in Synchronic Spanish Syntax, Semantics, and Pragmatics
Prereq: Grad standing or permission of instructor.
Investigation of theoretical concepts in syntax, semantics, and pragmatics and how they have been applied to the analysis of the Spanish language.

833 Studies in Spanish Synchronic Linguistics
Prereq: Grad standing or permission of instructor.
Investigation of selected topics in synchronic Spanish Linguistics (formal problems in Spanish phonology, morphology, syntax, semantics, and lexicology).

834 Studies in Synchronic Spanish Phonetics, Phonology, and Morphology
Investigation of theoretical concepts in phonetics, phonology, and morphology and how they have been applied to the analysis of the Spanish language.

835 Studies in Spanish Historical Linguistics
Prereq: Grad standing or permission of instructor.
Study of selected problems of Old Spanish linguistic description and diachronic evolution of Spanish.

837 Studies in Spanish Psychology
Prereq: Grad standing or permission of instructor.
Studies in child language acquisition, second language acquisition and child and adult language disorders in Spanish-speaking populations.

838 Studies in Spanish Sociolinguistics
Prereq: Grad standing or permission of instructor.
Study of selected topics in Spanish sociolinguistics, for example: syntactic variation, discourse analysis, pragmatics.

839 Seminar in Spanish Linguistics
Collaborative investigation of specific problems in Spanish linguistics (synchronic and historical, formal, and applied topics).
Prereq: Grad standing or permission of instructor.

840 Hispanic Literatures and Cultures Colloquium
Forum for presentation of research in Hispanic literatures and cultures; introduction to professional issues in workshop format.
Prereq: Grad standing or permission of instructor.

851 Seminar in Medieval Spanish Literature
Detailed exploration of advanced issues in Medieval Spanish literature.
Prereq: Grad standing or permission of instructor.

Speech and Hearing Science

852 Seminar in Spanish Golden Age Literature GRAD 5
Detailed exploration of advanced issues in Spanish Golden Age literature.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 30 cr hrs.

853 Seminar in Spanish Literature of the 18th and 19th Centuries GRAD 5
Detailed exploration of advanced issues in Spanish literature of the 18th and 19th centuries.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 30 cr hrs.

854 Seminar in 20th Century Spanish Literature GRAD 5
Detailed exploration of advanced issues in 20th century Spanish literature.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 30 cr hrs.

855 Seminar in Indigenous and Colonial Spanish American Literature GRAD 5
Detailed exploration of advanced issues in indigenous and colonial Spanish American literature.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 30 cr hrs.

856 Seminar in Independence and 19th Century Spanish American Literature GRAD 5
Detailed exploration of advanced issues in Spanish American literature of the independence period and the 19th century.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 30 cr hrs.

857 Seminar in Modern Spanish American Literature GRAD 5
Detailed exploration of advanced issues in Spanish American literature of the modern period from approximately 1880 to 1950.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 30 cr hrs.

858 Seminar in Contemporary Spanish American Literature GRAD 5
Detailed exploration of advanced issues in contemporary Spanish American literature.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 30 cr hrs.

859 Seminar in Comparative Iberian and Latin American Literature GRAD 5
Detailed exploration of advanced issues comparing Spanish, Spanish American and/or Luso-Brazilian literatures.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 30 cr hrs.

860 Seminar in Latin American Cultures GRAD 5
Intensive exploration of a cultural period, topic, or problem; topic varies.
Prereq: 790 and grad standing or permission of instructor. Repeatable to a maximum of 20 cr hrs.

865 Seminar in Spanish Culture GRAD 5
Intensive exploration of a cultural period, topic or problem; topic varies.
Prereq: 761 and grad standing or permission of instructor. Repeatable to a maximum of 20 cr hrs.

866 Seminar in Spanish Literature GRAD 5
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

881 Literary Theory since Formalism GRAD 5
Panoramic view of twentieth-century literary theory since formalism, with emphasis on structuralism and post-structuralism; special attention to issues relevant to Hispanic literatures.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

882 Seminar in Literary Theory GRAD 5
Intensive study of special topics in literary theory with attention to their relationship to Hispanic literature; possible topics: reception theory; deconstruction; sociology of literature.
Prereq: Grad standing and one graduate level course in literary theory or permission of instructor. Repeatable to a maximum of 20 cr hrs.

893 Individual Studies GRAD 1-15
Individual Studies.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 99 cr hrs. This course is graded S/U.

894 Group Studies GRAD 1-15
Investigation of minor problems in the various fields of Spanish literature and language.
Prereq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.

899 Interdepartmental Seminar GRAD 3-5
Two or more departments present seminars on subjects of mutual interest; topics to be announced.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

999 Research in Spanish Language or Literature GRAD 1-18
Research for thesis purposes only.
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 99 cr hrs. This course is graded S/U.
605 Multicultural Aspects of Communication and its Disorders
Examination of normal communicative behavior, including development, and the assessment and management of speech-language-hearing disorders of culturally and linguistically diverse populations.
Prereq: Grad standing or one of the following: 230 or 330 or 430, or Linguist 201, 202, 261, or 265; or equiv.

643.01 Professional Issues in Audiology: Scope of Practice and Professional Organizations
Professional issues and "hot topics" in audiology are discussed, including future career opportunities. Students also observe in local audiology clinics.
Consideration is given to the audiology scope of practice, health privacy issues and the role of professional organizations.
Au Qtr. Prereq: Requires acceptance in AuD program. First year AuD students only. This course is graded S/U.

643.02 Professional Issues in Audiology: Ethical Practice and Licensure
Professional issues and "hot topics" in audiology are discussed, including future career opportunities. Students also observe in local audiology clinics.
Discussion centers on ethical practices and licensure issues in audiology.
Wi Qtr. Prereq: Requires acceptance in AuD program. First year AuD students only. This course is graded S/U.

643.03 Professional Issues in Audiology: Certification and Legislative Involvement
Professional issues and "hot topics" in audiology are discussed, including future career opportunities. Students also observe in local audiology clinics.
Issues related to counseling, voluntary credentials and professional advocacy are considered.
Sp Qtr. Prereq: Requires acceptance in AuD program. First year AuD students only. This course is graded S/U.

670 Speech, Hearing, and Language Problems in the School
First course in the certification curriculum for school speech pathology; emphasis on program administration, interdisciplinary evaluation, and intervention.
Prereq: Sr or grad standing in Sp/BrHrng.

692 Workshops
UGRD 1-8
Intensive study of a clinical area newly expanded within the field; geared for practicing clinicians to update information and increase skill levels.
Prereq: Written permission of workshop director. Repeatable to a maximum of 12 cr hrs.

693 Individual Studies
GRAD 1-5
Conference, library, and laboratory work.
Repeatable to a maximum of 15 or cr hrs. This course is graded S/U.

698.01 Study Tour: Domestic
UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
* Prereq: Permission of instructor. Repeatable for different titled study tours only.

698.02 Study Tour: Foreign
UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
* Prereq: Permission of instructor. Repeatable for different titled study tours only.

705 Audiologic Assessment I
GRAD 5
Detailed treatment of the theoretical and practical aspects of standard audiologic assessment.
2.2 hr cl, 1 hr lab. Prereq: 540.

706 Audiologic Assessment II
GRAD 5
Detailed treatment of the theoretical and practical aspects of the physiologic evaluation of the auditory system using immittance and ototacoustic emissions.
2.2 hr cl, 1 hr lab. Prereq: 705 or equiv.

707 Audiologic Assessment III
GRAD 5
Detailed treatment of the theoretical and practical aspects of electrophysiologic measures, including electrocochleography, auditory brainstem responses, middle latency responses, and cognitive potentials.
2.2 hr cl, 1 hr lab. Prereq: 706.

710 Phonological Processes and Disorders
GRAD 5
Approaches to understanding the nature and clinical management of phonological disability in children and youth.
Prereq: 430 and 520, or equivs, grad standing in speech and hearing science, or permission of instructor.

714 Introduction to Sign Language Systems
UGRD 5
Introductory course in manual sign language systems.

716 Intermediate Sign Language Systems
UGRD 5
Continuation course in manual sign language with an emphasis on increasing vocabulary and fluency.
Prereq: 714. Repeatable.

717.01 Family Systems: An Interdisciplinary Approach to Families of Handicapped Children
Focus on interdisciplinary topics in mental retardation and developmental disabilities.
Qualitative and quantitative approaches for resource and problem identification with families of handicapped children, effective parenting skills, strategies to follow at-risk families, and family intervention models.
Prereq: Permission of instructor. Not open to students with credit for 717.01 in any of the cross-listed areas. Cross-listed in Allied Medicine, Education: Physical Activity and Educational Services, Human Development and Family Science, Human Nutrition, Nursing, Psychology, and Social Work.

717.02 Interdisciplinary Perspectives on Autism Spectrum Disorders
Focus on interdisciplinary topics in mental retardation and developmental disabilities.
Critical examination of the latest information on biomedical, psycho-social, educational, communication and language, family and sensory issues of autism spectrum disorders.
1.3 hr cl. Prereq: Permission of instructor. Not open to students with credit for 717.02 in any of the cross-listed areas. Cross-listed in Allied Medicine, Education: Physical Activity and Educational Services, Human Development and Family Science, Human Nutrition, Nursing, Psychology, and Social Work.

717.03 Developmental Disabilities
UGRD 3
Focus on interdisciplinary topics in mental retardation and developmental disabilities.
Focus on the most pertinent scientific and societal issues of developmental disabilities.
1.3 hr cl. Prereq: Permission of instructor. Not open to students with credit for 717.03 in any of the cross-listed areas. Cross-listed in Allied Medicine, Education: Physical Activity and Educational Services, Human Development and Family Science, Human Nutrition, Nursing, Psychology, and Social Work.

718 Advanced Sign Language Systems
UGRD 5
Advanced course in manual sign language with an emphasis on achieving fluency in conversation.
2 hr cl, 1 hr lab. Prereq: 714 and 716. Repeatable to a maximum of 10 cr hrs.

719 Early Intervention Interdisciplinary Team Dynamics
GRAD 3
Interdisciplinary team-taught course with a focus on early intervention/early childhood education services for children, birth to three, and their families.

725 Language Acquisition
GRAD 5
Development of language in children with an emphasis on the interaction between the development of language and cognition.
Prereq: Grad standing or permission of instructor.

726 Child Language Disorders: Assessment
GRAD 5
Assessment of language disorders in preschool and elementary school-aged children; both norm-referenced and criterion-referenced.
Prereq: 725 and grad standing or permission of instructor.

727 Child Language Disorders: Remediation
GRAD 5
Remediation of language disorders in preschool and elementary school-aged children; the relationship of language skills to reading disabilities is also covered.
Prereq: 726 and grad standing or permission of instructor.

732 Audiologic Rehabilitation in Children
GRAD 3
The impact of hearing loss on a child's speech and language development is considered. Educational models and treatment options for children with hearing loss are discussed.
Su Qtr. 2.2 hr cl.

733 Audiologic Rehabilitation in Adults
GRAD 5
The impact of hearing loss on social, vocational and psychological well-being is considered. Treatment options and measures of treatment outcome are evaluated.
Wi Qtr. 2.2 hr cl.

734 Introduction to Aural Rehabilitation I
UGRD 5
Assessment and management of communication disorders associated with hearing loss.
Prereq: 540 or permission of instructor.

735 Hearing Aids I
GRAD 5
The physical and psychoacoustic characteristics of hearing aids, including psychoacoustic analysis, acoustics of amplification systems, signal processing strategies, and devices used in specialized fittings.
2.2 hr cl, 1 hr lab. Prereq: 705, 766.

737 Neurocognitive Science
GRAD 2
An in-depth examination of the interdisciplinary field of cognitive science; emphasizes fundamental issues of each discipline, provides illustrations of representative research being conducted at OSU.
Prereq: CptrInf 612, Linguist 612; Psych 612; or Phlso 612; or permission of instructor. Repeatable to a maximum of 4 cr hrs. Cross-listed in Computer and Information Science, Industrial and Systems Engineering, Linguistics, Philosophy, and Psychology.

740 Fluency: Theory and Treatment
GRAD 5
Theories, principles, and procedures for the appraisal and treatment of persons with dysfluencies in speech.
Prereq: Grad standing in speech and hearing science or permission of instructor.
Speech and Hearing Science

741 Voice Disorders  GRAD 5
The role of the speech-language pathologist in the evaluation and interdisciplinary management of voice disorders and related pathologies.
Prereq: Grad standing in speech and hearing science or permission of instructor.

742 Low Incidence Voice and Resonance Disorders  GRAD 5
Etiology, evaluation, and treatment of low incidence speech and voice disorders of the head and neck.
Prereq: 765 or equiv, and grad standing in speech and hearing science or permission of instructor.

743.00 Clinical Seminar in Hearing Disorders: Contemporary Issues  GRAD 1
Readings and discussion of topics pertinent to the assessment and treatment of hearing disorders.
Prereq: Grad standing in speech and hearing science or permission of instructor. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

743.01 Clinical Seminar in Hearing Disorders: Screening in Speech-Language-Hearing  GRAD 1
Readings and discussion of topics pertinent to the assessment and treatment of hearing disorders.
Prereq: Grad standing in speech and hearing science or permission of instructor. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

743.02 Clinical Seminar in Hearing Disorders: Counseling and Report Writing  GRAD 1
Readings and discussion of topics pertinent to the assessment and treatment of hearing disorders. Each subdivision repeatable to maximum of 3 credit hours.
Prereq: Grad Standing in speech and hearing science or permission of instructor. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

743.03 Clinical Seminar in Hearing Disorders: Hearing Aid Applications  GRAD 1
Readings and discussion of topics pertinent to the assessment and treatment of hearing disorders.
Prereq: Grad Standing in speech and hearing science or permission of instructor. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

743.04 Clinical Seminar in Hearing Disorders: Ethics  GRAD 1
Readings and discussion of topics pertinent to the assessment and treatment of hearing disorders. Each subdivision repeatable to maximum of 3 credit hours.
Prereq: Grad Standing in speech and hearing science or permission of instructor. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

743.05 Clinical Seminar in Hearing Disorders: Evidence-Based Practice  GRAD 1
Readings and discussion of topics pertinent to the assessment and treatment of hearing disorders.
Prereq: Grad Standing in speech and hearing science or permission of instructor. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

743.06 Clinical Seminar in Hearing Disorders: Resumes and Interviewing  GRAD 1
Readings and discussion of topics pertinent to the assessment and treatment of hearing disorders. Each subdivision repeatable to maximum of 3 credit hours.
Prereq: Grad Standing in speech and hearing science or permission of instructor. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

743.07 Clinical Seminar in Hearing Disorders: Clinical Grand Rounds  GRAD 1
Readings and discussion of topics pertinent to the assessment and treatment of hearing disorders.
Prereq: Grad Standing in speech and hearing science or permission of instructor. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

744.00 Clinical Seminar: Contemporary Issues  GRAD 1
Readings and discussion of topics pertinent to the assessment and treatment of speech and language disorders.
Prereq: Grad standing in speech and hearing science or permission of instructor. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

744.01 Clinical Seminar: Introduction to SLP Clinic  GRAD 1
Readings and discussion of topics pertinent to the assessment and treatment of speech and language disorders.
Prereq: Grad standing in speech and hearing science or permission of instructor. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

744.02 Clinical Seminar: Articulation and Phonology: Assessment and Intervention  GRAD 1
Readings and discussion of topics pertinent to the assessment and treatment of speech and language disorders.
Prereq: Grad standing in speech and hearing science or permission of instructor. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

744.03 Clinical Seminar: Language: Assessment and Intervention  GRAD 1
Readings and discussion of topics pertinent to the assessment and treatment of speech and language disorders.
Prereq: Grad standing in speech and hearing science or permission of instructor. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

744.04 Clinical Seminar: Neurogenics: Assessment and Intervention  GRAD 1
Readings and discussion of topics pertinent to the assessment and treatment of speech and language disorders.
Prereq: Grad standing in speech and hearing science or permission of instructor. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

744.05 Clinical Seminar: Special Issues  GRAD 1
Readings and discussion of topics pertinent to the assessment and treatment of speech and language disorders.
Prereq: Grad standing in speech and hearing science or permission of instructor. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

744.06 Clinical Seminar: Professional Issues  GRAD 1
Readings and discussion of topics pertinent to the assessment and treatment of speech and language disorders.
Prereq: Grad standing in speech and hearing science or permission of instructor. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

750 Assessment of Vestibular Function  GRAD 5
Study of the techniques involved in the administration and interpretation of electronystagmography, rotation, and posturography assessments.

760 Aphasia and Related Adult Language Disorders  GRAD 5
Language disorders resulting from brain injury in adults.
Prereq: 765 or equiv, and grad standing; or permission of instructor. Must have grade of B- or higher in 765.

761 Neurologic Motor Speech Disorder  GRAD 5
The nature, treatment and assessment of neurologically based motor speech disorders in an interdisciplinary context.
Prereq: 765 or equiv, and grad standing; or permission of instructor.

762 Traumatic Brain Injury in Children and Adults  GRAD 5
The mechanism of traumatic brain injury, its impact on communication, and the methods of assessment and intervention.
Prereq: 765 or equiv, and grad standing; or permission of instructor.

763 Evaluation and Treatment of Dysphagia in Adults and Children  GRAD 5
The role of the speech-language pathologist in assessment and treatment of swallowing disorders in children and adults.
Prereq: 765 and grad standing; or permission of instructor.

765 Neurology of the Speech and Hearing Mechanism  GRAD 5
Structure and function of the central and peripheral nervous systems as they relate to speech and hearing.
Prereq: Grad standing in speech and hearing science or permission of instructor.

766 Acoustics and Instrumentation  GRAD 5
Principles underlying the use of electro-acoustic instrumentation in the speech and hearing sciences.
Prereq: College-level algebra.

770 Clinical and Educational Methods in the Schools  GRAD 3
Models, strategies, methodologies, and curriculum involved in planning, implementing, and evaluating team-based instruction for students with communication, language, and learning disabilities.
Prereq or concur: 670; or permission of instructor.

775 Anatomy and Physiology of the Auditory System  GRAD 5
The structure and function of the ear and the stimulus processing capacities of the ear as they relate to performance on tests of auditory function in normal and impaired listeners.
2 2-hr cl. Prereq or concur: 765.

776 Advanced Speech Science  GRAD 5
Graduate introduction to speech instrumentation and speech acoustics; topics in spectrographic analysis and speech synthesis.
Prereq: 420 or equiv.

783H Honors Research  UGRD 3-15
A program of independent study for the student with special aptitudes; individual conferences and reports.
Prereq: 4th yr standing with a grade of A in at least half of the SpHrng courses and an average of B in the remainder; permission of the instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

785 Research Methods I  GRAD 5
Introduction to research design and data analysis for the hearing and speech sciences.
Prereq: Grad standing.
410 Speech and Hearing Science

786 Research Methods II
Introduction to descriptive and inferential statistics as they are utilized in speech and hearing science.
Prereq: 785 or permission of instructor.

794 Group Studies
Prereq: Permission of instructor.
Repeatable to a maximum of 20 cr hrs.

805 Pediatric Audiology I
Etology and assessment of hearing loss in children.
Su, Su Term 1, Su Term 2 Qtrs. 2-2 hr cl. Prereq: 707.

806 Adult Hearing Disorders
The nature, diagnosis, and treatment recommendations of adult hearing disorders.
Prereq: 705, 706, and 707; or equivs.

807 Pediatric Audiology II
Wi Qtr. 2-2 hr cl. Prereq: 735, 805, 835.

815 Seminar for Singing Health Specialist
Required seminar for candidates in the Singing Health Specialization to enable coordination of skills, concepts and practices necessary for successful SHS certification.
Su, Wi Qtrs. 3 cl, 1 lab hr. Prereq: Admission to Singing Health Specialization; completion of Otolaryn 803, 804, 809. Not open to students with credit for Music 815. Open only to Singing Health Specialization candidates. Cross-listed in Music. Some sessions in OSU Clinic, Hospital, Speech and Hearing Lab.

820 Acoustic Phonetics
An introduction to the acoustic characteristics of human speech sounds, the acoustic theory of speech production, and spectrographic analysis.
Prereq: 320 and Linguist 601, or equivs. Not open to students with credit for this topic under 94 or 950.

832 Experimental Phonetics
Experimental investigations of acoustic, physiological, and psychological aspects of speech.

835 Hearing Aids II
The selection and fitting of amplification devices and the verification of patient outcomes.
2-2 hr cl. Prereq: 735.

843 Practicum in Audiology
Students are placed in local audiology clinics to put into practice skills learned in the classroom.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Successful completion of Audiology qualifying examination. Repeatable to a maximum of 60 cr hrs. This course is graded S/U.

844 Practicum in Communication Disorders
Practicum with children and adults having speech, language, or hearing problems.
Prereq: Permission of instructor. Repeatable. This course is graded S/U.

845 Clinical Internship: Speech, Language, and Hearing
Full-time experience in approved clinical setting to partially fulfill requirements for Plan B nonthesis option.
Prereq: Completion of 45 grad cr hrs and 40 hrs of clinical practicum. Prior approval of grad committee required. This course is graded S/U.

846 Field Experience in the Schools
Major practicum experience for students pursuing certification to practice speech/language pathology in schools.
Prereq: 670 or equiv, grad standing in Speech, and permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

858 Psychoacoustics
Theoretical concepts and psychophysical data relative to hearing and related laboratory experiments.

870 School Internship Seminar
Special topics, management concerns, and other planned experiences relative to the school internship in speech-language pathology.
Prereq: 670 and 770, or permission of instructor. Repeatable to a maximum of 6 cr hrs.

893 Directed Doctoral Studies
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 Speech or permission of instructor. Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

900 Doctoral Proseminar in Speech and Hearing Science
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: Doctoral standing in Speech or permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

930.01 Advanced Topics: Cochlear Implants
Cochlear implant components and functions are explored. Students gain knowledge related to patient candidacy, implant programming and rehabilitation procedures.
Wi Qtr. 1-3 hr cl.

930.02 Advanced Topics: Audiology Practice Management
Students will gain knowledge of the many decisions and issues involved in the management of an audiology department or practice.
Su Qtr. 1-4 hr cl.

930.03 Advanced Topics: Tinnitus and Hyperacusis
Students explore the potential physiologic causes of tinnitus and hyperacusis and consider options for assessment and treatment of the disorders.
Sp Qtr. 1-3 hr cl.

930.04 Advanced Topics: Intraoperative Monitoring
Students examine the sensory and motor electrophysiologic measures used to perform intraoperative neurophysiologic monitoring during common otolaryngology-head and neck surgeries.
Sp Qtr. 1-4 hr cl.

930.05 Advanced Topics: Community and Industrial Audiology
The effect of noise on hearing, physiological and psychological function, productivity and communication; federal and state regulations reviewed and effects on communities discussed. Not open to students with credit for 720.

940 Advanced Studies in Speech and Hearing Science
Advanced Studies in Speech and Hearing Science.
Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs.

943 Externship in Audiology
1-15 cr hrs.

950.01 Seminar: Advanced Topics in Speech Production
Advanced Topics in Speech Production.
Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs.

950.02 Seminar: Advanced Topics in Speech Perception
Advanced Topics in Speech Perception.
Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs.

950.03 Seminar: Advanced Topics in Acoustic Phonetics
Advanced Topics in Acoustic Phonetics.
Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs.

950.04 Seminar: Language Development and Disorders
Language Development and Disorders.
Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs.

950.05 Seminar: Second Language Acquisition
Second Language Acquisition.
Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs.

950.06 Seminar: Medical Speech-Language Pathology
Medical Speech-Language Pathology.
Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs.

950.07 Seminar: Voice Disorders
Voice Disorders.
Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs.

950.08 Seminar: Advanced Clinical Research Designs
Advanced Clinical Research Designs.
Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs.

950.09 Seminar: Multidimensional Scaling
Multidimensional Scaling.
Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs.

950.10 Seminar: Phonological Acquisition and Disorders
Phonological Acquisition and Disorders.
Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs.

950.11 Seminar: Signal Detection Theory
Signal Detection Theory.
Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs.

950.12 Seminar: Advanced Topics in Psychoacoustics
Advanced Topics in Psychoacoustics.
Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs.
Speech and Hearing Science 411

950.13 Seminar: Development of the Auditory System  GRAD 3
Development of the Auditory System. Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs.

950.14 Seminar: The Effects of Aging on the Auditory System  GRAD 3
The Effects of Aging on the Auditory System. Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs.

950.15 Seminar: Psychoacoustics and Hearing Impairment  GRAD 3
Psychoacoustics and Hearing Impairment. Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs.

950.16 Seminar: Signal Processing in Hearing Science and Audiology  GRAD 3
Signal Processing in Hearing Science and Audiology. Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs.

950.17 Seminar: Molecular Biology of Hearing  GRAD 3
Molecular Biology of Hearing. Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs.

950.18 Seminar: Advanced Topics in Audiologic Rehabilitation  GRAD 3
Advanced Topics in Audiologic Rehabilitation. Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs.

950.19 Seminar: Research to Practice in Audiology  GRAD 3
Research to Practice in Audiology. Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs.

950.20 Seminar: Special Topics  GRAD 3
Special Topics. Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs.

997 AuD Capstone Project  GRAD 1-15
Students complete clinical or research centered project depending on their career interests. Su, Au, Wi, Sp Qtrs. Prereq: 707. Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

998 Research in Speech and Hearing Science: Thesis  GRAD 1-18
Research for thesis purposes only. Repeatable. This course is graded S/U.

999 Research in Speech and Hearing Science: Dissertation  GRAD 1-18
Research for dissertation purposes only. Repeatable. This course is graded S/U.

Statistics

133 Statistics for the Business Sciences  UGRD 5
Introduction to basic concepts of descriptive statistics and probability, including graphical and numerical data summaries, properties of discrete and continuous probability distributions, and sampling distributions. 133H (honors) may be available. Su, Au, Wi, Sp Qtrs. 3 hr lecture, 2 1-hr recitations. Night version 3 hr lecture (1.5-hr twice/week) + 1 2-hr recitation. Prereq: Math 132 and CSE 200.

135 Elementary Statistics  UGRD 5
Introduction to probability and statistics, experiments, and sampling, data analysis and interpretation. Su, Au, Wi, Sp Qtrs. 3 hr cl, 2 labs. Prereq: Math 050 or Mathematics Placement Level S. Not open to students with credit for any of the following: 125, 145, 245, Econ 442, EdTP 786, MolGen 650, PolitSci 685, Psych 220 or 510, or sociolWork 570 or 571. GEC data analysis course

145 Introduction to the Practice of Statistics  UGRD 5
Topics include probability, descriptive statistics, correlation, regression, design of experiments, sampling, estimation, and testing; emphasis on applications, statistical reasoning, and data analysis using statistical software. Su, Au, Wi, Sp Qtrs. 3 hr cl, 2 labs. Prereq: Math placement level L or M, Math 116 or 130 or 148 or 150 or 151 or equiv. GEC data analysis course.

201.01 Statistics in the Sports World  UGRD 3
Ask and answer questions, debate issues and analyze data from your favorite sports using statistics. Statistical techniques include contingency tables, regression, estimation, confidence levels, testing. Au Qtr. 2 1.5-hr labs. Prereq: One GEC in statistics or equiv or permission of instructor. 201 decimals cannot be used to replace a Data Analysis GEC. Cannot repeat decimals.

218 Statistics for the Life Sciences  UGRD 5
Calculus-based introduction to the statistical analysis of biological data, including probability, common discrete and continuous distributions, experimental design, and hypothesis testing. Sp Qtr. 3 cl, 2 1-hr recitations. Prereq: Math 152 or equiv. Not open to students with credit for 245.
412 Statistics

600 Statistical Consulting I UGRD 2
Role of statistical consultant; enhancement of problem solving and communication skills; development of a personal philosophy of consulting.
Au, Sp Qtrs. Prereq: 645 and permission of instructor. This course is graded S/U.

601 Statistical Consulting II UGRD 2
Experience is given the student in working with real data through association with projects in the Statistics Consulting Service.
Su, Wi Qtrs. 1 1.5-hr cl. Prereq: 600 and permission of instructor. This course is graded S/U.

602 Early Start in Statistics GRAD 5
Selected mathematical topics, including geometric series, binomial expansion, integration by parts, Taylor series; transformation of variables, linear algebra, basic concepts of probability.
Su Qtr. 4 cl. Prereq: Grad standing in stat.

603 Teaching of Statistics GRAD 3
Introduction to the teaching of statistics; teaching strategies; communicating with students; review of topics taught in Stat 133, 135, and 145, and the computing lab.
Su Qtr. 2.5-hr cl. Prereq: Grad standing in stat. This course is graded S/U.

604 Mentored Teaching Experience in Statistics GRAD 3
The application of best pedagogical practices in selected statistics teaching experiences. A supervised teaching component is included.
Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in statistics or permission of instructor. This course is graded S/U.

610 Probability for Statistical Inference GRAD 5
Introduction to probability, random variables, and distribution theory intended primarily for students in MAS degree program.
Au Qtr. 3 cl. Prereq: Math 548 or permission of instructor. Not open to students with credit for Math 530.

620 Statistical Theory I GRAD 4
Introduction to probability, conditional probability, independence, random variables, distribution functions, moments, generating functions, common probability distributions; marginal and conditional distributions; sampling distributions; convergence concepts.
Au Qtr. 4 cl. Prereq: Math 548. Not open to students with credit for 610.

621 Statistical Theory II GRAD 5
Sufficiency, maximum likelihood estimation, minimum variance, unbiased estimation, Bayes estimation, decision theory.
Wi Qtr. 4 cl. Prereq: 620 or permission of instructor.

622 Statistical Theory III GRAD 5
Likelihood ratio tests, Neyman Pearson theorem and uniformly most powerful tests, confidence intervals, applications to linear models.
Sp Qtr. 4 cl. Prereq: 621.

623 Theory of Statistical Analysis GRAD 5
Estimation, hypothesis tests, best tests, likelihood ratio tests, confidence sets, sufficiency, efficient estimators, intended primarily for students in the MAS degree program.
Wi Qtr. 3 cl. Prereq: 610 or 620 or permission of instructor. Not open to students with credit for 621 or 622.

625 Applied Bayesian Analysis GRAD 4
Introduces various aspects of Bayesian modeling (including conditionally specified models and models for non-normal data) and simulation-based model-fitting strategies.
Wi Qtr. 2-3 cl. Prereq: Statistical Theory (Stat 520/521, or Stat 610/623, or Stat 621/622) and Applied Regression Analysis (Stat 645) or permission of instructor.

628 Statistical Practice I GRAD 4
Computing environment; statistical computing; scientific method; overview of statistical problem formulation and inference; foundations of stochastic modeling; exploratory data analysis; descriptive statistics.
Su Qtr. 4 cl. Prereq or concur: 620.

631 Introduction to Spatial Statistics GRAD 3
Introduction to spatial statistical methods based on the viewpoint that spatial data are a realization from a random process.
Sp Qtr. Prereq: 645 or Geog 883, or permission of instructor. Not open to students with credit for 629.

632 Applied Stochastic Processes I GRAD 3
Conditioning, discrete time Markov chains, Poisson processes, branching process.
Wi Qtr. 3 cl. Prereq: 623 or permission of instructor.

635 Statistical Analysis of Time Series GRAD 3
Develop knowledge of time series processes, statistical theory for time series, time series modeling (identification, estimation, and diagnostics), and forecasting methods.
Au Qtr. Prereq: 622 or 623, 645; or permission of instructor.

641 Design and Analysis of Experiments GRAD 5
The linear model for experimental designs; analysis of variance; factorial experiments; and block designs.
Wi, Sp Qtrs. 3 cl. Prereq: 521, 645, and knowledge of elementary linear algebra; or permission of instructor.

645 Applied Regression Analysis GRAD 5
Simple and multiple linear regression, diagnostics, model selection, models with categorical variables.
Au, Wi, Sp Qtrs. 3 cl. Prereq: 521 or equiv.

651 Survey Sampling Methods GRAD 4
Sampling from finite populations, simple random, stratified, systematic, and cluster sampling designs; ratio and regression estimates; non-sampling errors.
Wi Qtr. 2-3 cl. Prereq: 521 or permission of instructor. Not open to students with credit for PubH/Bio 651. Cross-listed in PubH/Bio.

652 Applied Statistical Analysis with Missing Data GRAD 4
Models and methods for the dataset with missing values, including imputation and likelihood and Bayesian-based models.

656 Applied Multivariate Analysis GRAD 5
Matrix computation of summary statistics, geometry of sample data; multivariate normal distribution; MANOVA; principal components; discriminant analysis; topics may include factor analysis, cluster analysis, canonical correlation.
Wi, Sp Qtrs. 3 cl. Prereq: 645 or equiv and knowledge of linear algebra. Some experience with computers is expected.

661 Applied Nonparametric Statistics GRAD 5
Noncalculus treatment of nonparametric tests, confidence intervals, estimation; topics include one- and two-sample problems, one- and two-way analysis of variance, multiple comparisons, correlation.
Su, Sp Qtrs. 5 cl. Prereq: 521 or 529 or equiv.

662 Environmental Statistics GRAD 3
Survey of statistical methods for environmental data, with a focus on applications. Topics include sampling, regression, censoring, risk analysis, bioassay, time series, and spatial statistics.
Sp Qtr. 2.5-hr cl. Prereq: Grad standing in statistics or Stat 529 or Geog 883.01 or equiv.

663 Statistical Methods in Reliability GRAD 5
Statistical failure models, graphical and analytic parametric estimation for censored samples, non-parametric survival function estimation, reliability of composite and repairable systems, Bayesian estimation and prediction.
^ Sp Qtr. 3.1-5 hr cl. Prereq: 521 or 623 or equiv.

664 Principles of Statistical Quality Control GRAD 5
Pareto diagrams; process control: Shewhart, CUSUM, empirical Bayes; multivariate and other control charts; economic design, process capability, Taguchi’s method for off-line control; acceptance sampling.
Au Qtr. 3 cl. Prereq: 521 or 623 or equiv.

665 Discrete Data Analysis UGRD 4
Two-by-two tables; cross-sectional, prospective, and retrospective studies; log linear model analysis of cross-classified data; logistic regression analysis; analysis of stratified tables.
Sp Qtr. 2 cl. Prereq: 529 or 645 or permission of instructor.

673 Introduction to Computational Statistics GRAD 3
Topics include manipulating and visualizing data, random number generation, designing and performing Monte Carlo experiments, and using resampling methods such as the bootstrap.
Au Qtr. 3 cl. Prereq: 610 and 623 or equivalent; 641 and 645, or permission of instructor.

674 Data Management and Presentation I GRAD 2
Inputting data, data manipulation and calculations, handling missing data, merging data, transporting data sets, dates and formatting, relational databases and structured query language; emphasizes use of statistical software SAS.
Au Qtr. 1.2 hr cl. This course is graded S/U.

675 Data Management and Presentation II GRAD 2
Handling character data, custom reports, macro programming, graphics and multiple plots, output delivery system, transforming output to Web pages and other formats; emphasizes use of statistical software SAS.
Wi, Sp Qtrs. 1 2-hr cl. Prereq: 674 or permission of instructor. This course is graded S/U.

693 Individual Studies GRAD 1-5
Individual conferences, assigned readings, and reports on minor investigations.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 or hrs. This course is graded S/U.

694 Group Studies GRAD 2-5
Designed to give groups of students an opportunity to pursue special studies not otherwise offered.
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 20 or hrs.

722 Theory of Probability I GRAD 4
Measure and integration; random variables; independence; convergence in probability, almost everywhere, and in the mean; conditional probability and expectation.
Au Qtr. 4 cl. Prereq: Math 563. Not open to students with credit for Math 722. Cross-listed in Mathematics.

723 Theory of Probability II GRAD 4
Weak convergence; characteristic functions; central limit theorems; random walks; introduction to martingales.
Wi Qtr. 4 cl. Prereq: 722 or Math 722. Not open to students with credit for Math 723. Cross-listed in Mathematics.
726 Models for Continuous and Discrete Longitudinal Data
Classical and modern statistical approaches to analyze continuous and discrete longitudinal data.
Sp Qtr. Prereq: Grad standing in Statistics or Biostatistics; Stat 622 and Stat 645, or permission of instructor.
Not open to students with credit for PubHlth 726. Cross-listed in PubHlth.

742 Theory of Linear and Mixed Models
Grad 4
Theory of the general linear model; least square estimates and properties, especially in non-full rank models; analysis of variance technique; multi-factor models; random effects and mixed models.
Au Qtr. 2-2 hr cl. Prereq: 621 or 623, and 656 or Math 568, or permission of instructor.

743 Generalized Linear Models
Grad 4
Introduces the statistical theory and methodology to extend regression and analysis of variance to non-normal data.
Wi Qtr. 3 cl. Prereq: 645 and 742.

745 Multiple Comparisons Procedures
Grad 3
Types and levels of multiple comparison inference, abuses, sample size computation, graphical representation.
* Sp Qtr. 3 cl. Prereq: 742 or permission of instructor.

746 Design and Analysis of Experiments
Grad 3
A continuation of 742; various experimental designs; analysis of covariance, mixed and random models.
Wi Qtr. 2 cl. Prereq: 742.

755 Multivariate Analysis I
Grad 3
Geometrical representations of data; random vectors, normal distribution for random vector and random data matrices, Wishart distribution, inferences based on normal theory.
** Wi Qtr. 2 cl. Prereq: 521 or 823, and Math 471 or 601.

756 Multivariate Analysis II
Grad 3
Multivariate regression analysis; principal component analysis; factor analysis; canonical correlation analysis; discriminant analysis—all from a theoretical point of view.
** Sp Qtr. 2 cl. Prereq: 755.

760 Elements of Statistical Learning
Grad 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.
Wi Qtr. 2.5-1 hr cl. Prereq: 610/823 or higher, or ECE 804/806; Familiarity with Matrix Algebra and Linear Regression Analysis. Final project report and class presentation is a key component of this course.

761 Nonparametric Statistics I
Grad 3
Order statistics, equal distribution technique, counting and ranking methods, distribution-free statistics, Monte Carlo power simulation studies, asymptotic relative efficiency.
* Au Qtr. 3 cl. Prereq: 622 or 623.

763 Nonparametric Function Estimation
Grad 3
Nonparametric function estimation with emphasis on smoothing splines, flexible model building based on noisy multivariate data, kernel methods, additional topics in smoothing.
* Sp Qtr. 3 cl. Prereq: 622, 645, and knowledge of linear algebra.

764 Order Statistics
Grad 4
Distribution theory in continuous and discrete cases, moments, order statistics in statistical inference, asymptotic theory.
** Sp Qtr. 4 cl. Prereq: 622 or permission of instructor.

773 Statistical Computing
Grad 3
Random number and variate generation, variance reduction, integral equations, resampling methods, maximization, E-M algorithm and other topics.
Au Qtr. 3 cl. Prereq: 622.

789 Survey Research Practicum
Grad 5
Hands-on applications for students interested in the planning, implementation, and analysis of a scientific sample survey.
Sp Qtr. 1-1.5 hr cl. Prereq: Admission to grad interdisciplinary specialization in survey research and permission of instructor. Not open to students with credit for 789 in AEDEcon, AgrEduC, BusMktg, Econ, EduFL, Geog, JCom, PoliSc, Psych, PubHlth, PubPoM, or Social. Cross-listed in AEDEcon, AgrEduC, BusMktg, Econ, EduFL, Geog, JCom, PoliSc, Psych, PubHlth, PubPoM, and Social.

801 Seminar on Research Topics in Statistics
Grad 2
Lectures on current research by each graduate faculty member in statistics.
Au Qtr. 1-1.5 hr cl. Prereq: 2nd yr standing in Stat PhD program or permission of instructor. Repeatable to a maximum of 4 cr hrs. This course is graded S/U.

820 Statistical Inference I
Grad 3
Statistical decision theory, foundations of statistics, Bayesian analysis, sequential analysis, sequential probability ratio test.
Au Qtr. 3 cl. Prereq: 622.

821 Statistical Inference II
Grad 3
Sufficiency and invariance, unbiased and equivariant estimators, Neyman-Pearson, UMP, UMPU and invariate tests.
Wi Qtr. 3 cl. Prereq: 722, or Math 722 and 820.

Statistics
413

822 Statistical Inference III
Grad 3
Asymptotic theory for estimators and tests, resampling methods and other topics in modern inference.
Sp Qtr. 3 cl. Prereq: 723 or Math 723, and 821.

825 Advanced Bayesian Analysis
Grad 3
Bayesian computation, nonparametric Bayes methods, semiparametric Bayes methods, robust Bayesian analysis, complex Bayesian models.
* Wi Qtr. 3 cl. Prereq: 821.

829 Spatial Statistics
Grad 3
Spatial statistics at an advanced level; topics include geostatistics, lattice models with emphasis on Markov random fields, and spatial point processes.
** Sp Qtr. 2-1 hr cl. 3 labs arr/qtr. Prereq: 622 and 645.

832 Applied Probability Models
Grad 3
Birth and death processes, Queuing Theory, Branching processes and other applied probability models.
Wi Qtr. 3 cl. Prereq: Math 722.

833 Statistical Methods for Analyzing Genetic Data
Grad 3
Basic principles of population genetics, linkage analysis, association study, genetic epidemiology, and analysis of gene expression data.
* Au Qtr. 2-1 hr cl. Prereq: 622 or equiv or permission of instructor.

847 Advanced Design of Experiments
Grad 3
Partially balanced designs, factorial experiments, confounding and fractional replications, response surface designs.
** Sp Qtr. Prereq: 746.

881 Advanced Topics in Mathematical Statistics I
Grad 3
Topics to be taken from the following: multivariate analysis, stochastic processes, analysis of variance, components of variance models, advanced test design.
Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: Grad standing in Stat. Repeatable to a maximum of 9 cr hrs.

882 Advanced Topics in Mathematical Statistics II
Grad 3
Continuation of 881.
Au, Wi, Sp Qtrs. 3 cl. Prereq: Grad standing in Stat. Repeatable to a maximum of 9 cr hrs.

888 Large Sample Theory
Grad 3
Mann-Wald theory of stochastic order relationships; asymptotic distribution of maximum likelihood estimates and likelihood ratio statistic, large deviation theory, asymptotic theory of well-known statistics.
Sp Qtr. 3 cl. Prereq: 822.

891.01 Interdisciplinary Seminar on Biomedical Images
Grad 1-2
Graduate seminar for Graduate Interdisciplinary Specialization in Comprehensive Engineering and Science of Medical Images.
Au, Wi, Sp Qtrs. 1 cl. Prereq: Grad standing. Cross-listed in Biomedical Engineering, Biomedical Informatics, Biophysics, Computer Science and Engineering, Electrical and Computer Engineering, Integrated Biomedical Science, Pathology, Radiology, and Vision Science. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

893 Advanced Individual Studies
Grad 1-5
Individual conferences, assigned readings, and reports on investigations.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

894 Advanced Group Studies
Grad 1-5
Designed to give groups of advanced students an opportunity to pursue special studies not otherwise offered.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

895 Statistics Seminar
Grad 1
Topics range over the current research interests of statisticians from around the world; some lectures are of an expository nature.
Au, Wi, Sp Qtrs. 1 cl. Prereq: Permission of dept. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

999 Research
Grad 1-18
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

Surgery

610 Techniques in Transplantation Research
Grad 3
Provides students with exposure to theoretical and practical aspects of techniques in transplant research.
Su, Au, Wi, Sp Qtrs. 1-3 hr cl or 2.5-1 hr cl. This course is graded S/U.

611 Transplantation Research
Grad 3
Gives students the opportunity to design, execute and report research in transplantation.
Su, Au, Wi, Sp Qtrs. 2-1.5 hr cl. Prereq: 610; permission of instructor.

750.01 Seminars in Practice Management for Surgeons
Grad 1
Provides surgery residents basic information on business principles related to the practice of medicine and surgery.
Prereq: Medical Degree; One year of surgical residency. This course is graded S/U.
Surgery

750.02 Seminars in Practice Management for Surgeons GRAD 1 II
Provides surgery residents basic information on business principles related to the practice of medicine and surgery.
Prereq: Medical Degree; One year of surgical residency. This course is graded S/U.

750.03 Seminars in Practice Management for Surgeons GRAD 1 III
Provides surgery residents basic information on business principles related to the practice of medicine and surgery.
Prereq: Medical Degree; One year of surgical residency. This course is graded S/U.

750.04 Seminars in Practice Management for Surgeons GRAD 1 IV
Provides surgery residents basic information on business principles related to the practice of medicine and surgery.
Prereq: Medical Degree; One year of surgical residency. This course is graded S/U.

750.05 Seminars in Practice Management for Surgeons GRAD 1 V
Provides surgery residents basic information on business principles related to the practice of medicine and surgery.
Prereq: Medical Degree; One year of surgical residency. This course is graded S/U.

750.06 Seminars in Practice Management for Surgeons GRAD 1 VI
Provides surgery residents basic information on business principles related to the practice of medicine and surgery.
Prereq: Medical Degree; One year of surgical residency. This course is graded S/U.

750.07 Seminars in Practice Management for Surgeons GRAD 1 VII
Provides surgery residents basic information on business principles related to the practice of medicine and surgery.
Prereq: Medical Degree; One year of surgical residency. This course is graded S/U.

750.08 Seminars in Practice Management for Surgeons GRAD 1 VIII
Provides surgery residents basic information on business principles related to the practice of medicine and surgery.
Prereq: Medical Degree; One year of surgical residency. This course is graded S/U.

Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

Prereq: Permission of instructor. 1, 2, 3, or 4 months; offered all months. Repeatable to a maximum of 24 cr hrs for professional credit. Repeatable to a maximum of 15 cr hrs for grad credit. This course is graded S/U.

Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs.

Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

750.17 Research Studies in Surgery: Biomedical Research GRAD 2 Discussion of current literature and ethical issues relating to human participants and use of animals in research.
Wi, Sp Qtrs. 1 hr e-learning, 1 hr lecture/discussion. Prereq: Introduction to research ethics course (e.g., Pharmac 751); permission of instructor. Repeatable to a maximum of 4 cr hrs. Credit counts towards MSMS degree.

750.18 Research Studies in Surgery: Professional Practice for Surgeons GRAD 1
Provides surgery residents basic information on business principles related to the practice of medicine and surgery.
Prereq: Medical Degree; One year of surgical residency. This course is graded S/U.

Surgery

791.01 Individual Studies: General Surgery GRAD 1-18 Conducting basic science or clinical research on a surgically related topic under faculty supervision. All months.
Prereq: Must be PGY-2 or more advanced in surgery residency or related residency programs; permission of instructor. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

791.02 Individual Studies: Pediatric Surgery GRAD 1-18 Conducting basic science or clinical research on a surgically related topic under faculty supervision. All months.
Prereq: Must be PGY-2 or more advanced in surgery residency or related residency programs; permission of instructor. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

791.03 Individual Studies: Neurological MED 6-18 Neurological.
Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs.

791.04 Individual Studies: Orthopedic MED 6-18 Orthopedic.
Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs.

791.05 Individual Studies: Pediatric MED 6 Pediatric.
Prereq: Permission of instructor.

791.06 Individual Studies: Urology MED 6 Urology.
Prereq: Permission of instructor.

Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs. Offered all months.

791.08 Individual Studies: Plastic MED 6-18 Plastic.
Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs.

791.09 Individual Studies: Wound Healing GRAD 1-18 Conducting basic science or clinical research on a surgically related topic under faculty supervision. All months.
Prereq: Must be PGY-2 or more advanced in surgery residency or related residency programs; permission of instructor. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

791.10 Individual Studies: Scoliosis MED 6-18 Conducting basic science or clinical research on a surgically related topic under faculty supervision. All months.
Prereq: Must be PGY-2 or more advanced in surgery residency or related residency programs; permission of instructor. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

791.11 Individual Studies: Vascular Surgery MED 6-18 Conducting basic science or clinical research on a surgically related topic under faculty supervision. All months.
Prereq: Must be PGY-2 or more advanced in surgery residency or related residency programs; permission of instructor. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

791.12 Individual Studies: Molecular Medicine MED 1-18 Conducting basic science or clinical research on a surgically related topic under faculty supervision. All months.
Prereq: Must be PGY-2 or more advanced in surgery residency or related residency programs; permission of instructor. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

814 Responsible Conduct of Research: Human Participants and the Use of Animals in Biomedical Research
Provides surgery residents basic information on business principles related to the practice of medicine and surgery.
Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

815.01 Training in Clinical Research I GRAD 1 Training in Clinical Research I.
Su, Au Qtrs. 1 cl. Prereq: Permission of instructor. Repeatable to a maximum of 2 cr hrs. This course is Progress ('P') graded. Credit counts towards MSMS degree. Credit will be awarded upon completion of 4815.03. This course is graded S/U.

815.02 Training in Clinical Research II GRAD 1 Continuation of 815.01.
Au, Wi Qtrs. 1 cl. Prereq: Permission of instructor. Repeatable to a maximum of 2 cr hrs. This course is Progress ('P') graded. Credit counts towards MSMS degree. Credit will be awarded upon completion of 815.03. This course is graded S/U.
Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit, except by permission of dept. GEC for lang course. FL Admis Cond course. Not open to students with credit for 101, or to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. No audit.

104.01 Intermediate Swedish II UGRD 5
Continuation of 101; further work on basic listening, speaking, and reading skills using a competency-based curriculum. Prereq: 101 or 101.01 or 5 hrs of 101.51. Not open to students with credit for 102, or to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. FL Admis cond course. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

103 Intermediate Swedish I UGRD 5
Further development of listening, reading, speaking, and writing skills; readings based on Swedish culture and literature. 5 cl. Prereq: 102 or 102.01 or 102.51. Not open to students with credit for AfAmASt 203; or to native speakers of this language through regular course enrollment or EM credit. GEC for lang course.

104 Intermediate Swedish II UGRD 5
Balanced use of basic language skills; emphasis on speaking and aural comprehension; further exposure to Swedish culture through reading of current newspapers, short stories, plays, and novels. 5 cl. Prereq: 103 or equiv. Not open to students with credit for AfAmASt 204; or to native speakers of this language through regular course enrollment or EM credit. GEC for lang course.

401 Advanced Swahili Grammar UGRD 5
Review of fundamental principles of grammar and syntax; exercises in Swahili. * Prereq: 104 or permission of instructor.

402 Advanced Swahili, Grammar and Composition UGRD 3
Introduction to advanced Swahili composition and grammar. * Prereq: 401 or permission of instructor.

101.01 Elementary Swahili I UGRD 5
Development of basic listening, speaking, and reading skills using a competency-based curriculum. Not open to students with credit for 101, 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. GEC for lang course. FL Admis Cond course. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

102.01 Elementary Swahili II UGRD 5
Continuation of 101; further work on basic listening, speaking, and reading skills using a competency-based curriculum. Prereq: 101 or 101.01 or 5 hrs of 101.51. Not open to students with credit for 102, or to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. FL Admis cond course. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

103 Intermediate Swahili I UGRD 5
Balanced use of basic language skills; review of aural comprehension basics, speaking, reading, and writing. 5 cl. Prereq: 102 or 102.01 or equiv or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. No audit.

104 Intermediate Swahili II UGRD 5
Conclusion of intermediate Swahili; extensive practice in spoken and written Swahili. 5 cl. Prereq: 103 or equiv; or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. No audit.

401 Advanced Swahili Grammar UGRD 5
Review of fundamental principles of grammar and syntax; exercises in Swahili. * Prereq: 104 or permission of instructor.

402 Advanced Swahili, Grammar and Composition UGRD 3
Introduction to advanced Swahili composition and grammar. * Prereq: 401 or permission of instructor.

101.01 Elementary Swedish I UGRD 5
Development of aural comprehension, speaking, reading, and writing skills. Au Qtr. 5 cl. Prereq: 101.01; or equiv or permission of instructor. Not open 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. GEC for lang course. No audit.

102.01 Elementary Swedish II UGRD 5
Continuation of development of aural comprehension, speaking, reading, and writing skills. Wi Qtr. 5 cl. Prereq: 101.01 or equiv or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. No audit.

103.01 Intermediate Swedish I UGRD 5
Balanced use of basic language skills; review of aural comprehension basics, speaking, reading, and writing. 5 cl. Prereq: 102.01 or equiv or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. No audit.

104.01 Intermediate Swedish II UGRD 5
Conclusion of intermediate Swedish; extensive practice in spoken and written Swedish. 5 cl. Prereq: 103.01 or equiv; or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. No audit.
416 The Arts, College Of

699H Honors Undergraduate Scholarship: Research and Creative Activity in Computer Technology in the Arts UGRD 1-15
Undergraduate research or creative activities in various topics. Su, Au, Wi, Sp Qtrs. Prereq: Honors program and permission of instructor. Repeatable to a maximum of 15 cr hrs.

730 Concept Development for Sequential Imaging GRAD 3
Strategies for moving image; composition, frame editing, and sound elements; creation of sketches, storyboards, and animations as method for time-based media. 2 2-hr cl.

732 A Critical History of Computer Graphics GRAD 3
An historical overview of the development of the discipline of computer-generated imagery, including CAD, computer animation, computer art, and scientific visualization. 2.5-hr cl. Prereq: Grad standing or permission of instructor.

733 Video Game Prototyping GRAD 5
Introduction to theories and strategies for creating video games. Students will explore game theory, design and learn what makes video games "fun" to play. Wi Qtr. Prereq: Graduate standing or permission of the instructor. Students will prototype novel game ideas and explore game mechanics by creating their own computer video game using software packages such as "Flash". Development tools and code libraries will be provided so students can focus on creating new game ideas.

734 Video Game Production GRAD 5
Introduction to video game creation. Teams will progress from concept to prototype to playable game by the end of the course. Sp Qtr. Prereq: Grad standing or permission of instructor. Creative multi-disciplinary teams will collaborate to produce a video game using software and computer equipment (including sound). Students will contribute to, document and critique the game. A final game will be playable on the course arcade machine.

740 Interactive Arts Media I GRAD 5
The theory and practice of the design of interactive media for the web. 2 2.5-hr cl. Prereq: Prior experience with Adobe Photoshop recommended.

741 Interactive Arts Media II GRAD 5
Advanced study in the application of interactive media for the web; production of websites for selected audiences. 2 2.5-hr cl. Prereq: 740.

742 Interactive Arts Media III GRAD 5
Advanced authoring environments for multimedia production. 2 2.5-hr cl. Prereq: 741.

749 3D Computer Animation: Form, Light and Motion GRAD 5
Overview of production methods for form, lighting and motion used in 3D computer animation. Graduate students will apply interdisciplinary concepts to their area of research. Prereq: Grad standing or permission of instructor.

750 Expressive Motion GRAD 5
Introduction to basic principles of timing and motion via production of 3D computer generated animation; meaning, expression, timing, and gesture. 2 2.5-hr cl. Prereq: Grad standing or permission of instructor.

751 Form Visualization GRAD 5
Computer-generated 3D modeling concepts and techniques for visualization by artists and designers. 2 2.5-hr cl. Prereq: Grad standing or permission of instructor.

752 Digital Cinematography GRAD 5
Exploration of elements that enhance storytelling such as digital lighting, surface, design and camera composition as meaning. 2 2.5-hr cl. Prereq: Grad standing or permission of instructor.

753 Animation Production GRAD 5
Studio course in which students address interdisciplinary production issues in computer animation. 2 2.5-hr cl. Prereq: Grad standing and 730, 750 or 751 or 752; or permission of instructor. Repeatable to a maximum of 15 cr hrs.

754 Digital and Physical Lighting GRAD 5
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: 752 or Theatre 625 or grad standing or permission of instructor. Not open to students with credit for Theatre 754. Cross-listed in Theatre. Jointly taught by Theatre and The Advance Computing Center for Art and Design. Offered every other year.

755 Advanced Digital Cinematography GRAD 5
Study of advanced issues in virtual lights and surfaces in computer graphics. 2 2.5-hr cl. Prereq: Grad standing or permission of instructor.

756 Programming Concepts and Applications for Artists and Designers GRAD 3
Designed to teach artists and designers programming concepts both necessary and useful for advanced algorithmic manipulation of computer graphics data and software. 2 1.5-hr cl. Prereq: Grad standing or permission of instructor.

758 Visual Performance and Installation Technologies GRAD 5
In this project-based class, students are exposed to making computer mediated performance and installation systems, focusing on real-time video processing, 3D graphics, and environment sensing. Prereq: Grad standing; 750 or 751, or 752 or equiv; undergrads with permission of instructor.

759 Experimental Scripting for Animation in Maya GRAD 5
Introduction to Maya embedded language for animators to control complex operations and explore ideas for the generation of motion graphics through mathematical procedures. Prereq: Experience with Maya 3D software. Grad standing or permission of instructor.

760 Motion Capture Production GRAD 5
Studio based overview of the motion capture pipeline. Students learn setup, capture, how to create data-driven animation and are encouraged to experiment with the process. Prereq: Grad standing or undergraduates by permission of instructor only. Survey of issues surrounding the capture and processing of motion data. Students will learn each process by hands-on experimentation, supplemented by reading, analyzing and discussing motion capture related topics. Examples will be presented in lectures and demonstrations.

761 Digital Media Production GRAD 3
A study of digital post-production processes; investigation of tools and algorithms for digital audio, digital video, digital image manipulation. 2 1.5-hr cl.

762 Building 3D Virtual Environments GRAD 5
Creation and implications of single and multiple participant 3D virtual environments. 2 2.5-hr cl. Prereq: Grad standing or permission of instructor.

763 Procedural Animation GRAD 5
Students create computer animation using procedural methods for modeling, rendering and animating 3D computer generated objects, environments, or characters. The use of techniques such as parametric modeling, particle systems, data-driven design, dynamic simulation, and behavioral animation will be studied. Su Qtr. Prereq: 750 or 751 or 752 or permission of instructor.

790 Interdisciplinary Research Seminar in Computer Technology in the Arts GRAD 5
Interdisciplinary investigations into animating and industrial and instructional design through the use of computer technology. Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

Theatre

100 Introduction to Theatre UGRD 5
A study of the theatre with emphasis upon its cultural and social influences in our society. 100H (honors) may be available. Su, Au, Wi, Sp Qtrs. GEC arts and hums VPA course. VPA Admis Cond course. 100E may be available for honors embedded experience at the regional campuses.

100E Introduction to Theatre UGRD 5
A study of the theatre with emphasis upon its cultural and social influences in our society. GEC social diversity and arts and hums VPA course. VPA Admis Cond course. E100 may be available for honors embedded experience at the regional campuses. Su, Au, Wi, Sp Qtrs.

101H Introduction to Theatre: Making History UGRD 5
Exploration of the cultural and aesthetic dynamics of performance through examining primary source materials documenting artistic creation. Sp Qtr. 2 2-hr cl. Prereq: May be available to students enrolled in an honors program or by permission of dept or instructor. Not open to students with credit for 100 or 100H. Taught in English. GEC arts and hums VPA course. VPA Admis Cond course.

161 Dance and Theatre, 1945 to the Present UGRD 5
Survey of contemporary practices in western dance and theatre from 1945 to the present, with emphasis on major stylistic trends, multicultural influences, and principal artists and their works. Su, Au, Wi, Sp Qtrs. 2 2-hr cl, 1 1-hr rec. Not open to students with credit for ArtsCol 161 or Dance 161. Cross-listed in Dance. GEC arts and hums VPA course. VPA Admis Cond course.

205 Technical Production Practicum UGRD 1
Provides experience in technical production activities. Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 6 cr hrs. VPA Admis Cond course.

210 Fundamentals of Script Analysis UGRD 3
Fundamental principles for intensive study of the playscript as the basis of production. Au, Wi, Sp Qtrs. Prereq: 100. VPA Admis Cond course.

220 Technical Production Fundamentals I UGRD 5
Basic aspects of scenery design construction; theory, process, equipment, materials, and skills. Su, Au, Wi Qtrs. 2 cl, 2 lab hrs; plus 20 practicum hours. VPA Admis Cond course.

221 Technical Production Fundamentals II UGRD 5
Basic aspects of lighting design and technology, theory, process, equipment, materials, and skills. Su, Wi, Sp Qtrs. 2 cl, 2 lab hrs; plus 20 practicum hours. VPA Admis Cond course.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>222</td>
<td>Technical Production Fundamentals III</td>
<td>UGRD 5</td>
<td>Basic aspects of costume design and construction; equipment, theory, process, materials, and skills. Au, Sp Qtrs. 2 cl, 2 lab hrs; plus 20 practicum hours. VPA Admis Cond course.</td>
</tr>
<tr>
<td>230H</td>
<td>Moving Image Art</td>
<td>UGRD 5</td>
<td>Exploration of creative moving image art through the use of video and with participation in Wexner Center film/video program. Wi Qtr. 1 2-hr cl, 1 3-hr cl. Prereq: Enrollment in an honors program or permission of instructor, and soph standing. GEC arts and hums VPA course. VPA Admis Cond course.</td>
</tr>
<tr>
<td>271</td>
<td>Great Ages of the Theatre</td>
<td>UGRD 5</td>
<td>Concepts and characteristics of the great periods of the theatre of the western world. 271H (honors) may be available. Au, Wi, Sp Qtrs. Offered only on regional campuses. Prereq: English 110 or 111 or equiv. GEC arts and hums VPA course. VPA Admis Cond course.</td>
</tr>
<tr>
<td>280</td>
<td>Craft of Acting</td>
<td>UGRD 5</td>
<td>Basic acting techniques; imagination, concentration, human psychology as applied to creation of character and development of stage presence. Su, Au, Wi, Sp Qtrs. 2 2-hr cl. VPA Admis Cond course. GEC arts and hums VPA course.</td>
</tr>
<tr>
<td>300</td>
<td>Fundamentals of Television Broadcasting</td>
<td>UGRD 5</td>
<td>Provides students with the fundamentals of television broadcasting through lectures, labs and practicum involvement with Buckeye TV. Au, Wi, Sp Qtrs. 1 2-hr cl, 1 2-hr lab. Prereq: Permission of instructor.</td>
</tr>
<tr>
<td>305</td>
<td>Production Run Crew Practicum</td>
<td>UGRD 2</td>
<td>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. Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 8 cr hrs.</td>
</tr>
<tr>
<td>310</td>
<td>Stage Directing</td>
<td>UGRD 5</td>
<td>Techniques of play analysis, interpretation, composition, movement, rhythm and tempo; their integration in stage direction. Au, Wi, Sp Qtrs. 3 2-hr cl. Prereq: 210, 280, and jr standing.</td>
</tr>
<tr>
<td>341</td>
<td>Introduction to Stage Design</td>
<td>UGRD 3</td>
<td>Introduction to basic design elements of stage design including research, sketching, color theory, and model building. Wi Qtr. 2 1.5-hr cl. Prereq: 220.</td>
</tr>
<tr>
<td>353</td>
<td>Stage Makeup</td>
<td>UGRD 3</td>
<td>Practical application of the theories and techniques of theatrical makeup and presentational theatre styles. Wi Qtr. 2 3-hr labs.</td>
</tr>
<tr>
<td>367.01</td>
<td>Self Images: America on Stage, 1830 to the Present</td>
<td>UGRD 5</td>
<td>Study of theatre history at an intermediate level with emphasis on writing skills. Exploration of the images of Americans presented on popular stages through written analysis of theatrical and critical texts. 367.01H (honors) may be available. Au, Wi, Sp Qtrs. Prereq: English 110 or 111 or equiv, and soph standing or above. Not open to students with credit for 367. GEC second writing and social diversity in the US course.</td>
</tr>
<tr>
<td>367.02</td>
<td>African American Theatre History</td>
<td>UGRD 5</td>
<td>Study of theatre history at an intermediate level with emphasis on writing skills. Examination of the aesthetic and sociological evolution in America of African American theatre and its literature. Wi, Au, Sp Qtrs. Prereq: English 110 or 111 or equiv, and soph standing or above. Not open to students with credit for AAAmASt 367.02. GEC second writing and social diversity in the US course. Cross-listed in African-American and African Studies.</td>
</tr>
<tr>
<td>367.03</td>
<td>Criticizing Television</td>
<td>UGRD 5</td>
<td>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. Au, Wi, Sp Qtrs. 2 2.5-hr cl. Prereq: English 110. Not open to students with credit for ArtEduc 367.03. GEC second writing and social diversity in the US course. This course will alternately be taught by Art Education and Theatre. Cross-listed in Art Education.</td>
</tr>
<tr>
<td>380</td>
<td>Acting Studio IA</td>
<td>UGRD 3</td>
<td>Studio in acting focusing on the principles of Stanislavsky in rehearsed scenes. Au Qtr. 3 2-hr cl. Prereq: 280, and either 383 or 388.</td>
</tr>
<tr>
<td>381</td>
<td>Acting Studio IB</td>
<td>UGRD 3</td>
<td>Studio 3 acting focusing on contemporary scene study. Wi Qtr. 3 2-hr cl. Prereq: 380.</td>
</tr>
<tr>
<td>382</td>
<td>Acting Studio IC</td>
<td>UGRD 3</td>
<td>Studio in acting focusing on the special challenges of acting in Shakespeare’s plays. Sp Qtr. 3 2-hr cl. Prereq: 380.</td>
</tr>
<tr>
<td>384</td>
<td>Speech and Voice Studio II</td>
<td>UGRD 3</td>
<td>Continuation of 383, developing vocal range and resonance, breath control, articulation and expanded dialect choices through work on a variety of performed texts. Wi Qtr. 4 cl. Prereq: 383.</td>
</tr>
</tbody>
</table>
601 Theatre Management  
Principles, practices, and techniques of theatre management and a survey of modern management techniques.  
* Prereq: 220 and 221; or permission of instructor.

602 Stage Management  
Principles, practices, and techniques of stage management, and a survey of modern management techniques.  
Au Qtr. 2-hr cl. Prereq: 220, 221, and 222; or permission of instructor.

610 Advanced Stage Directing  
Principles, techniques, and practice of advanced direction and integration of technical elements in theatrical production.  
Sp Qtr. 2-hr cl, Prereq: 310 or permission of instructor.

621.01 Theatre Graphics I  
An examination of drafting techniques and graphics presentation in relation to theatre design and technology.  
Au Qtr. Prereq: 220 or permission of instructor. Not open to students with credit for 621.

621.02 Theatre Graphics II  
An exploration of advanced techniques in theatre drafting and graphics, with an emphasis on 3D environments.  
Wi Qtr. Prereq: 621.01.

622 Metals as a Scenic Element  
Introduction to metal products and fabrication techniques for scenery and properties.  
* Wi Qtr. 2-hr cl. Prereq: 220 or permission of instructor.

623 Advanced Technical Production  
Consideration of methods and materials for stage rigging, mechanics, and non-traditional scenic materials.  
* Sp Qtr. 2-hr cl. Prereq: 220 or permission of instructor.

624 Technical Direction  
Study of technical direction and production management; budget, personnel, schedule, other logistic problems in technical production.  
* Sp Qtr. 2-hr cl. Prereq: 220, 221, and 222; or permission of instructor.

625 Lighting Design I  
A study of light as a design element for theatrical performance; analysis and preparation of designs for theatre applications.  
Au Qtr. 2-hr cl, Prereq: 220 and 221, or permission of instructor.

626 Sound in Theatre  
An examination of the art of sound design as well as an exploration of the craft of sound engineering for theatre.  
** Prereq: 221 or permission of instructor.

628 Lighting Production Technology  
An examination of the craft of theatre technology, with an emphasis on technical projects as associated with the responsibilities of a production electrician.  
Au Qtr. 2-hr labs. Prereq: 221.

633 Editorial Process  
Introduces theoretical and procedural basis for montage, controlling cinematic time, and understanding relationship of sound to image, including digital audio post-production.  
2-2-hr cl.

634 Video Production I  
An introduction to creative single camera video production—emphasis on performance, staging, and editing short video productions.  
Au, Wi Qtrs. 2-2-hr cl. Prereq: Permission of instructor.

635 Video Production II  
Continued exploration of creative single camera video production; topics may include documentary, drama, and experimental.  
Sp Qtr. 2-2-hr cl. Prereq: 634 or permission of instructor. Repeatable to a maximum of 10 cr hrs.

636 Screenwriting  
Exploration of creative script-writing for video/cinema; development of short or feature length scripts.  
2-2-hr cl. Prereq: Permission of instructor.

641 Stage Design Media  
Techniques of rendering for stage design in various media.  
Au Qtr. Prereq: Theatre grad standing or permission of instructor.

642 Scene Painting and Watercolor  
Techniques used in scene painting and watercolor; mixing and matching colors, rendering texture and form, elevating painter's elevations; types of paints used in scene painting.  
Sp Qtr. Prereq: 220 or 641, and grad standing in Theatre; or permission of instructor. Repeatable to a maximum of 6 cr hrs.

643 Stage Design I  
Investigation of 20th-century design and rendering techniques and their application to the stage experience in researching and designing projects.  
Au Qtr. 2 cl, 3 lab hrs, and indiv conferences. Prereq: 341 or Theatre grad standing or permission of instructor.

644 Intermediate Stage Design II  
Presentation of the design concept in three-dimensional media; emphasis on designing for nonproscenium production.  
Wi Qtr. 1-2-hr cl, 3 lab hrs. Prereq: 643 or permission of instructor.

645 Modern Stage Design Styles  
Study of the application of major stylistic trends in scenic design to modern theatrical productions through lecture-discussion and specific design projects.  
Sp Qtr. Arr. Prereq: 644 or permission of instructor.

646 Stage Properties  
Techniques in construction and design of stage properties, including production operation.  
* Sp Qtr. 2-2-hr cl. Prereq: 220 or Theatre grad standing or permission of instructor.

649 Period Style for Production I  
A survey of period styles, from ancient through baroque, for theatrical production with emphasis on architecture, clothing, furniture, jewelry, textiles and decorative objects.  
Au Qtr. 2-2-hr cl. Prereq: 2nd yr standing or permission of instructor.

650 Period Style for Production II  
A survey of period styles, from rococo to contemporary, for theatrical production with emphasis on architecture, clothing, furniture, jewelry, textiles and decorative objects.  
Wi Qtr. 2-2-hr cl. Prereq: 2nd yr standing or permission of instructor.

651 Intermediate Stage Costume Construction  
Methods of pattern development and construction techniques for creating historical stage costumes.  
Sp Qtr. 2 cl hrs, 2 lab hrs. Prereq: 222 or permission of instructor.

656 Costume Design for the Stage  
The study of the theories, principles, and process by which costumes are designed for a theatrical production.  
Sp Qtr. 2 cl. Prereq: 100 and 222 or permission of instructor.

660 Playwriting  
Laboratory course in playwriting; student plays developed from original idea through scenario into final production script with limited production of selected works.  
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

671 Theatre Topics I  
Topical studies in theatre and drama from classical Greece to the 17th century.  
Au Qtr. 2-2-hr cl. Prereq: 100 and jr or sr or grad standing. GEC third writing course.

672 Theatre Topics II  
Topical studies in theatre and drama from the 17th century through the rise of realism.  
Wi Qtr. 2-2-hr cl. Prereq: 100 and jr or sr or grad standing. GEC third writing course.

673 Theatre Topics III  
Topical studies in theatre and drama since the rise of realism.  
Sp Qtr. 2-2-hr cl. Prereq: 100 and jr or sr or grad standing. GEC third writing course.

674 Contemporary Theatre History  
Contemporary continental, English, and American theatre, post World War II to the present.  
2-2-hr cl. Prereq: 100 or jr or sr or grad standing. GEC third writing course.

675.01 Theater and Aging: Crones, Curmudgeons, and Living Treasures  
The history, theory, and literature of the Senior Theatre Movement, from its beginnings to the present from both theatrical and gerontological perspectives.  
Su Qtr. 1-4-hr cl. Also part of the graduate interdisciplinary certificate in aging.

675.02 Theater and Aging: The Practice of Theatre and Aging  
Practical exploration and creation of new work for Senior Theatre.  
Su Qtr. 1-4-hr cl. Also part of the graduate interdisciplinary certificate in aging.

680 Cinema/Video Scene Workshop I  
Exploration of directing talent and acting for single-camera style video/film production.  
3-2-hr cl. Prereq: Permission of instructor.

684.01 Outreach Theater: Creation of Outreach Theatre  
The creation, development and performance of interactive and instructional theatre for social awareness.  
Au, Wi, Sp Qtrs. 2-2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. Performance of work may occur outside listed class meeting time.

684.02 Outreach Theater: Performance Studies in Outreach Theatre  
Use of improvisational acting techniques to develop the performance of an outreach touring theatre production.  
Wi Qtrs. 2-3 cl. Prereq: Permission of Instructor. Repeatable to a maximum of 15 cr hrs.

685 Mime  
Study of techniques, styles, and presentation of the art of mime.  
* 2-2-hr cl. Repeatable to a maximum of 4 cr hrs.

686 Period Dance/Movement for Actors  
An introduction to and instruction in Western European dance movement since the 16th century  
* Au Qtr. 3-2-hr cl. Prereq. Permission of instructor.
687 Stage Combat UGRD 2
An introduction to and instruction in techniques of stage combat.
Sp Qtr. 3-2 hr. cl. Prereq: Permission of instructor.

688 Undergraduate New Works Lab UGRD 3
Designed to be taught with 687 and will serve undergraduate students who are ready to participate with graduate students in the creation of new works for the stage.
Wi Qtr. 2-2 hr. cl. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

689 Field Work in Theatre, Cinema, or Video UGRD 3-15
Planned production or management experience in an off-campus professional, educational, community theatre, film or video facility, or other agency under supervision.
Su, Au, Wi, Sp Qtrs. Prereq: Advanced undergraduate or grad standing or permission of adviser. Repeatable to a maximum of 15 cr hrs.

692 Workshops UGRD 1-15
Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it.
Prereq: Upper-division or grad standing and prior study and training in the theatre arts or written permission of workshop director. Repeatable to a maximum of 18 cr hrs.

693 Individual Studies UGRD 1-5
Conference, library, and laboratory work.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.
This course is graded S/U.

694 Group Studies UGRD 1-5
Group Studies.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

698.01 Study Tour: Domestic UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only.

698.02 Study Tour: Foreign UGRD 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only.

699 Undergraduate Scholarship: Research and Creative Activity in Theatre UGRD 1-15
Undergraduate research or creative activities in varying topics. 699H (honors) may be available
This course is graded S/U.

710 Advanced Script Analysis for the Actor GRAD 3
To learn to weave multiple methodologies into an integrated approach to script analysis and acting the role.
Wi Qtr. 2-2 hr. cl. Prereq: Grad standing in Theatre or permission of instructor.

725 Advanced Stage Lighting Design GRAD 3
Study and analysis of lighting design styles in relation to different forms of theatre arts; emphasis on practical problems.
Wi Qtr. 2-2 hr. cl. 3 lab hrs. Prereq: 625.

727 Advanced Lighting Technology GRAD 3
Study of current and future lighting technology in the area of control systems and stage lighting equipment as it applies to advanced lighting design.
Sp Qtr. 2-2 hr. cl. 625.

754 Digital and Physical Lighting GRAD 5
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: 625 or ArtCol 754. Cross-listed in ArtCol. Jointly taught by Theatre and The Advanced Computing Center for Art and Design. Offered every other year.

762 Theatre/Cinema Styles GRAD 5
Study and analysis of significant styles of production in the live theatre, cinema, and video.
Sp Qtr. 2-2 hr. cl. Prereq: Permission of instructor required of undergraduates.

771 Advanced Stage Movement Studio I GRAD 2
Fundamentals of movement; introduction to principles of movement for the actor.
Au Qtr. 4 cl. Prereq: Permission of instructor.

772 Advanced Stage Movement Studio II GRAD 2
Special problems in movement for the actor; beginning study of stylized techniques.
Wi Qtr. 4 cl. Prereq: 771 or permission of instructor.

773 Advanced Stage Movement Studio III GRAD 2
Special problems in movement for the actor; intermediate study of stylized techniques.
Sp Qtr. 4 cl. Prereq: 772 or permission of instructor.

775 Concepts and History of the Repertory/Ensemble GRAD 3
Theory and practice of the repertory/ensemble model in the theatre, cinema, and video of the twentieth century.
2-2 hr. cl. Prereq: Grad standing in theatre or permission of instructor.

777 Studies in the Documentary UGRD 3
Conceptual, aesthetic, critical, social, ethical, practical issues in the practice of documentary and docudrama production of cinema and video works.
2-2 hr. cl. 1 lab. Prereq: Permission of instructor.

780 Advanced Acting Studio I GRAD 3
Introduction to acting techniques, focusing on believability, impulse, and partnering.
Au Qtr. 3-2 hr. cl. Prereq: Permission of instructor.

781 Advanced Acting Studio II GRAD 3
Development of techniques for acting in realistic plays.
Wi Qtr. 3-2 hr. cl. Prereq: 780 or permission of instructor.

782 Advanced Acting Studio III GRAD 3
Development of expanded techniques for acting in stylized plays.
Sp Qtr. 3-2 hr. cl. Prereq: 781 or permission of instructor.

783H Honors Research UGRD 3-5
An individual program of study, with conferences, reports, and honors thesis.
Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing; a grade of A in at least half of the theatre 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 Honors Committee whichever is relevant to the student's program. Repeatable to a maximum of 15 cr hrs. Failure to receive a mark of S in this course is a disqualification for special honors. This course is graded S/U.

785 Advanced Speech and Voice Studio II GRAD 2
Vocal technique for the actor focusing on breathing techniques.
Au Qtr. 4 cl. Prereq: Permission of instructor.

787 Advanced Speech and Voice Studio III GRAD 2
Vocal technique for the actor focusing on aspects of vocal production.
Wi Qtr. 4 cl. Prereq: 786 or permission of instructor.

788 Advanced Speech and Voice Studio IV GRAD 2
Vocal technique for the actor focusing on articulation of speech.
Sp Qtr. 4 cl. Prereq: 787 or permission of instructor.

800.01 Advanced Studies: Stage Direction/Management GRAD 3-5
Stage Direction/Management.
Repeatable to a maximum of 40 cr hrs in any combination of decimal subdivisions.

800.02 Advanced Studies: Technical Production/Lighting GRAD 3-5
Technical Production/Lighting.
Repeatable to a maximum of 40 cr hrs in any combination of decimal subdivisions.

800.03 Advanced Studies: Dramatic Literature GRAD 3-5
Dramatic Literature.
Repeatable to a maximum of 40 cr hrs in any combination of decimal subdivisions.

800.04 Advanced Studies: Stage Design GRAD 3-5
Stage Design.
Repeatable to a maximum of 40 cr hrs in any combination of decimal subdivisions.

800.05 Advanced Studies: Costuming/Makeup GRAD 3-5
Costuming/Makeup.
Repeatable to a maximum of 40 cr hrs in any combination of decimal subdivisions.

800.06 Advanced Studies: Criticism, Theory, Playwriting GRAD 3-5
Criticism, Theory, Playwriting.
Repeatable to a maximum of 40 cr hrs in any combination of decimal subdivisions.

800.07 Advanced Studies: History GRAD 3-5
History.
Repeatable to a maximum of 40 cr hrs in any combination of decimal subdivisions.

800.08 Advanced Studies: Acting GRAD 3-5
Acting.
Repeatable to a maximum of 40 cr hrs in any combination of decimal subdivisions.

800.09 Advanced Studies: Theatre Management GRAD 3-5
Theatre Management.
Repeatable to a maximum of 40 cr hrs in any combination of decimal subdivisions.

801 Research Methods GRAD 5
Introduction to graduate study; methods and tools of research in all areas of theatre and cinema/video.
Au Qtr. 2-2 hr. cl. Prereq: Grad standing or permission of instructor.

802.03 Seminar: Dramatic Literature GRAD 2-5
Dramatic Literature.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 40 cr hrs in any combination of decimal subdivisions.

805.01 Graduate Theater Practicum: Stage Management GRAD 1-5
Individual theatrical performance and production activities at an advanced level under faculty supervision.
Prereq: Permission of instructor. Repeatable to a maximum of 40 cr hrs.
420 Theatre

805.02 Graduate Theater Practicum: Technical Production GRAD 1-5
Individual theatrical performance and production activities at an advanced level under faculty supervision.
Prereq: Permission of instructor. Repeatable to a maximum of 40 cr hrs.

805.03 Graduate Theater Practicum: Dramaturgy GRAD 1-5
Individual theatrical performance and production activities at an advanced level under faculty supervision.
Prereq: Permission of instructor. Repeatable to a maximum of 40 cr hrs.

805.04 Graduate Theater Practicum: Stage Design GRAD 1-5
Individual theatrical performance and production activities at an advanced level under faculty supervision.
Prereq: Permission of instructor. Repeatable to a maximum of 40 cr hrs.

805.05 Graduate Theater Practicum: Costuming/Makeup GRAD 1-5
Individual theatrical performance and production activities at an advanced level under faculty supervision.
Prereq: Permission of instructor. Repeatable to a maximum of 40 cr hrs.

805.07 Graduate Theater Practicum: Stage Direction GRAD 1-5
Individual theatrical performance and production activities at an advanced level under faculty supervision.
Prereq: Permission of instructor. Repeatable to a maximum of 40 cr hrs.

805.12 Graduate Theater Practicum: Lighting GRAD 1-5
Individual theatrical performance and production activities at an advanced level under faculty supervision.
Prereq: Permission of instructor. Repeatable to a maximum of 40 cr hrs.

813 Cinema/Video Sketchbook I GRAD 3
Exploration of sketchbook approach to research and development of creative cinema/video projects.
2 2-hr cl. Prereq: Permission of instructor.

814 Cinema/Video Sketchbook II GRAD 3
Continued examination of creative approach to cinema/video idea development with introduction of actors to the process.
2 2-hr cl. Prereq: 813 or permission of instructor.

825 Advanced Stage Lighting Design II GRAD 3
Advanced study of lighting design and its creative application to modern theatre practice.

833 Modern Drama GRAD 5
Studies in drama from the late 19th century to the present.
* Wi Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor.

834 Contemporary Drama GRAD 5
Consideration of the most significant dramatists since 1975.
* Wi Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor.

845 Advanced Scene Design GRAD 3
Study of historic and modern scene design and application to modern theatrical stage practices in executing creative and interpretive project designs.

855 Advanced Stage Costume Design GRAD 3
Theory, methods, and materials of costume design with emphasis on design problems for the stage.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

864 Theatre Criticism I GRAD 5
Critical theory of the theatre: classical to neoclassical.
* Au Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor. Not open to students with credit for 860.

865 Theatre Criticism II GRAD 5
Critical theory of the theatre: 17th, 18th, and 19th centuries.
* Wi Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor. Not open to students with credit for 861.

866 Theatre Criticism III GRAD 5
* Sp Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor. Not open to students with credit for 863.
986 Projects in Acting GRAD 5
Special projects in rehearsal and performance tied to departmental productions. Au, Wi, Sp Qtr. 3-4 hr and 6-8 hr rehearsals. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.
987.01 New Works Lab: Devising: Techniques for Creating New Work
Laboratory in performer-created works. Creation of solo and group work from multiple sources, giving equal value to text, action, and design: lighting, scenery, costume, and sound. Prereq: Grad standing in Theatre or permission of instructor.
987.02 New Works Lab: Outreach and Engagement GRAD 3
Laboratory in performer-created works. Exploration of the collaborative outreach and engagement process in the development of an original ensemble creation which will emphasize community themes in a service-learning capacity. Prereq: Grad standing in Theatre or permission of instructor. Repeatable to a maximum of 6 cr hrs.
987.03 New Works Lab: Site-Specific Solo Projects GRAD 3
Laboratory in performer-created works. Examination of the history of site-specific performance, selection of sites and creation of a performance work that is informed by the site. Prereq: Grad standing in Theatre or permission of instructor.
995 Proseminar GRAD 1
Reading, directed study, and/or projects in theatre history, criticism, literature, acting, directing, and/or design. Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.
998 Research in Theatre: Thesis GRAD 1-6
Research for thesis purposes only. Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.
999 Research in Theatre: Dissertation GRAD 1-18
Research for dissertation purposes only. Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

**Tibetan**

101 Introductory Colloquial/Modern Tibetan I UGRD 5
Instruction in how to speak, read and write modern colloquial Tibetan based on Standard (Central) Tibetan pronunciation. Au Qtr.
102 Introductory Colloquial/Modern Tibetan II UGRD 5
Instruction in how to speak, read and write modern colloquial Tibetan based on Standard (Central) Tibetan pronunciation. Wi Qtr. Prereq: 101.
103 Introductory Colloquial/Modern Tibetan III UGRD 5
Instruction in how to speak, read and write modern colloquial Tibetan based on Standard (Central) Tibetan pronunciation. Sp Qtr. Prereq: 101 and 102.
104 Advanced Colloquial/Modern Tibetan I UGRD 5
Builds on the foundations of knowledge of colloquial Tibetan, teaching students to speak, read and write modern colloquial Tibetan with Standard Tibetan pronunciation. Au Qtr. Prereq: 101, 102 and 103.
205 Advanced Colloquial/Modern Tibetan II UGRD 5
Builds on the foundations of knowledge of colloquial Tibetan, teaching students to speak, read and write modern colloquial Tibetan with Standard Tibetan pronunciation. Wi Qtr. Prereq: 101, 102, 103 and 104.
206 Advanced Colloquial/Modern Tibetan III UGRD 5
Builds on the foundations of knowledge of colloquial Tibetan, teaching students to speak, read and write modern colloquial Tibetan based on Standard Tibetan pronunciation. Sp Qtr. Prereq: 101, 102, 103, 104, 205.
601 Introductory Literary/Classical Tibetan I UGRD 5
Introduces the basics of the classical Tibetan language, including the Tibetan script, pronunciation and grammar. Au Qtr.
602 Intro Literary/Classical Tibetan II UGRD 5
Introduces the basics of the classical Tibetan language, including important aspects of grammar and the conventions of commentarial literature. Wi Qtr. Prereq: 601.
603 Introductory Literary/Classical Tibetan III UGRD 5
Enables students to begin reading original texts and learn about particularities of punctuation, transliterations from Sanskrit/Chinese, grammar, and rhetorical features. Sp Qtr. Prereq: 601 and 602.
604 Advanced Literary/Classical Tibetan I UGRD 5
Builds on the foundations of knowledge of classical/literary Tibetan through guided readings of original Tibetan texts. Au Qtr. Prereq: 601, 602 and 603.
605 Advanced Literary/Classical Tibetan II UGRD 5
Builds on the foundations of knowledge of classical/literary Tibetan through guided readings of original Tibetan texts. Wi Qtr. Prereq: 601, 602, 603 and 604.
606 Advanced Literary/Classical Tibetan III UGRD 5
Builds on the foundations of knowledge of classical/literary Tibetan through guided readings of original Tibetan texts. Sp Qtr. Prereq: 601, 602, 603, 604 and 605.

**Turkish**

101 Elementary Turkish I UGRD 5
Introduction to Turkish; development of listening, reading, speaking, and writing skills. Au Qtr. 5 cl. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course. FL Admis Cond course.
102 Elementary Turkish II UGRD 5
Further development of listening, reading, speaking, and writing skills. Wi Qtr. Prereq: 101. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course. FL Admis Cond course.
103 Elementary Turkish III UGRD 5
Development of listening, reading, speaking, and writing skills; reading of simplified literary texts about Turkish culture. Sp Qtr. Prereq: 102. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course.
104 Intermediate Turkish I UGRD 5
Reading of Turkish short stories and poems with attention to literary and cultural appreciation; development of basic language skills. Au Qtr. 5 cl. Prereq: 103. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course.
201 Intermediate Turkish II UGRD 5
Extensive reading from literary texts, with practice in conversation and composition. 2 2-hr cl. Prereq: 104 or equiv.
202 Intermediate Turkish III UGRD 5
The study of nineteenth- and twentieth-century literary texts, with further practice in composition and translation. 2 2-hr cl. Prereq: 201 or 401 or equiv.
241 Turkish Culture UGRD 5
An introduction to Turkish culture through reading of literary and criticism, and listening and viewing of films, slides, and performances arranged for the class. Wi Qtr. 5 cl. GEC arts and hums cultures and ideas and social diversity - international issues (Global) course.
293 Individual Studies UGRD 1-5
Individual Studies. Su, Au, Wi, Sp Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.
294 Group Studies UGRD 1-5
Special topics announced in the quarter previous to the one in which the course is offered. Au, Wi, Sp Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. 371 Turkish Sufism UGRD 5
An introduction to the literature, forms of thought, and institutions of Turkish Sufism. Prereq: English 110 or 111 or equiv. No knowledge of Turkish required. GEC arts and hums lit and social diversity - international issues (Global) course.
372 Turkish Literature in Translation UGRD 5
A study of Turkish literature and the history of its discourses, genres, and styles. Prereq: English 110, 110.01, 110.02, 110.03 or equiv. GEC arts and hums lit and social diversity - international issues (Global) course.
610 Ottoman Orthography, Conventions, and Style UGRD 5
Usage and syntax in the old Turkish script, 14th through 20th centuries. Prereq: One course in Turkish at the 200-level or above, or permission of instructor.
627 Classical Turkish Poetry UGRD 5
Reading and analysis of Turkish poetry of the 13th through 18th centuries; Turkish metrics and literary theory. Prereq: 402 or permission of instructor.
641 Travels in Turkey UGRD 5
Turkish culture seen through the eyes of travellers writing in English. Prereq: 241 or 372 or permission of instructor. No knowledge of Turkish required.
651 Modern Turkish Poetry and Prose UGRD 5
Selected topics in poetry and prose of the 20th century; conducted in Turkish. Prereq: 402 or permission of instructor.
**Turkish**

693 Individual Studies UGRD 1-5
Individual Studies.
Su, Au, Wi, Sp Gtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

694 Group Studies UGRD 1-5
Special topics announced in the quarter previous to the one in which the course is offered.
Su, Au, Wi, Sp Gtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

697 Study at a Foreign Institution UGRD 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Gtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This course is Progress (P) graded. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

721 Studies in Turkish and Ottoman Literature and Criticism UGRD 5
Movements, authors, and critical schools of Turkish and Ottoman poetry and prose.
Prereq: 10 cr hrs of Turkish literature at the 600 level or equiv, or permission of instructor. Repeatable to a maximum of 15 cr hrs.

783H Honors Research UGRD 3-5
A program of research for each student which includes individual conferences and which culminates in an honors thesis or oral defense.
Su, Au, Wi, Sp Gtrs. Arr. Prereq: Approved candidacy for graduation with distinction, which includes faculty adviser and ASC Honors Committee approval of project, a minimum 3.50 p-hr ratio in the field of distinction, or standing, and CPHRT commensurate with honors program membership. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

811 Seminar in Turkish and Ottoman Studies GRAD 5
Intensive study of a specific topic in literary and intellectual culture; preparation of final paper required.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

998 Research in Turkish GRAD 1-10
Research for thesis purposes only.
Su, Au, Wi, Sp Gtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**Twi Language**

101 Elementary Twi I UGRD 5
Development of oral proficiency in elementary conversational Twi using a competency-based approach.
* GEC for lang course.

102 Elementary Twi II UGRD 5
Continuation of 101; development of aural and oral skills in elementary conversational Twi using a competency-based approach.
* 5 cr. Prereq: 101. GEC for lang course.

103 Intermediate Twi I UGRD 5
Continuation of 102; further development of listening and speaking skills; introduction of reading as a basis for more oral practice.
* 5 cr. Prereq: 102. GEC for lang course.

104 Intermediate Twi II UGRD 5
Continuation of 103; reading and comprehension exercises; reading from authentic texts.
* 5 cr. Prereq: 103. GEC for lang course.

**Ukrainian**

101.51 Elementary Ukrainian I: Individualized Track UGRD 1-5
Development of oral and written language skills.
* Not open to native speakers of this language through regular course enrollment or EM credit.
FL Admis Cond course. GEC for lang course. Repeatable to a maximum of 5 cr hrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 102.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 60% required for advancement. Students may register for 102.51 and 103.51 concurrently with permission of instructor. GEC for lang course.

201 Intermediate Ukrainian II: Individualized Track UGRD 1-5
Continuation of 103.51; development of the four skills.
* Prereq: 5 cr hrs of 103.51 or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. Repeatable to a maximum of 5 or cr hrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 103.51 and 104.51 concurrently with permission of instructor. GEC for lang course.

**Uzbek**

101 Elementary Uzbek I UGRD 5
Introduction to Uzbek language; development of listening, reading, speaking, and writing skills.
Su Qtr. 2 2-hr cl. Prereq: Permission of instructor. Not open to students with credit for EEurLL 671D. GEC for lang course.

102 Elementary Uzbek II UGRD 5
Continued study of Uzbek language, with appropriate cultural background; further development of listening, reading, speaking, and writing skills.
Wi Qtr. 2 2-hr cl. Prereq: 101 or permission of instructor. Not open to students with credit for EEurLL 671B (Wi 03, Wi 04, Wi 05). GEC for lang course.

103 Elementary Uzbek III UGRD 5
Continued study of Uzbek language, with appropriate cultural background; further development of listening, reading, speaking, and writing skills.
Sp Qtr. 2 2-hr cl. Prereq: 102 or permission of instructor. Not open to students with credit for EEurLL 671C (Sp 03, Sp 04) or 294A (Sp 05). GEC for lang course.

104 Intermediate Uzbek I UGRD 5
Continued study of Uzbek language, with appropriate cultural background; further development of listening, reading, speaking, and writing skills.
Au Qtr. 2 2-hr cl. Prereq: 103 or permission of instructor. GEC for lang course.

**Urdu**

101 Elementary Urdu I UGRD 5
Study of Urdu language, with appropriate cultural background; development of listening, reading, speaking, and writing skills.
Au Qtr. 2 2-hr cl. Prereq: Permission of instructor. Not open to students with credit for NELC 249B (Au 02, Au 03) or 294J (Au 04). GEC for lang course.

102 Elementary Urdu II UGRD 5
Continued study of Urdu language, with appropriate cultural background; further development of listening, reading, speaking, and writing skills.
Wi Qtr. 2 2-hr cl. Prereq: 101 or permission of instructor. Not open to students with credit for NELC 249B (Wi 03, Wi 04, Wi 05). GEC for lang course.

103 Elementary Urdu III UGRD 5
Continued study of Urdu language, with appropriate cultural background; further development of listening, reading, speaking, and writing skills.
Sp Qtr. 2 2-hr cl. Prereq: 102 or permission of instructor. Not open to students with credit for NELC 249C (Sp 03, Sp 04) or 294A (Sp 05). GEC for lang course.

104 Intermediate Urdu I UGRD 5
Continued study of Urdu language, with appropriate cultural background; further development of listening, reading, speaking, and writing skills.
Au Qtr. 2 2-hr cl. Prereq: 103 or permission of instructor. GEC for lang course.

**Undergraduate Student Academic Services**

100.11 Arts and Sciences Survey UGRD 1
Introduction to the University community; strategies for successful transition to and participation in that community; institutional context of academic programs; education and learning as lifelong processes; University resources and procedures. 100H (honors) decimal subdivisions may be available.
Not open to students with credit for Agr 100, Arch 100, ArtsCol 100, ArtsSci 100, BioSci 100, BusAdm 100, Engineer 100, HumCol 100, MPSCol 100, Nursing 100, SBSCol 100, or Scholars 100. Students schedule a section of University Survey corresponding to their curricular academic program.

100.21 Exploration Survey UGRD 1
Introduction to the University community; strategies for successful transition to and participation in that community; institutional context of academic programs; education and learning as lifelong processes; University resources and procedures. 100H (honors) decimal subdivisions may be available.
Not open to students with credit for Agr 100, Arch 100, ArtsCol 100, ArtsSci 100, BioSci 100, BusAdm 100, Engineer 100, HumCol 100, MPSCol 100, Nursing 100, SBSCol 100, or Scholars 100. Students schedule a section of University Survey corresponding to their curricular academic program.

201 Intermediate Uzbek II UGRD 5
Extensive reading from literary texts, with practice in conversation and composition.
Prereq: 104 or permission of instructor.
640 Fundamentals of Oncology  
Lecture/seminars covering aspects of oncology: chemical and biologic carcinogenesis, epidemiology, genetics, development, diagnosis, clinical features, treatment, and therapy.  
* Wi Qtr. Prereq: Permission of instructor. Not open to students with credit for VetPath 640. Offered in cooperation with Pathology.

693 Individual Studies  
Laboratory, library, conference, and reports concerning animal disease problems.  
* Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 50 cr hrs. This course is graded S/U.

696 Advanced Studies in Veterinary Biosciences  
Advanced studies in various topics in the fields of Veterinary Biosciences.  
Su, Au, Wi, Sp Qtrs. Arr. Prereq: VetMed or Grad standing. Repeatable to a maximum of 20 cr hrs. This course is graded A-E.

700 Applied Functional Neuroanatomy I  
Study of structure and function of autonomic, peripheral, and central nervous systems of infraprimates, with references to primates, as related to clinical neurology, neuropathology, neurosurgery, or neuropsychologic research.  
Wi Qtr. 3 cl. Prereq: VMColl 603, CBNAAnat 704 or equiv, and permission of dept. Not open to students with credit for VetACB 700.

710 Applied Veterinary Clinical Pathology  
Designed to familiarize the veterinary student with the preparation and cytologic interpretation of blood films, body cavity fluids, and tissue aspirates and imprints.  
Su, Wi, Sp Qtrs. 1 cl. Prereq: VetMed 2nd, 3rd or 4th yr standing who have completed VMColl 618.

711 Basic Macroscopic Pathology  
Interpretation of macroscopic tissue changes in diseases of domestic and exotic animal species, with correlation to pathogenesis.  
Sp Qtr. Prereq: Permission of instructor. Not open to students with credit for VetPath 796.01.

715 Applied Veterinary Medical Micrology  
Major viral pathogens of domestic animals are discussed and illustrated; principles of virology applicable to the recognition, differentiation, and prevention of diseases of animals are presented.  
Sp Qtr. Prereq: Permission of instructor. Not open to students with credit for VetPath 796.05.

717 Current Topics of Veterinary Immunology  
Discussion of modern topics in immunology as it relates to domestic animals.  
Not open to students with credit for Vet Path 796.07.

718 Advanced Gross Pathology  
Advanced training in gross dissection and interpretation of gross lesions in animals.  
Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing in VetMed. Not open to students with credit for VetPath 796.08. Repeatable to a maximum of 5 cr hrs.

719 Basic Histopathology  
Interpretation of basic histopathologic tissue changes in diseases of domestic and exotic animal species, with correlation to pathogenesis.  
Wi Qtr. Prereq: 2nd yr and standing. Not open to students with credit for VetPath 796.09. Each student will be provided with a microscopic slide study set and a microscope.

720 Introduction to Applied Pathology  
Correlation of macroscopic and histologic findings in diseases of domestic and exotic animal species, and the use of these findings in deducting pathogenesis.  
Sp Qtr. 1-hr cl, 2-hr lab (Sat). Prereq: VetMed 1st yr standing.

721 Laboratory Lab Animal Medicine  
This course will give an introduction into the basics of laboratory animal medicine. This knowledge can help to design better experiments.

722 Comparative Medicine Topics  
For veterinary students, graduate students, and laboratory animal medicine residents.  
Literature about topics relevant to laboratory animal medicine will be reviewed and discussed. This course is graded S/U.

723 Anatomic Pathology (Applied Pathology)  
Physical participation in gross and microscopic post mortem evaluation of case material or research projects involving pathogenesis of disease.  
Prereq: 4th Year Vet student. This course is graded S/U.

724 Veterinary Biosciences Clinical Pathology  
To provide increased experience in the interpretation of a wide variety of clinical pathology testing with emphasis on management of clinical patients.  
Prereq: 4th year Vet student. This course is graded S/U.
Veterinary Biosciences

801 Anatomical Techniques GRAD 2-5
Theory and practice of macroscopic, microscopic, and scanning electron microscopic methods, including specimen preparation for microrculation studies, fixing, embedding, sectioning, mounting, and staining of animal tissue. Special emphasis is placed upon techniques for the preparation of microcircumcision casts for SEM study.
Su, Au, Wi, Sp Qtrs. 1 cl, 6-15 lab hrs. Prereq: VMColl 521, 531 or equiv and permission of instructor. Not open to students with credit for VetACB 801. Repeatable to a maximum of 15 cr hrs.

802.01 Advanced Veterinary Anatomy: Limbs and Back GRAD 3-5
Domestic Animals
Advanced topographical anatomy of domestic animals studied by lecture, prossection, and dissection.
Prereq: VetMed 3rd yr standing, veterinary gross anatomy, and permission of instructor. Not open to students with credit for VetACB 802.01.

802.02 Advanced Veterinary Anatomy: Head and Neck GRAD 3-5
Domestic Animals
Advanced topographical anatomy of domestic animals studied by lecture, prossection, and dissection.
Prereq: VetMed 3rd yr standing, veterinary gross anatomy, and permission of instructor. Not open to students with credit for VetACB 802.02.

802.03 Advanced Veterinary Anatomy: Thorax, Abdomen, and Pelvis of Domestic Animals GRAD 3-5
Advanced topographical anatomy of domestic animals studied by lecture, prossection, and dissection.
Prereq: VetMed 3rd yr standing, veterinary gross anatomy, and permission of instructor. Not open to students with credit for VetACB 802.03.

803 Muscle Biology and Ultrastructure GRAD 3-5
Structural basis of muscle contraction explored through application of methodology for myofibrillar protein isolation and characterization through electron microscopy.
Wi Qtr. 1.2 hr cl, 1.3 hr lab. Prereq: Permission of instructor. Not open to students with credit to VetACB 803. Repeatable to a maximum of 15 cr hrs.

810 Advanced Systemic Pathology I GRAD 3-5
An advanced study of animal diseases as they affect all organ systems of the body.
* Au Qtr. Prereq: Permission of instructor. Not open to students with credit for VetPath 810.

811 Advanced Systemic Pathology II GRAD 3-5
Advanced study of animal diseases as they affect all organ systems of the body.
Wi Qtr. 3.2 hr cl. Prereq: 810. Not open to students with credit for VetPath 811.

812 Advanced Systemic Pathology III GRAD 3-5
Advanced study of animal diseases as they affect all organ systems of the body.
Sp Qtr. 3.2 hr cl. Prereq: 810 and 811. Not open to students with credit for VetPath 812.

815 Veterinary Surgical Pathology GRAD 3-5
Biopsy methods and diagnosis; surgical specimens are studied, and emphasis is placed upon the correlation of lesions and functional pathology.
Su, Au, Wi, Sp Qtrs. 3.2 hr cl. Prereq: Enrollment in grad program in VetPath; DVM and experience in basic histopathology. Not open to students with credit for VetPath 815. Repeatable to a maximum of 40 cr hrs.

841 Viral Pathogenesis and Oncogenesis GRAD 5
Cellular, immunological and molecular mechanisms involved with virus pathogenesis in animals/humans.
Au Qtr. 5 cl. Prereq: MedMicr 701 or equiv and MedMicr 754. Not open to students with credit for VetPath 841 or MedMicr 841. Cross-listed in Medical Microbiology and Immunology.

850 Research Seminar in Veterinary Biosciences GRAD 1
Presentation of new scientific knowledge in lectures and conferences by faculty and graduate students.
Au, Wi, Sp Qtrs. 1 cl. Prereq: Grad or professional standing in VetBios. Repeatable to a maximum of 16 cr hrs. This course is graded S/U.

851 Teaching in the Veterinary Curriculum GRAD 3
Reviews pedagogical principles and practices to be used when designing, preparing and delivering courses within a professional veterinary curriculum.
Wi Qtr. 2 hr d. Prereq: Grad standing in College of Veterinary Medicine or permission of instructor. This course is graded S/U.

852 Hematology Case Discussion VMED 1
This course is a discussion of laboratory data from clinical cases in an interactive small group setting. The focus is on hematology.
Wi Qtr. Prereq: 2nd or 3rd Year DVM student or Graduate Student.

855 Techniques in Veterinary Molecular Medicine VMED 3
Didactic instruction and hands-on experience performing molecular and genetic research techniques while learning their applications in clinical veterinary medicine.
Sp Qtr. Prereq: Biology 113 and 114 (or equiv) and Biochem 511 (or equiv). Priority will be given to first-year veterinary students, followed by second-year veterinary students.

880.07 Research Seminar: Gene Expression: Post-Transcriptional Control GRAD 3
Intensive study of problems in graduate fields of specialization.
Gene Expression: Post-Transcriptional Control.
Sp Qtr. 3 cl. Prereq: 10 grad hrs or permission of instructor. Not open to students with credit for MolGen 880.07 or MolBioch 880.07. Repeatable to a maximum of 30 cr hrs. Cross-listed in Molecular Genetics and Molecular and Cellular Biochemistry.

999 Research in Veterinary Biosciences GRAD 1-18
Research for dissertation or thesis purposes only.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable. This course is graded S/U.

Veterinary Clinical Sciences

622.01 Advanced Equine Medical and Surgical Procedures VMED 1
Tracheal wash, thoracocentesis, CFS samples, bone marrow biopsies, epidural anesthesia, endoscopy, nerve blocks, castrations, arthrocentesis, tracheotomy, and cast applications.
Prereq: VetMed 4th yr standing. Arranged into an elective program in conjunction with a faculty adviser. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

710.01 Community Practice VMED 3
Clinical instruction designed to improve the student's proficiency in client relations, diagnosis, treatment, and prevention of diseases in out-patients.
Prereq: VetMed 4th yr standing. Arranged into an elective program in conjunction with a faculty adviser. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

710.02 Small Animal Internal Medicine VMED 3
Clinical instruction and experience in the diagnosis and management of dogs and cats with internal medicine problems and diseases.
Prereq: VetMed 4th yr standing. Arranged into an elective program in conjunction with a faculty adviser. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

710.03 Applied Veterinary Medicine Options: Small Animal Surgery VMED 3
The application of principles of surgery to treatment of diseases of companion animals.
Prereq: VetMed 4th yr standing. Arranged into an elective program in conjunction with a faculty adviser. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

710.04 Applied Veterinary Medicine Options: Food Animal Medicine and Surgery VMED 1-5
Clinical instruction and experience in the diagnosis, treatment, and prevention of diseases of food animals.
Prereq: VetMed 4th yr standing. Arranged into an elective program in conjunction with a faculty adviser. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

710.05 Applied Veterinary Medicine Options: Equine Medicine and Surgery VMED 1-5
Clinical instruction and experience in the diagnosis, treatment, and prevention of diseases of the horse.
Prereq: VetMed 4th yr standing. Arranged into an elective program in conjunction with a faculty adviser. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

710.06 Applied Veterinary Medicine Options: Field Service VMED 1-5
The application of the principles of management, diagnosis, treatment, and prevention of disease in farm and exotic animals in the environment in which they are produced. Field trips to facilities for patient care, case discussions, seminars, and 24-hr patient care responsibilities.
Prereq: VetMed 4th yr standing. Arranged into an elective program in conjunction with a faculty adviser. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

710.07 Veterinary Clinical Radiology VMED 3
Develop abilities to methodically interpret radiographs and recognize normal and abnormal radiographic findings. Formulate reasonable conclusions/diagnoses, based on radiographic findings and known case information.
Prereq: VetMed 4th yr standing. Arranged into an elective program in conjunction with a faculty adviser. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

710.08 Applied Veterinary Medicine Options: Clinical Microbiology VMED 1-5
Assignment of patients for in-depth study of diagnosis and course of disease with emphasis on selection and interpretation of laboratory parameters; emphasis on microbiologic and immunologic methods for diagnosis and evaluation of infectious disease.
Prereq: VetMed 4th yr standing. Arranged into an elective program in conjunction with a faculty adviser. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.
710.09 Applied Veterinary Medicine Options: Clinical—Anaesthesiology
The application of principles of anaesthesiology.
Prereq: VetMed 4th yr standing. Arranged into an elective program in conjunction with a faculty adviser. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

710.11 Small Animal Emergency/Critical Care
Application of principles of diagnosis, therapy, and management of patients with acute or critical illness.
Prereq: Vet Med 4th year standing. This course is graded S/U.

710.12 Applied Veterinary Medicine Options: Veterinary—Clinical Ophthalmology
Application of principles of diagnosis and treatment of diseases of the eye to patients of all species.
Prereq: VetMed 4th yr standing. Arranged into an elective program in conjunction with a faculty adviser. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

710.13 Applied Veterinary Medicine Options: Applied—Theriogenology
Application of principles of diagnosis, treatment, and prevention of diseases of the reproductive system of all species.
Sp Qtr: Prereq: VetMed 4th yr standing. Arranged into an elective program in conjunction with a faculty adviser. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

710.22 Clinical Oncology and Hematology
Hands-on experience in managing the small animal patient with hematologic, oncologic, or immunologic disorders. Also, to gain knowledge on Greyhound medicine and transfusion medicine.
Prereq: 4th Year Vet student. This course is graded S/U.

710.23 Veterinary Clinical Radiology: Ultrasound
Learn to recognize normal and abnormal sonographic findings. Develop thought process and understanding to formulate reasonable conclusions or diagnosis based on ultrasound findings and case information.
Prereq: 4th year Veterinary student. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

710.24 Radiation Oncology
Elective course of a two week clinical rotation on the Radiation Oncology service.
Prereq: 4th year Veterinary student. This course is graded S/U.

718 Clinical Problem Solving and Treatment in Small Animal Internal Medicine I
Problem-oriented course using case discussions to teach the diagnostic and therapeutic approach to the most common clinical problems in small animal internal medicine.
Au Qtr. 3 cl. Prereq: VetMed 3rd yr standing.

719 Clinical Problem Solving and Treatment in Small Animal Internal Medicine II
Problem-oriented course using case discussions to teach the diagnostic and therapeutic approach to the most common clinical problems in small animal internal medicine.
Wi Qtr. 3 cl. Prereq: VetMed 3rd yr standing.

720.01 Introduction to Veterinary Clinical Nutrition
Basic animal nutrition and feeding and nutrition-related problems.
Au, Wi Qtrs. 2 cl. Prereq: VetMed 2nd yr standing or permission of instructor. This course is graded S/U.

721 Veterinary Acupuncture
Practical approaches to diagnosis and treatment of clinical cases (dog, cat, horse, cow) by acupuncture in animals in the veterinary hospital.
Sp Qtr. 1 cl. Prereq: Permission of instructor. This course is graded S/U.

722 Clinical Problems in Small Animal Cardiology
This course will increase skills in physical exam, radiographic and electrocardiographic interpretation of common cardiovascular diseases in a small group setting.
Wi Qtr. 1 cl. Prereq: VetMed 2nd or 3rd yr standing. This course is graded S/U.

723 Emergency/Critical Care Volunteer Program
Offers students the opportunity to observe daily caseload of emergency/critical care service while volunteering.
Au, Wi, Sp Qtr. 2-3 hr shifts and 12-1 hr rounds sessions. Prereq: Au, Wi: VetMed 2nd or 3rd yr standing; Sp: VetMed 1st or 2nd yr standing. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

724 Topics in Feline Medicine and Surgery
To provide third and fourth year veterinary students with information on selected medical and surgical topics unique to the cat.
Wi Qtr. 2 cl. Prereq: VetMed 3rd or 4th yr standing. Professional students only. Not repeatable. This course is graded S/U.

725 Canine and Feline Dentistry
Lectures, demonstrations, and laboratories covering prophylactic care, and extraction of teeth, endodontic and prosthodontic therapy.
Wi, Sp Qtrs. Prereq: VetMed 4th yr standing or permission of instructor.

726 Advanced Practice: Client Communication
Provides an applied learning environment for students to develop advanced client communication skills.
Au, Wi, Sp Qtrs. Prereq: VetMed 4th yr standing. This course is graded S/U.

727 Companion Bird Medicine and Surgery
All aspects of companion bird medicine, including husbandry, nutrition, pediatrics, diagnostic and therapeutic techniques, disease problems, radiology, anesthesia and surgery. Emphasis placed on psittacine species.
Au Qtr. 3 cl. Prereq: VetMed 3rd yr standing or written permission of instructor.

728 Clinical Endocrinology
To familiarize pre-clinical veterinary students with the clinical presentation, laboratory abnormalities and treatment of common endocrine disorders of dogs and cats.
Au, Wi Qtrs. Prereq: VetMed 3rd yr standing. This course is graded S/U.

729 Pet Loss Education and Grief Support
An applied learning environment for students to develop introductory client communication, grief education, and grief support skills.
Au, Wi, Sp Qtrs. 5-hr seminar and 2-3 hr shifts for ea credit. Prereq: Au, Wi: VetMed 2nd, 3rd, or 4th yr standing; Sp: VetMed 1st, 2nd, or 4th yr standing. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

732 Equine Lameness and Gait Abnormalities
To acquaint the student with conditions of the horse that produce gait abnormalities as the presenting clinical complaint.
Wi Qtr. 2 cl. Prereq: VetMed 3rd yr standing. Repeatable to a maximum of 4 cr hrs.

733 Equine Medicine and Surgery
A course to provide professional students with knowledge to diagnose, treat and prognosticate common medical and surgical diseases of horses.
Au Qtr. 2 cl. Prereq: VetMed 4th yr standing.

734 Equine Soft Tissue Surgery
Practical approach to most frequently encountered soft tissue problems in equine practice. Includes rationale for decision-making, procedures, and comprehensive case management.
Sp Qtr. 3 cl. Prereq: VetMed 4th yr standing.

737 Equine Intensive Care
Students will be taught to critically evaluate, treat and monitor patients in the Equine Intensive Care Unit through supervised patient contact and weekly seminars.
Au Qtr. 1 cl, 4 lab. Prereq: VetMed 2nd yr standing and successful completion of ICU shadowing.

738 Pleasure Horse Medicine
Review of prevention, diagnosis, and treatment of diseases which are common problems of pleasure horses.
Wi Qtr. 2 lec. Prereq: VetMed 2nd, 3rd, or 4th yr standing.

739 Diagnostic Equine Lameness
Designed to provide hands-on experience in the diagnosis and treatment of equine lameness.
Wi Qtr. 2 lab hrs. Prereq: VetMed 2nd yr standing with concurrent enrollment in 738 and pre-test. Pre-test is required. This course is graded S/U.

743 Pocket Pet Medicine
Basic medicine, surgery, and husbandry for pocket pets, including rabbits, ferrets, guinea pigs, mice, rats, gerbils, chinchillas, and hamsters.
Au Qtr. 2 cl. Prereq: VetMed 2nd, 3rd, or 4th yr standing.

744 Reptile Medicine
Covers husbandry, medicine, anesthesia and surgery for captive reptiles.
Wi Qtr. 2 cl and labs. Prereq: VetMed 3rd or 4th yr standing.

746 Cattle Diseases
Medical diagnosis and therapy of individual cattle. The course will teach students medicine and surgery of individual cattle.
Au Qtr. 5 cl. Prereq: VetMed 2nd, 3rd, or 4th yr standing.

747 Small Ruminant Diseases
Diagnosis and therapy of common medical and surgical disorders in small ruminants. This course is organized in an age-related, problem-oriented manner.
Wi Qtr. 3 cl. Prereq: VetMed 3rd yr standing.

749 Equine Ophthalmology
Comprehensive problem-based discussions of equine ophthalmic cases, clinical patient examinations and stall-side rounds, ophthalmic techniques lab and cadaver surgery lab.
Wi Qtr. 2 cl. Prereq: VetMed 3rd yr standing and VMColl 612. This course is graded S/U.

751 Equine Anesthesia Elective
Review of the literature of equine anesthesia.
Wi Qtr. Arr. Prereq: VetMed 3rd or 4th yr standing. This course is graded S/U.
426 Veterinary Clinical Sciences

752 Case Studies in Clinical Neurology VMED 1
Diagnosis and management approaches in individual patients are demonstrated and discussed; lesion localization and differential diagnoses are emphasized. Au, Wi, Sp Otr. Arr. Prereq: VMc 603. Limited to second and third-year students in the veterinary curriculum. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

753 Small Animal Internal Medicine Case Presentations VMED 1
Case discussions in small animal internal medicine for pre-clinical veterinary students. Sp Qtr. 1 cl. Prereq: VetMed 2nd yr standing. This course is graded S/U.

760 Specialized Study in Veterinary Medicine VMED 1-5
Field or lab study encompassing the various areas in the field of veterinary medicine through an approved off-campus experience with qualified professionals. Sp Qtr. Prereq: VetMed 4th yr standing. To be taken during elective qtr. Cross listed in all veterinary medicine depts. Students must serve at least 4 wks in one experience to receive minimum elective cr. Repeatable to a maximum of 16 cr hrs. This course is graded S/U.

762 Clinical Veterinary Ophthalmology VMED 2
A problem-based approach to differential diagnosis, final diagnosis, and treatment of ophthalmic diseases in large and small animals. Au Qtr. 2 cl. Prereq: VetMed 3rd or 4th yr standing. Problem-based learning format. This course is graded S/U.

763 Small Animal Endoscopy VMED 1
Use of endoscopy for evaluation of gastrointestinal and respiratory problems in dogs and cats. Au Qtr. 2 cl. Prereq: VetMed 3rd yr standing.

768 Integrative Medicine, Science and Experience VMED 2
Designed to give an overview of integrative medicine, as defined by the National Center for Complementary and Alternative Medicine (housed in NIH). Au Qtr. 1 cl. 2 lab.

782 Pharmacology of Cardiac Drugs VMED 3
Clinical evaluation, pharmacokinetics, and pharmacotherapy of cardiac dysrhythmias. Wi Qtr. 2 cl. Prereq: 3rd or 4th yr or grad standing. Not open to students with credit for VetPhys 782.

783 Equine Cardiology VMED 1
The course considers clinical aspects of equine cardiology, including diseases, diagnostic methods, and treatment. Wi Qtr. Prereq: 3rd year veterinary or Graduate standing only.

790 Advanced Theriogenology Seminar VMED 1
Review of current theriogenology literature placing primary emphasis on experimental design, procedures, and scientific conclusions of reported work; each student will orally describe and prepare a written research protocol. Au, Wi, Sp Qtrs. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 16 cr hrs.

791.01 Reproductive Techniques: Equine Theriogenology GRAD 4
Au Qtr. The lectures and laboratory experiences are designed to present material covering frequently occurring reproductive abnormalities and reproductive management desirable to obtain maximal reproductive efficiency. 3 lecture hrs and 2 lab hrs. Prereq: VetMed 3rd yr standing or permission of instructor.

791.03 Reproductive Techniques: Canine Theriogenology VMED 2
This course will present information on canine theriogenology in lecture, discussion, and laboratory format. Wi Qtr. 2 hr lab, 1 hr lecture. Prereq: VetMed 3rd yr or grad standing. Evaluation will be based on laboratory participation and written examination.

791.04 Reproductive Techniques: Reproductive Physiology of Pseudoruminants VMED 3
Provides an in-depth analysis of pseudoruminant physiology including comparisons with true ruminants. Sp Qtr. Prereq: VetMed 3rd yr standing.

792 Advanced Theriogenology Laboratory VMED 2
A laboratory for the application of research, diagnostic and therapeutic techniques involving the reproductive system of domestic animals. Au, Wi, Sp Qtrs. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 16 cr hrs.

793 Individual Studies GRAD 1-8
A supervised critical investigation of some aspects of animal disease about which there is a mutual curiosity on the part of both the student and faculty. Su, Au, Wi, Sp Qtrs. Prereq: VetMed 3rd or 4th yr standing, adequate clinical training and written permission of instructor. Repeatable. This course is graded S/U.

795 Introductory Research Experience VMED 2
To obtain basic laboratory experience in a veterinary research setting. Sp Qtr. Repeatable to a maximum of 4 cr hrs. This course is graded S/U.

796.02 Advanced Studies: Equine Lameness VMED 1-8
Study of the methods used for diagnosis and treatment of diseases causing lameness in horses; includes radiographic and surgical techniques. Su, Au, Wi, Sp Qtrs. Prereq: VetMed 4th yr standing or written permission of instructor. Repeatable to a maximum of 30 cr hrs.

796.03 Advanced Studies: Gastroenterology VMED 1-8
Study of diagnosis, treatment, and prevention of diseases of the gastrointestinal system. Su, Au, Wi, Sp Qtrs. Prereq: VetMed 4th yr standing or written permission of instructor. Repeatable to a maximum of 30 cr hrs.

800 Research Methods GRAD 2
Development of a research grant including formation, research, statistical analysis of data, preparing, submitting and editing a grant. Au Qtr. Odd yrs. 1 cl. Prereq: DVM or equiv or permission of instructor.

801 Research Methods II GRAD 3
The course content emphasizes the principals and practice of clinical research design and data analysis. Wi Qtr. 3 cl. Prereq: 800; DVM degree or permission of instructor.

807 Known Case Conference GRAD 1
Teach and train radiology students the correct approach to diagnostic image reading and interpretation. Au, Wi, Sp Qtrs. 1 cl. Prereq: DVM degree. Repeatable to a maximum of 20 cr hrs.

822.02 Advanced Veterinary Internal Medicine: Gastroenterology VMED 3
Fundamental pathophysiology of disease in small animal gastroenterology. \(^*\) Sp Qtr. 2 cl. Prereq: DVM or equiv or permission of instructor. Offered spring quarter every 3 years beginning with Sp 2003.

822.03 Advanced Veterinary Internal Medicine: Respiratory Diseases VMED 3
Fundamental pathophysiology of disease in comparative veterinary pulmonology. Au Qtr. 2 cl. Prereq: DVM or equiv or permission of instructor. Offered autumn quarter every 3 years beginning with Au 2000.

822.04 Advanced Veterinary Internal Medicine: Neurology VMED 3
Fundamental pathophysiology of disease in comparative veterinary neurology. Wi Qtr. 2 cl. Prereq: DVM or equiv or permission of instructor. Offered winter quarter every 3 years beginning with Wi 2001.

822.05 Advanced Veterinary Internal Medicine: Cardiology VMED 3
Pathophysiology and select clinical diseases in comparative veterinary cardiology. Sp Qtr. 2 cl. Prereq: DVM or equiv or permission of instructor. Offered spring quarter every 3 years beginning with Sp 2001.

822.06 Advanced Veterinary Internal Medicine: Nephrology and Urology VMED 3
Pathophysiology and select clinical diseases in comparative veterinary nephrology and urology. \(^*\) Au Qtr. 2 cl. Prereq: DVM or equiv or permission of instructor. Offered autumn quarter every 3 years beginning with Autumn 2001.

822.07 Advanced Veterinary Internal Medicine: Hematology and Oncology VMED 3
Pathophysiology and select clinical diseases in comparative veterinary hematology and oncology. \(^*\) Sp Qtr. 2 cl. Prereq: DVM or equiv or permission of instructor. Offered spring quarter every 3 years beginning with Sp 2002.

822.08 Advanced Veterinary Internal Medicine: Hepatology VMED 2
Pathophysiology and select clinical diseases in comparative veterinary hepatology. \(^*\) Au Qtr. 2 cl. Prereq: DVM or equiv or permission of instructor. Offered autumn quarter every 3 years beginning with Au 2002.

822.09 Advanced Veterinary Internal Medicine: Dermatology VMED 2
Pathophysiology and select clinical diseases in comparative veterinary dermatology. \(^*\) Au Qtr. 2 cl. Prereq: DVM or equiv or permission of instructor. Offered autumn quarter every 3 years beginning with Au 2002.

822.10 Advanced Veterinary Internal Medicine: Ophthalmology VMED 2
Pathophysiology and select clinical diseases in comparative veterinary ophthalmology. \(^*\) Su Qtr. 2 cl. Prereq: DVM or equiv or permission of instructor. Offered summer quarter every 3 years beginning with Su 2002.

823 Veterinary Core Communications Skills GRAD 2
Competency

Competency in core communication skills increases client satisfaction, compliance and positive outcomes and decreases malpractice risk. Su Qtr. Restricted to VCS graduate students.
Veterinary Clinical Sciences

520 Topographic Anatomy (Canine) VMED 5
- Body and its components as forms, relationships, and mechanical functioning.
  Au Qtr. 2 cl. 3-2 hr labs. Prereq: VetMed 1st yr standing.

521 Topographic Anatomy (Equine) VMED 4
- Continuation of 520.
  Wi Qtr. Prereq: VetMed 1st yr standing.

522 Topographic Anatomy (Food Animals) VMED 4
- Continuation of 521.
  Sp Qtr. 2 cl. 2 labs hrs. Prereq: VetMed 1st yr standing.

525 Principles of Diagnostics Radiology VMED 1
- Principles behind the imaging modalities of radiology.
  Au Qtr. Prereq: 1st yr standing in VetMed.

526 Principles of Radiographic Interpretation VMED 1
- Introduction to principles of radiographic interpretation, including general principles as well as specific strategies for musculoskeletal, thoracic and abdominal image interpretation.
  Sp Qtr. 1 cl. Prereq: VetMed 1st yr standing.

530 Microscopic and Developmental Anatomy I VMED 5
- Study of microscopic and ultrastructural features of cells and tissues, as well as basic fetal development.
  Au Qtr. Prereq: VetMed 1st yr standing.

531 Microscopic and Developmental Anatomy II VMED 4
- Correlated study of the development, microscopic structure, and ultrastructural morphology of organ systems.
  Wi Qtr. Prereq: VetMed 1st yr standing.

540 Structure and Function of Cells VMED 5
- Introduction to structure and function at cellular level including physiological principles of homeostasis, energetics, metabolism, enzymes, nutrition, and growth.
  Au Qtr. Prereq: VetMed 1st yr standing.

550.01 Comparative Biology of Disease I VMED 5
- An interdisciplinary study of the interactions between disease producing agents, body systems, tissues, cells, subcellular units, and selected drugs and toxins.
  Wi Qtr. Prereq: VetMed 1st yr standing.

550.02 Comparative Biology of Disease II VMED 5
- An interdisciplinary study of the interactions between disease producing agents, body systems, tissues, cells, subcellular units, and selected drugs and toxins.
  Wi Qtr. Prereq: VetMed 1st yr standing.

560.01 Introduction to Veterinary Professions: Ethics and Jurisprudence VMED 1
- Problems faced by the practicing veterinarian in relation to the Ohio code, the law, ethics, and communications.
  Au Qtr. Prereq: VetMed 1st yr standing.

560.02 Ethics and Jurisprudence in the Veterinary Career VMED 2
- Focus on analysis of ethical and legal issues associated with the art of veterinary medicine practice and establishment of optimal veterinarian-client-patient relations.
  Wi Qtr. Prereq: VetMed 1st yr standing.

561 Pharmacology VMED 4
- Basic principles of pharmacology, therapeutics, and chemotherapy of disease.
  Sp Qtr. 4 cl. Prereq: VetMed 1st yr standing.

562 Introduction to Anesthesiology VMED 2
- Introduction to anesthesiology.
  Sp Qtr. Prereq: VetMed 2nd yr standing.

563 Introduction to Surgery VMED 3
- Introduction to surgery.
  Sp Qtr. 2 cl. or 1-2 hr lab. Prereq: VetMed 2nd yr standing.

564 Clinical Veterinary Therapeutics VMED 3
- Principles of chemotherapy of bacterial, viral, fungal, and parasitic infections; application of basic principles for chemotherapy of neoplastic disease.
  Wi Qtr. 3 cl. Prereq: VetMed 3rd yr standing.

600 Cardiovascular System VMED 6
- A comparative study of the structure, function, and dysfunction of the cardiovascular system including arrhythmias, abnormal flow, congenital disease, endocrine agents, diagnostic methods, and therapeutic approaches.
  Au Qtr. Prereq: VetMed 2nd yr standing.

601 Respiratory System VMED 5
- 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.
  Au Qtr. 5 cl. Prereq: VetMed 2nd yr standing.

602 Urinary System VMED 5
- 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.
  Wi Qtr. 5 cl. Prereq: VetMed 2nd yr standing.
428 Veterinary Medicine

603 Neurobiology VMED 6
Comparative study of structure, stressing functional anatomy, normal physiology, and the examination of the nervous system.
Sp Qtr. 6 cl. Prereq: VetMed 1st yr standing.

604 Endocrine System VMED 5
A comparative study of the structures, function, and dysfunction of the endocrine system including diseases of each endocrine organ and their relationships to whole body functions.
Sp Qtr. 5 cl. Prereq: VetMed 1st yr standing.

605 Reproductive System VMED 5
A comparative study of the structure, function, and dysfunction of the reproductive system including etiologic, pathogenic, pathophysiologic, therapeutic, and preventive aspects of reproductive diseases.
Sp Qtr. 5 cl, 2 labs. Prereq: VetMed 2nd yr standing.

606 Integumentary System VMED 5
A comparative study of the structure, function, and dysfunction of the integumentary system including important infectious and parasitic diseases, diagnosis, treatment, and prevention.
Sp Qtr. 5 cl, or 4 cl and 2 labs. Prereq: VetMed 2nd yr standing.

607 Musculoskeletal System VMED 6
A comparative study of the structure, function, and dysfunction of the musculoskeletal system including congenital and acquired diseases, their radiographic diagnosis, treatment, and prevention.
Wi Qtr. 6 cl. Prereq: VetMed 2nd yr standing.

608 Non-Mammalian and Avian Medicine VMED 2
Basic study of avian, reptile, amphibian and fish medicine including anatomy, physiology, pathogenesis of disease, diagnosis, treatment, and disease prevention and control.
Sp Qtr. Prereq: VetMed 2nd yr standing.

609 Digestive System VMED 6
A comprehensive study of the gastrointestinal system of domestic animals.
Wi Qtr. 3 cl or equiv lab hrs. Prereq: VetMed 2nd yr standing.

610 Clinical Veterinary Parasitology VMED 3
Clinical aspects of parasitic infections of cats, dogs, horses and small ruminants, including symptoms diagnosis, treatment, control measures and zoonotic concerns.
Sp Qtr. 3 cl. Prereq: VetMed 2nd yr standing.

611 Veterinary Preventive Medicine VMED 4
Introduction to prevention and control of disease in the human and animal populations with emphasis on the important role of the veterinarian in these activities.
Wi Qtr. 3 cl, or equiv lab hrs. Prereq: VetMed 2nd yr standing.

612 Introduction to Veterinary Ophthalmology VMED 3
Comparative anatomy, histology and physiology of the normal and abnormal eye and adnexae of domestic animals.
Au Qtr. 3 cl. Prereq: VetMed 3rd yr standing.

613 Fluid Therapy VMED 1
Principles and applications of fluid therapy in small and large animals.
Wi Qtr. 1 cl. Prereq: VetMed 2nd yr standing.

614.01 Professional Development: Basic Life Skills VMED 1
Basic life skills for the successful veterinarian.
Au Qtr. 1 cl. Prereq: VetMed 1st yr standing.

614.02 Professional Development: Career Strategies VMED 1
Choosing a career and career search strategies.
Au Qtr. 1 cl. Prereq: VetMed 2nd yr standing.

614.03 Professional Development: Leadership Success VMED 1
Understanding leadership; leadership as a pathway to success.
Wi Qtr. 1 cl. Prereq: VetMed 2nd yr standing.

614.04 Professional Development: Communications VMED 1
The art of successful communication.
Sp Qtr. 1 cl. Prereq: VetMed 2nd yr standing.

614.05 Professional Development: Career Development and Business Management VMED 2
Introduction to career planning; reviewing the normal stages of a professional career.
Au Qtr. 2 cl. Prereq: VetMed 3rd yr standing.

614.06 Professional Development: Practice Success VMED 1
The art and knowledge for a successful veterinary practice.
Wi Qtr. 1 cl. Prereq: VetMed 3rd yr standing.

615.01 Small Animal Operative Practice VMED 4
Clinical instruction in and application of surgical techniques and treatment of small animal diseases.
Au, Wi Qtrs. 1 cl, 12 lab hrs/wk. Prereq: VetMed 3rd yr standing. Not open to students with credit for 615.

615.02 Small Animal Diagnostic Medicine Techniques VMED 1
Clinical instruction in and application of medical diagnostic and therapeutic techniques in small animals.
Au, Wi Qtrs. 4 lab hrs/wk. Prereq: VetMed 3rd yr standing.
**Veterinary Medicine**  
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<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>700.09</td>
<td>Applied Veterinary Medicine: Clinical Anesthesiology</td>
<td>3</td>
<td>Provides supervised experience in hospital-based anesthesia practice. Students anesthetize patients for surgical as well as diagnostic procedures. <strong>Prereq:</strong> VetMed 4th yr standing. Seminars supplement clinical patient management. Repeatable to a maximum of 6 cr hrs.</td>
</tr>
<tr>
<td>700.10</td>
<td>Applied Veterinary Medicine: Large Animal Ambulatory Clinics</td>
<td>3</td>
<td>Provides student the experience of working in a large animal clinic, including patient and business management aspects. Provides instruction in production medicine and its role in modern agriculture. <strong>Prereq:</strong> VetMed 4th yr standing. Repeatable to a maximum of 32 cr hrs.</td>
</tr>
<tr>
<td>700.11</td>
<td>Applied Veterinary Medicine: Small Animal Critical Care</td>
<td>3</td>
<td>Application of principles of diagnosis, therapy, and management of patients with acute or critical illness. <strong>Prereq:</strong> VetMed 4th yr standing. Repeatable to a maximum of 32 cr hrs.</td>
</tr>
<tr>
<td>700.12</td>
<td>Applied Veterinary Medicine: Veterinary Clinical Ophthalmology</td>
<td>3</td>
<td>Application of principles of diagnosis and treatment of diseases of the eye to patients of all species. <strong>Su, Au, Wi, Sp Qtrs. Prereq:</strong> VetMed 4th yr standing. Repeatable to a maximum of 32 cr hrs.</td>
</tr>
<tr>
<td>700.14</td>
<td>Applied Veterinary Medicine: Applied Pathology</td>
<td>3</td>
<td>Training in gross dissection and interpretation of gross and microscopic pathologic lesions in animals. <strong>Prereq:</strong> VetMed 4th yr standing.</td>
</tr>
<tr>
<td>700.15</td>
<td>Applied Veterinary Medicine: Dermatology</td>
<td>3</td>
<td>One of a series of clinical studies offered fourth-year veterinary medical students as part of the core curriculum. <strong>Su, Au, Wi, Sp Qtrs. Prereq:</strong> VetMed 4th yr standing. Repeatable to a maximum of 32 cr hrs.</td>
</tr>
<tr>
<td>700.16</td>
<td>Applied Veterinary Medicine: Equine Emergency/Critical Care</td>
<td>3</td>
<td>Provides students supervised experience in hospital-based emergency and critical care practice with horses. <strong>Prereq:</strong> VetMed 4th yr standing. Seminars supplement clinical patient management. Repeatable to a maximum of 32 cr hrs.</td>
</tr>
<tr>
<td>700.17</td>
<td>Applied Veterinary Medicine: Shelter Medicine and Surgery</td>
<td>3</td>
<td>Clinical rotation teaching principles and practice of shelter medicine. <strong>Prereq:</strong> VetMed 4th yr standing.</td>
</tr>
<tr>
<td>700.19</td>
<td>Applied Veterinary Medicine: Cardiology</td>
<td>3</td>
<td>Clinical instruction in client relations, diagnosis, treatment and prevention of heart diseases. <strong>Au, Wi, Sp, Su Qtrs. Prereq:</strong> VetMed 4th yr standing. Repeatable to a maximum of 6 cr hrs.</td>
</tr>
<tr>
<td>700.20</td>
<td>Applied Veterinary Medicine: Small Animal Neurology</td>
<td>2</td>
<td>Clinical instruction in client relations, diagnosis, treatment and prevention of neurologic disorders. <strong>Prereq:</strong> VetMed 4th yr standing.</td>
</tr>
<tr>
<td>700.21</td>
<td>Applied Veterinary Medicine: Veterinary Public Practice</td>
<td>1</td>
<td>Theory and application of public health in veterinary medicine. <strong>Prereq:</strong> VetMed 4th yr standing. This course is graded S/U.</td>
</tr>
<tr>
<td>700.23</td>
<td>Applied Veterinary Medicine: Small Animal Emergency</td>
<td>6</td>
<td>The application of principles of orthopedic surgery to treatment of diseases of companion small animals. <strong>Prereq:</strong> 4th yr VME.</td>
</tr>
<tr>
<td>700.24</td>
<td>Applied Veterinary Medicine: Equine Surgery</td>
<td>3</td>
<td>Application of principles of diagnosis, treatment and prevention of diseases of equine patients. Repeatable to a maximum of 32 cr hrs.</td>
</tr>
<tr>
<td>700.25</td>
<td>Applied Veterinary Medicine: Small Animal Emergency</td>
<td>3</td>
<td>Application of principles of diagnosis, therapy and management of patients with acute or critical illness. <strong>Prereq:</strong> 4th year VME.</td>
</tr>
<tr>
<td>796.22</td>
<td>Laboratory Mouse Medicine</td>
<td>2</td>
<td>Small group discussions concerning the history, regulations and ethics, animal models, biology, husbandry, diseases, management of the Laboratory mouse used in teaching and biomedical research.</td>
</tr>
<tr>
<td>796.23</td>
<td>Laboratory Mouse Medicine</td>
<td>2</td>
<td>Small group discussions concerning the history, regulations and ethics, animal models, biology, husbandry, diseases, management of the Laboratory mouse used in teaching and biomedical research.</td>
</tr>
</tbody>
</table>

**Veterinary Preventive Medicine**

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credits</th>
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</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>Introduction to Veterinary Medicine</td>
<td>3</td>
<td>To increase awareness of the many dimensions of veterinary medicine. <strong>Sp Qtr.</strong></td>
</tr>
<tr>
<td>693</td>
<td>Individual Studies</td>
<td>1-6</td>
<td>Laboratory and library investigations of animal disease problems involving veterinary preventive medicine. <strong>Su, Au, Wi, Sp Qtrs. Prereq:</strong> Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.</td>
</tr>
<tr>
<td>700</td>
<td>Molecular Epidemiology of Infectious Diseases</td>
<td>3</td>
<td>Provides students with the knowledge and skills to study disease outbreaks in livestock using molecular biology techniques. <strong>Sp Qtr. 1 1.5-hr cl. Prereq:</strong> Some basic knowledge of infectious diseases and molecular biology or permission of the instructors. Grad 1st or 2nd yr VetMed standing. Not open to student with credit for PubH Ep 730. Cross-listed in PubH Ep 724.</td>
</tr>
<tr>
<td>710.08</td>
<td>Beef and Dairy Production Medicine</td>
<td>3</td>
<td>Students prepare for roles in dairy production medicine by focusing on techniques, diagnostics and investigations on dairy farms. <strong>Prereq:</strong> Vet Med 4th year standing. This course is graded S/U.</td>
</tr>
<tr>
<td>711.01</td>
<td>Applied Veterinary Medicine Options: Herd Health Problems</td>
<td>2-3</td>
<td>Field instruction and experience in comprehensive disease prevention, nutritional, reproductive, and economic services in modern confinement and conventional livestock production. Offered as an elective for fourth year veterinary students to arrange into an elective program in conjunction with a faculty adviser.</td>
</tr>
<tr>
<td>711.02</td>
<td>Applied Veterinary Medicine Options: Public Service Problems</td>
<td>2-3</td>
<td>Instruction and experience in animal and human disease (zoonoses) prevention, control, and eradication as provided by public service veterinarians in local, state, and national agencies. Offered as an elective for fourth year veterinary students to arrange into an elective program in conjunction with a faculty adviser.</td>
</tr>
<tr>
<td>713</td>
<td>Advanced Veterinary Preventive Medicine</td>
<td>3</td>
<td>A deeper look at Preventive Medicine in a &quot;farm to table&quot; setting for food animal. <strong>Prereq:</strong> 4th year Vet Med student.</td>
</tr>
<tr>
<td>715</td>
<td>Veterinary Public Service</td>
<td>3</td>
<td>Practice of public service directed at animal and public health in international, national, state, and local agencies with emphasis on planning, decision making, and budgeting; interaction of veterinarian and other health workers. <em>Au Qtr.</em>*</td>
</tr>
<tr>
<td>717</td>
<td>Introduction to Shelter Medicine</td>
<td>1</td>
<td>Course focuses on basic herd health principles applied in shelter settings including infectious disease management, quarantine, isolation, cleaning, disinfection, roles and opportunities. <strong>Sp Qtr. Prereq:</strong> 2nd year Vet student. This course is graded S/U.</td>
</tr>
<tr>
<td>721</td>
<td>Zoonotic Diseases</td>
<td>4</td>
<td>Epidemiology of zoonotic diseases, including understanding basic prevention and control strategies associated with each disease. <strong>Au Qtr. 2 2-hr cl. Prereq:</strong> VetMed 2nd, 3rd or 4th yr, or grad standing. Repeatable to a maximum of 30 cr hrs.</td>
</tr>
<tr>
<td>722</td>
<td>Food-Borne Diseases, Food Animal Production Systems, and Food Safety</td>
<td>4</td>
<td>Detailed description of common zoonotic food-borne diseases, with previous description of food chains for products from animal sources. Food safety issues will also be discussed. <strong>Wi Qtr. 2 2-hr cl. Prereq:</strong> VetMed 3rd or 4th yr standing. Repeatable to a maximum of 30 cr hrs.</td>
</tr>
<tr>
<td>723</td>
<td>Biosafety, Environmental Health, and Other Veterinary Public Topics</td>
<td>4</td>
<td>Overview on biosecurity (bioterrorism, preparedness, management of zoonotic outbreaks), common environmental health issues related to human and animal interactions, and other topics about Veterinary Public Health. <strong>Sp Qtr. 2 2-hr cl. Prereq:</strong> VetMed 4th yr standing. Repeatable to a maximum of 30 cr hrs.</td>
</tr>
<tr>
<td>724.01</td>
<td>Contemporary Issues in Animal Welfare</td>
<td>2</td>
<td>Students explore current issues in animal welfare through reading, presentation and discussion. <strong>Prereq:</strong> 1st year Veterinary student or permission of instructor.</td>
</tr>
<tr>
<td>724.01</td>
<td>Contemporary Issues in Animal Welfare</td>
<td>2</td>
<td>Students explore current issues in animal welfare through reading, presentation and discussion. <strong>Prereq:</strong> 1st year Veterinary student or permission of instructor.</td>
</tr>
</tbody>
</table>
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724.02 Contemporary Issues in Animal Welfare GRAD 2
Students explore current issues in animal welfare through reading, presentation and discussion. Prereq: 2nd year Veteran student.

724.02 Contemporary Issues in Animal Welfare VMED 2
Students explore current issues in animal welfare through reading, presentation and discussion. Prereq: 2nd year Veterinary student.

725 International Topics in Veterinary Public Health GRAD 2
Provide students with an overview of the most important foreign animal and zoonotic diseases in different geographical regions of the world. Prereq: 1st and 2nd year Vet students or Grad standing.

750 Veterinary Practice and Hospital Management VMED 2
Basic principles of hospital and practice management including insurance, partnerships, corporations, accounting, taxes, employees, and general management procedures. Sp Qtr. 3 cl. Prereq: VetMed 1st or 2nd yr standing.

760 Specialized Study in Veterinary Medicine VMED 1-16
Field or lab study encompassing the various areas in the field of veterinary medicine through an approved off-campus experience with qualified professionals. Su, Au, Wi, Sp Qtrs. Arr. Prereq: VetMed 4th yr standing and permission of instructor. Repeatable to a maximum of 16 cr or hrs. To be taken during elective qtr. Cross listed in all veterinary medicine depts. Students must serve at least 4 wks in one experience to receive minimum elective cr. This course is graded S/U.

770 Zoo and Wildlife Medicine I VMED 1
Introduction to zoo and wildlife medicine. Overview of taxonomy, natural history, behavior, husbandry, restraint and common veterinary techniques and concerns for a wide range of species. Sp Qtr. 1 cl. Prereq: VetMed 1st and 2nd yr standing. This course is graded S/U.

771 Zoo and Wildlife Medicine II VMED 2

783 Opportunities in Global Veterinary Medicine and Public Health GRAD 4
A preparatory course for Vet Professionals and MPH-VPH students who plan to engage in international and non traditional veterinary medicine in public health areas. Prereq: Vet Med or MPH - VPH student.

783 Opportunities in Global Veterinary Medicine and Public Health VMED 4
A preparatory course for Vet Professionals and MPH-VPH students who plan to engage in international and non traditional veterinary medicine in public health areas. Prereq: Vet Med or MPH - VPH student.

793.01 Laboratory Animal Medicine 1 VMED 2
Small group discussions concerning history, regulation and ethics, animal models, biology, husbandry, diseases and management of the laboratory Mouse used in teaching and biomedical research. Prereq: Vet Med 2nd or 3rd year standing or Graduate level.

793.01 Laboratory Animal Medicine 1 VMED 2
Small group discussions concerning history, regulation and ethics, animal models, biology, husbandry, diseases and management of the laboratory Mouse used in teaching and biomedical research. Prereq: Vet Med 2nd or 3rd year standing or Graduate level.

793.02 Laboratory Animal Medicine 2 GRAD 2
Small group discussions concerning history, regulation and ethics, animal models, biology, husbandry, diseases and management of the laboratory Mouse used in teaching and biomedical research. Prereq: Vet Med 2nd or 3rd year standing or Graduate level.

793.02 Laboratory Animal Medicine 2 VMED 2
Small group discussions concerning history, regulation and ethics, animal models, biology, husbandry, diseases and management of the laboratory Mouse used in teaching and biomedical research. Prereq: Vet Med 2nd or 3rd year standing or Graduate level.

793.03 Laboratory Animal Medicine 3 VMED 2
Small group discussions concerning history, regulation and ethics, animal models, biology, husbandry, diseases and management of the laboratory Mouse used in teaching and biomedical research. Prereq: Vet Med 2nd or 3rd year standing or Graduate level.

793.03 Laboratory Animal Medicine 3 GRAD 2
Small group discussions concerning history, regulation and ethics, animal models, biology, husbandry, diseases and management of the laboratory Mouse used in teaching and biomedical research. Prereq: Vet Med 2nd or 3rd year standing or Graduate level.

793.04 Laboratory Animal Medicine 4 VMED 2
Small group discussions concerning history, regulation and ethics, animal models, biology, husbandry, diseases and management of the laboratory Mouse used in teaching and biomedical research. Prereq: Vet Med 2nd or 3rd year standing or Graduate level.

793.04 Laboratory Animal Medicine 4 GRAD 2
Small group discussions concerning history, regulation and ethics, animal models, biology, husbandry, diseases and management of the laboratory Mouse used in teaching and biomedical research. Prereq: Vet Med 2nd or 3rd year standing or Graduate level.

793.05 Laboratory Animal Medicine 5 VMED 2
Small group discussions concerning history, regulation and ethics, animal models, biology, husbandry, diseases and management of the laboratory Mouse used in teaching and biomedical research. Prereq: Vet Med 2nd or 3rd year standing or Graduate level.

793.05 Laboratory Animal Medicine 5 GRAD 2
Small group discussions concerning history, regulation and ethics, animal models, biology, husbandry, diseases and management of the laboratory Mouse used in teaching and biomedical research. Prereq: Vet Med 2nd or 3rd year standing or Graduate level.

793.06 Laboratory Animal Medicine 6 VMED 2
Small group discussions concerning history, regulation and ethics, animal models, biology, husbandry, diseases and management of the laboratory Mouse used in teaching and biomedical research. Prereq: Vet Med 2nd or 3rd year standing or Graduate level.

793.06 Laboratory Animal Medicine 6 GRAD 2
Small group discussions concerning history, regulation and ethics, animal models, biology, husbandry, diseases and management of the laboratory Mouse used in teaching and biomedical research. Prereq: Vet Med 2nd or 3rd year standing or Graduate level.

793.07 Laboratory Animal Medicine 7 VMED 2
Small group discussions concerning history, regulation and ethics, animal models, biology, husbandry, diseases and management of the laboratory Mouse used in teaching and biomedical research. Prereq: Vet Med 2nd or 3rd year standing or Graduate level.

793.07 Laboratory Animal Medicine 7 GRAD 2
Small group discussions concerning history, regulation and ethics, animal models, biology, husbandry, diseases and management of the laboratory Mouse used in teaching and biomedical research. Prereq: Vet Med 2nd or 3rd year standing or Graduate level.

793.08 Laboratory Animal Medicine 8 VMED 2
Small group discussions concerning history, regulations and ethics, animal models, biology, husbandry, diseases, management of the laboratory mouse used in teaching and biomedical research. Prereq: Vet Med 2nd or 3rd year standing or Graduate level.

793.08 Laboratory Animal Medicine 8 GRAD 2
Small group discussions concerning history, regulation and ethics, animal models, biology, husbandry, diseases, management of the laboratory mouse used in teaching and biomedical research. Prereq: Vet Med 2nd or 3rd year standing or Graduate level.

796.01 Advanced Studies: Public Health Organization, Environmental Health, Food-Borne Illnesses VMED 1-8
A course providing small group instruction in the topics designated. Deals with application of public health principles to solution of community problems. Au, Wi, Sp Qtrs. Prereq: 715, 796.02, 796.03, 796.04, 796.05. Open only to DVM and grad students. Repeatable with permission of instructor. This course is graded S/U.

796.02 Advanced Studies: Prevention of Communicable Diseases VMED 3
Discussion of the epidemiology of communicable diseases of animals and fundamental approaches used by state and federal animal health agencies for prevention, control, and eradication. Au Qtr. 3 cl. Prereq: VetMed 2nd, 3rd or 4th yr standing. Repeatable to a maximum of 30 cr hrs.

796.06 Advanced Studies: Disease Control in Dairy VMED 3
Cattle
Principles and applications of preventive medicine in establishing and maintaining dairy herd health programs and laboratory practices in mastitis control. Sp Qtr. 2-1 hr cl, 1 2-hr lab. Prereq: VetMed 2nd, 3rd, 4th yr or grad standing. Repeatable to a maximum of 30 cr hrs.

796.07 Advanced Studies: Nutrition of Food Animal and Equine VMED 3
Nutritional diseases and feeding practices for food producing animals and equine. Prereq: 1st or 2nd year VME student.
796.08 Advanced Studies: Diseases of Swine VMED 3
Discussion of swine diseases and herd health programs with emphasis on diagnosis, prevention, control and treatment. Au Qtr. 1 cl, Prereq: VetMed 2nd, 3rd or 4th yr standing. Repeatable to a maximum of 30 cr hrs.

796.12 Advanced Studies: Literature of Production Medicine GRAD 1
Review and discussion of current, selected referred literature in production medicine. Au, Wi Qtrs. 1-hr cl. Prereq: VetMed 3rd of 4 yr or grad standing. Repeatable to a maximum of 2 cr hrs.

796.13 Advanced Studies: Applied Dairy Nutrition VMED 3
Applied principles of dairy nutrition and feeding to prevent metabolic diseases. Wi Qtr. 3 cl. Prereq: 796.06 or AnimSci 330 or equiv; VetMed 3rd or 4th yr, grad standing or permission of instructor. Repeatable to a maximum of 30 cr hrs. Not open to students with credit for AnimSci 630.03. Cross-listed in Animal Sciences as 630.03.

796.14 Advanced Studies: Swine Production Medicine VMED 3
A course providing small group instruction in the topics designated. Discussion of the components of a swine production medicine program. Au Qtr. 3 cl. Prereq: VetMed 2nd, 3rd or 4th yr standing. Repeatable to a maximum of 30 cr hrs.

796.15 Advanced Studies: Dairy Herd Record Analysis VMED 2
Interpretation of dairy records based on understanding of nutrition, physiology and lactation and reproduction. Wi Qtr. 2 cl. Prereq: VetMed 3rd yr standing with 796.06. Requires computer access. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

796.16 Advanced Studies: Topics in Dairy Production Medicine VMED 1
Presentation and discussion of current issues of interest in dairy production medicine and management. Wi Qtr. 1 cl. Prereq: VetMed 2nd or 3rd yr or grad standing. Experts in various dairy-associated fields will be presenters and lead discussions. Offered odd numbered years. This course is graded S/U.

796.17 Advanced Studies: Bovine Palpation VMED 2
To review and enhance techniques of bovine reproductive exams, palpation, pregnancy diagnosis, and dystocia management. Wi Qtr. 1 cl, 1 2-hr lab. Prereq: VetClin 746.

796.18 Advanced Studies: Bovine Theriogenology VMED 2

796.19 Advanced Studies: Bovine Theriogenology GRAD 2

797 Wildlife Disease Ecology VMED 2
Topics in wildlife disease ecology as it relates to habitat quality, population regulation, wildlife management, and its implications for human and domestic animal health. Sp Qtr. 2 cl. Prereq: VetMed or grad standing; also, undergrads in the College of Food, Agricultural, and Environmental Sciences, College of Biological Sciences or School of Natural Resources.

798 Applied Avian Medicine GRAD 1
Review and discussion of current avian medicine topics as applied to a production medicine environment, diagnostics and prevention and control strategies. Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

810 Principles of Epidemiology VMED 2
Discussion of principle theories and philosophies of epidemiology and scientific investigation. Wi Qtr. 2 hr cl. Prereq: Grad standing.

820 Veterinary Clinical Epidemiology GRAD 1
Application of clinical examination and diagnostic testing. Su Qtr. 1 1-hr cl. Prereq: Grad standing. This course is based on a book "Clinical Epidemiology: A Basic Science for Clinical Medicine" by Sackett, Haynes, Guyatt and Tugwell.

850.01 Seminar in Veterinary Preventive Medicine VMED 1
Seminar in Veterinary Preventive Medicine. Repeatable to a maximum of 3 cr hrs.

850.02 Seminars in Veterinary Preventive Medicine GRAD 1
Graduate student presentations on their research projects. Au, Sp Qtrs. Prereq: This course is graded S/U.

850.03 Seminar in Veterinary Preventive Medicine GRAD 2
Group discussions of appropriate methodology and statistical analysis to meet objectives of investigators presenting seminars. Au, Wi Qtrs. 2 cl. Prereq: Grad standing with DVM degree. Repeatable to a maximum of 4 cr hrs.

851 Group Discussion on New Findings in Biology GRAD 2
Group works on recent research discoveries in infectious diseases, microbiology, and immunology, and ethics in research. Su, Wi, Sp Qtrs.

999 Research in Veterinary Preventive Medicine GRAD 1-18
Research thesis or dissertation purposes only. Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

Vision Science

501 Geometric Optics OPT 5
Vergence, objects, and images, thin lenses, simple model eyes, spherical refracting surfaces, thick lens systems, mirrors, ray tracing, and prisms. Au Qtr. 4 cl, 1 2-hr lab. Prereq: Optometry 1st yr standing or permission of instructor.

503 Geometric and Physical Optics OPT 5
Angular magnification, telescopes, apertures and stops, astigmatism, prismatic effects of lenses, diffraction, polarization, interference, electromagnetic waves, quantum optics. Wi Qtr. 4 cl, 1 2-hr lab. Prereq: Optometry 1st yr standing and 501.

506 Genetics for Optometrists OPT 1
Course is designed to help optometry students place genetics into the context of ocular disease and treatment. Au Qtr. Prereq: Optometry first year standing or permission of instructor. This course is graded S/U.

507 Biochemistry for Optometrists OPT 1
Designed to help optometry students place biochemistry into the context of ocular disease, and treatment. Wi Qtr. Prereq: Optometry 1st yr standing or permission of instructor. Course is part of a sequence with 506 and 508. On-line course.

508 Microbiology for Optometrists OPT 1
Designed to help optometry students place microbiology into the context of ocular disease, and treatment. Sp Qtr. Prereq: Optometry 1st yr standing or permission of instructor. On-line course.

511 Optics of the Eye OPT 5
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. Sp Qtr. 4 cl, 1 2-hr lab. Prereq: Optometry 1st yr standing and 503 or permission of instructor.

512 Ocular Motility OPT 5
The motility of the eye; the structure and innervation of the extracocular muscles; mechanisms and analysis and description of eye movements. Wi Qtr. 4 cl, 1 2-hr lab. Prereq: Optometry 1st yr standing. For grad credit to students majoring in vision science.

520 Measurement of Light and Color OPT 5
Principles of photometry and colorimetry; light sources; color vision theory; clinic tests of color discrimination; and introduction to visual psychophysics. Wi Qtr. 4 cl, 1 2-hr lab. Prereq: Optometry 1st yr standing. For grad credit to students majoring in vision science.

531 Basic Human Anatomy OPT 5
Basic human developmental, neural, and gross anatomy, using models and films, supplemented with prepared specimens. Au, Wi Qtrs. 3 cl, 2 2-hr lab. Prereq: 535, 580 and Optometry 1st yr standing or major in vision science.

535 Microscopic Anatomy OPT 5
Microscopic anatomy of cells and tissues and special histology of the organ systems. Au, Wi Qtrs. 3 cl, 2 2-hr lab. Prereq: Optometry 1st yr standing or major in vision science.

580 Physiology for Optometrists I OPT 4
Physiology of the blood, respiratory physiology, renal physiology, gastrointestinal physiology, endocrinology, and immunology. Au Qtr. 4 cl. Prereq: Optometry 1st yr standing or permission of instructor.

581 Physiology for Optometrists II OPT 5
A continuation of 580. Physiology of the cell, molecular physiology, neurophysiology, muscle physiology and cardiovascular physiology. Wi Qtr. 5 cl. Prereq: 535 and 580.

608 Anatomy of the Eye OPT 5
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. Sp Qtr. 3 cl, 2 2-hr lab. Prereq: 581, 531 and Optometry 1st yr standing or permission of instructor.

613 Monocular Sensory Processes OPT 4
Spatial, temporal and chromatic aspects of visual sensitivity and their relation to photopic and scotopic visual systems and to the neurophysiology of the visual system. Au Qtr. 4 cl. Prereq: Optometry 2nd yr standing or permission of instructor.
Vision Science

626 Ocular Physiology OPT 5
A comprehensive study of the physiology of the eye, including related pathophysiological mechanisms.
Sp Qtr. 6 cl. Prereq. or concur: 531, 581 and 608.

650 Mechanisms of Disease for Optometry OPT 5
Provides an introduction to the techniques used in the assessment of ocular health and in the diagnosis and management of ocular disease.
Sp Qtr. 5 cl. Prereq: 531, 581 and Optometry 1st yr standing.

680 Introduction to Pharmacology for Optometrists OPT 3
A survey of general pharmacological principals and actions; effects of drugs on the central nervous system, cardiovascular system, and other systems.
Wi Qtr. 3 cl. Prereq: 581 and Optometry 2nd yr standing or permission of instructor.

715 Binocular and Spatial Vision OPT 5
The study of the sensory processes involved in the coordination of the two eyes in the perception of space and the sensorimotor processes of spatial localization.
Sp Qtr. 4 cl, 1-2 hr lab. Prereq.: Optometry 2nd yr standing.

716 Visual Perception OPT 3
Traditional topics in visual perception; “higher brain function” and behavioral neurosciences of vision; brain disorders of vision and visual perception.
Wi Qtr. 3 cl. Prereq.: Enrollment in College of Optometry or permission of instructor.

731 Environmental Vision OPT 4
Visual tasting in industry; relation of vision to performance, comfort, and safety; visual requirements for licenses; eye hazards and protection; compensation for vision loss.
Wi Qtr. 3 cl, 1-2 hr lab. Prereq.: 520.

732 Vision of Children OPT 5
Vision screening; the prevalence of visual anomalies and eye diseases in children; basic visual skills required in school and methods for their improvement.
Au Qtr. 3 cl, 1-4 hr lab. Prereq.: Optometry 3rd yr standing.

733 Optometric Gerontology OPT 4
A survey of visual and systemic changes associated with aging, with emphasis on ophthalmic examination and rehabilitative techniques.
Wi Qtr. 3 cl, 1-2 hr lab. Prereq.: Optometry 3rd yr standing.

740 Survival Skills for Graduate Students GRAD 2
Provides “survival skills” for beginning graduate students. These include critiquing papers, writing abstracts, presenting data and analyses, preparing audiovisual materials, and some experimental design issues.
Su, Au, Wi, Sp Qtrs. 2 cl.

780 Special Topics in Vision Science GRAD 1-5
Experimental and theoretical aspects of areas of current interest in vision science.
Su, Au, Wi, Sp Qtrs. Prereq: Enrollment in Optometry or permission of instructor. Repeatable to a maximum of 20 cr hrs.

781 Global Issues in Eye Care GRAD 2
Course provides an overview of common causes of vision impairment and discusses means to eliminate avoidable blindness.
Prereq.: Grad standing or permission of instructor.

790 Advanced Topics in Anterior Segment and Contact Lenses GRAD 2
Intended for students furthering their research experience in the areas of anterior segment (e.g. cornea, conjunctiva, tear system) or contact lenses.
Su, Au, Wi, Sp Qtrs. 2 cl. Prereq.: Optometry 654 or permission of instructor. Repeatable to a maximum of 16 cr hrs.

795 Seminar GRAD 1-5
A series of seminars dealing with new developments in the various phases of vision science.
Su, Au, Wi, Sp Qtrs. 1-5 cl. Prereq.: Permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded SU.

796 Ethics in Biomedical Research GRAD 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.
Au Qtr. 2 cl.

797 Grantmanship GRAD 2
Designed to explain the structure of the National Institutes of Health, especially the National Eye Institute, to illustrate the principles of good grantmanship, and to describe the review process grants undergo. Emphasis will be focused on two particular grant mechanisms: the Mentored Clinical Scientist Development Award (N23) and the Research Project Grant (R01).
Wi Qtr. 2 cl.

798 Statistics in Clinical Research GRAD 2
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.
Su Qtr. 2 cl.

799 Assessing the Literature GRAD 1
Students will present findings from a journal article and discuss study design, statistical, analysis, presentation of data, conclusions, and other relevant information.
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

801 Optics of the Eye and Specification of the Visual Stimulus GRAD 5
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.
Au Qtr. 4 cl, 1-2 hr lab. Prereq: 501, 511, 520 and grad standing, or permission of instructor.

802 Ocular Motility and Binocular Vision GRAD 5
Advanced topics on eye movements, ocular motility, and sensorimotor aspects of visual perception and binocular vision.
Sp Qtr. 4 cl, 1-2 hr lab. Prereq: 512, 715, 716 and grad standing, or permission of instructor.

803 Monocular Sensory Processes of Vision GRAD 5
Spatial, temporal and spectral properties of photopic and scotopic vision; color vision and color deficiencies; visual development; clinical psychophysics.
Wi Qtr. 4 cl, 1-2 hr lab. Prereq: 511, 520, 613 and grad standing, or permission of instructor.

804 Anatomy and Physiology of the Visual System GRAD 5
Advanced anatomy, physiology and neurology of the visual system.
Su Qtr. 4 cl, 1-2 hr lab. Prereq: 608, 626 and grad standing or permission of instructor.

810 Image Evaluation GRAD 3-5
Evaluation of optical systems and image forming systems including the eye by objective and subjective methodologies.
Su, Au, Wi, Sp Qtrs. 5 cl. Prereq.: 801 and grad standing, or permission of instructor. Repeatable to a maximum of 12 cr hrs.

811 Color Vision GRAD 3-5
Spectral sensitivity; color vision deficiency, color matching and color appearance; theory and laws of color mixture.
Su, Au, Wi, Sp Qtrs. 5 cl. Prereq.: 803 and grad standing, or permission of instructor. Repeatable to a maximum of 12 cr hrs.

812 Neurophysiology of Vision GRAD 3-5
Phototransduction; photoreceptor recordings; horizontal, bipolar and amacrine cells; ganglion and LGN cells; M and P pathways and relationship to optic nerve disorders; striate and extrastriate cortex.
Su, Au, Wi, Sp Qtrs. 4 cl, 1-2 hr lab. Prereq: 804 and grad standing, or permission of instructor. Repeatable to a maximum of 12 cr hrs.

813 Physiology of the Eye GRAD 3-5
Recent developments in the respiration, metabolism, and mechanics of ocular tissues, and the aqueous dynamics of the eye.
Su, Au, Wi, Sp Qtrs. 4 cl, 1-2 hr lab. Prereq.: 804 and grad standing, or permission of instructor. Repeatable to a maximum of 12 cr hrs.

814 Experimental Design in Eye Movements GRAD 3
Provides the student with experience in the use of the eye tracking and accomodation-monitoring equipment and eye movement data analysis including main sequence relationships, coordinate systems, filtering techniques and data calibration.
Su, Au, Wi, Sp Qtrs. 2 cl, 1-2 hr lab. Prereq: 512 and 802.

815 Binocular Vision and Perception GRAD 3-5
Study of binocular vision and visual spatial localization including the perception of distance, direction, form and motion.
Su, Au, Wi, Sp Qtrs. 3 cl, 1-2 hr lab. Prereq.: 802 and grad standing, or permission of instructor. Repeatable to a maximum of 12 cr hrs.

816 Visual Development GRAD 3-5
Introduction to the fundamental concepts underlying human visual development and how to study it as well as learning to collect psychophysical data on human infants.
Sp Qtr. 3-5 cl. Prereq.: Enrollment in the College of Optometry or grad standing in vis sci, or permission of instructor. Repeatable to a maximum of 5 cr hrs.

818 Anatomy of the Visual Pathway GRAD 3-5
Advanced study of the neuroanatomy of the visual system; recent advances in ocular anatomy and neuroanatomy of the visual pathway.
Su, Au, Wi, Sp Qtrs. 3-5 cl. Prereq.: 804.

820 Specification of the Visual Stimulus GRAD 3-5
Assessment of critical detail of visual tasks to determine visual standards and appropriate level and distribution of light; study of apparatus to control intensity and composition of visual stimuli, measurement of light.
Su, Au, Wi, Sp Qtrs. 3 cl, 4-8 hr lab. Prereq: 801 and grad standing, or permission of instructor. Repeatable to a maximum of 12 cr hrs.

891.01 Interdisciplinary Seminar on Biomedical Images GRAD 1-2
Graduate seminar for Graduate Interdisciplinary Specialization in Comprehensive Engineering and Science of Medical Images.
Au, Wi, Sp Qtrs. 1 cl. Prereq: Grad standing. Cross-listed in Biomedical Engineering, Biomedical Informatics, Biophysics, Computer Science and Engineering, Electrical and Computer Engineering, Integrated Biomedical Science, Pathology, Radiology, and Statistics. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

894 Group Studies in Vision Science GRAD 1-5
Group studies on special problems in vision science.
Su, Au, Wi, Sp Qtrs. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 30 cr hrs.
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<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
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<td>500</td>
<td>Physical Principles in Welding Engineering I</td>
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<td>601, 602</td>
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<td>Physical Principles in Welding Engineering II</td>
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<td>Physical Principles in Welding Engineering I-Laboratory</td>
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**Vocational Education, Comprehensive**

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<td>Individual Studies in Vocational Education</td>
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**Welding Engineering**

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<td>Chemistry of Welding and Joining Processes</td>
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**Vision Science**

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<td>Fundamentals of Radiography</td>
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<td>638</td>
<td>Introduction to Ultrasonics</td>
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<td>Capstone Welding Design III</td>
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434  Welding Engineering

694  Group Studies in Welding Engineering  UGRD 1-15
The student must register for particular topics from fields of welding engineering, the topics, cr hrs, and instructor will be announced in quarter prior to the quarter offered. Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

695  Topics in Welding Engineering  UGRD 1-3
An opportunity for systematic exposure to timely and/or practical topics in welding engineering as presented by leaders in the field. 1-3 hr cl. Prereq: Sr or grad standing in welding engineering. Repeatable to a maximum of 6 cr hrs.

699  Undergraduate Research in Welding Engineering  UGRD 1-5
Opportunity for undergraduate student to conduct research in Welding Engineering. Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

701  Solid State Welding  UGRD 3
The welding and joining of metals in the solid state with emphasis on processes and metallurgical principles. * Sp Qtr. 3 cl. Prereq: 600, EngMech 440, or MechEng 420 or 440, and MatSciEn 542.01.

702  Fundamentals of Resistance Welding  UGRD 3
Fundamentals of the resistance welding process with emphasis on process analysis. Au Qtr. 3 cl. Prereq: 601.

703  Brazing and Soldering  UGRD 3
Brazing and soldering processes with emphasis on physical and metallurgical principles, materials, design, and application considerations. Wi Qtr. 3 cl. Prereq: 504 or permission of instructor.

704  High Energy Density Welding Processes  UGRD 3
Theory and practices in laser, electron beam, plasma, and other high energy density welding processes; process demonstrations. Au Qtr. 3 cl. Prereq: 603.

705  Advanced Welding Process Control Systems  UGRD 3
Principles of continuously variable and digital control systems for manual, mechanized, automatic, and feedback operation of arc, resistance, and advanced welding processes. Sp Qtr. 3 cl. Prereq: 605 or permission of instructor.

706  Welding of plastics and Composites  UGRD 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. Wi Qtr. 3.5 hr cl. Prereq: 620 or permission of instructor.

707  Adhesive Bonding and Mechanical J oining of Plastics  UGRD 3
Fundamentals of adhesive bonding science and technology and methods for mechanical joining of plastics including fasteners, swaging, staking, snap-flits and press-flits. Sp Qtr. Prereq: 620 or permission of instructor.

713  Joining of Specialty Metals  UGRD 3
Theory and practice of joining specialty metals is presented, with emphasis on jointability, jointing processes, and procedures and applications. Wi Qtr. 2-hr cl. 1-2-hr lab. Prereq: 610

714  Weldability  UGRD 3
Weldability of alloy systems-steel, stainless steels, nickel, aluminum, and titanium alloys-with reference to basic metallurgical phenomena, weldability testing, and interpretation; individual projects and presentations. Sp Qtr. 3 cl. Prereq: 611; prereq or concr: 612.

715  Special Topics in Welding Engineering  GRAD 3
The course will review the nature of weld defects and their prevention. Other topics include failure analysis and weldability testing. Sp Qtr. Prereq: 610. Student must have basic knowledge of physical metallurgy principles.

723  Analysis of Welding Systems  UGRD 3
Development of an analytical and empirical base for the selection of optimum parameters in the design and fabrication of welded structures. Au Qtr. 3 cl. Prereq: 620.

732  Ultrasonic Nondestructive Evaluation  UGRD 4
Principles of ultrasonic wave interaction with material structures with emphasis on nondestructive measurements of material discontinuities, properties, and non-uniformities. Wi Qtr. 3 cl. 1-3 hr lab. Prereq: 631 or permission of instructor; and Math 255 or 256 or 416.

736  Health and Safety  UGRD 3
Major health and safety hazards associated with welding and cutting; radiation, fumes, gases, and noise; discussion of hazard origin, technological control, physiological effects, and regulatory control. Wi Qtr. 3 cl. Prereq: 601 or permission of instructor.

740  Fitness-for-Service of Welded Structures  UGRD 3
The interrelationship of design, fabrication, nondestructive evaluation, fracture mechanics, and reliability concepts in establishing the overall fitness-for-purpose of welded structures. Sp Qtr. 3 cl. Prereq: 620 or permission of instructor.

755  Welding Process Control Laboratory  UGRD 1
Laboratory experiments in basic instrumentation and control systems for welding processes such as arc, resistance, electron-beam, and others. Sp Qtr. 1-3 hr lab. Concur. 705.

783H  Undergraduate Honors Program Research  UGRD 1-3
Honors program students are offered the opportunity to pursue independent project/research. Student presentations and thesis writing included. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Sr standing in WeldEng or equiv. Repeatable to a maximum of 6 cr hrs. Students must have a GPA of at least 3.4 and permission of instructor.

793  Individual Studies in Welding Engineering  UGRD 1-15
Individual Studies in Welding Engineering. Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

794  Group Studies  GRAD 1-6
Special advanced topics. Repeatable to a maximum of 18 cr hrs.

795  Graduate Seminar  UGRD 1
Presentations and discussion by graduate students and invited outside speakers on thesis research and current problems in welding engineering. Au, Wi, Sp Qtrs. 1 cl. Prereq: Grad or sr standing in WeldEng. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

801  Welding Arc Physics  GRAD 3
Theoretical study of the physics of welding arcs including processes of current maintenance and heat dissipation, arc radiation and spectra, arc stability, magnetic fields, and flows. Wi Qtr. 3 cl. Prereq: 800 or permission of instructor.

804  Advanced Laser Material Processing  GRAD 3
Advanced topics in laser material processing. Resonant and non-resonant phenomena in laser materials interaction. Wi Qtr. 3 cl.

806  Advanced Welding of Plastics and Composites  GRAD 3
Theoretical study of welding of thermoplastics and composites, including analysis of the basic welding steps and modeling, optimization and control of welding processes. * Wi Qtr. 3 cl. Prereq: 706 or permission of instructor.

821  Residual Stresses and Distortion in Weldments  GRAD 3
A study of the formation mechanisms of residual stresses and distortions; mathematical formulations and experimental analysis methods for distortion control. Wi Qtr. 3 cl. Prereq. 723.

894  Group Studies in Welding Engineering  GRAD 2-5
Special topics in welding engineering; the particular topic, credit hours, and the instructor will be announced in the quarter prior to the one in which the course is offered. Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 or hr

999  Research in Welding Engineering  GRAD 1-18
Research for thesis or dissertation purposes only. Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

Women's, Gender, and Sexuality Studies

110  Gender, Sex, and Power  UGRD 5
Introduces students from diverse backgrounds and disciplines to the interdisciplinary field of Women's Studies and to the study of gender, sex and power. We will draw on a variety of literature to analyze gender, race, sexuality and other dimensions of identity, past and present. We will place the study of US women and gender roles in broader transnational contexts of analysis. Su, Au, Wi, Sp Qtrs. 5 cl or 2 2-hr cl. Not open to students with credit for 101, 201, 202, or 210. GEC arts and hums cultures and ideas and soc sci individuals and groups and social diversity in the US course.

110H  Gender, Sex and Power  UGRD 5
Introduces students to the field of Women's Studies and the study of gender, sex and power. We will draw on a variety of literature to analyze gender, race, sexuality and other dimensions of identity, past and present. We will place the study of US women and gender roles in broader transnational contexts of analysis. Su, Au, Wi, Sp Qtrs. 5 cl or 2 2-hr cl. Not open to students with credit for 101, 201, 202, or 210. GEC arts and hums cultures and ideas and soc sci individuals and groups and social diversity in the US course.

215  Reading Women Writers  UGRD 5
Study of women writers' strategies for articulating experiences and using literature as a lens for social reality and catalyst for social and political change. GEC arts and hums llc course.

230  Gender, Sexuality, and Race in Popular Culture  UGRD 5
Explores how popular culture generates and articulates our understandings of gender and sexuality and their intersections with race and class. Prereq: English 110. GEC arts and hums VPA course.
282 Introduction to Queer Studies  UGRD  5
Introduces and problematizes foundational concepts of the interdisciplinary field of queer studies, highlighting the intersections of sexuality with race, class, and nationality. Not available to students with credit for English 282. GEC arts and hums culture and ideas and social diversity in the US course. Cross-listed in English.

294 Group Studies  UGRD  1-5
Special studies not otherwise offered. 5 cl. Repeatable to a maximum of 15 or hrs.

296H Topics in Women's Studies  UGRD  5
In-depth study in women's studies focusing on current issues in feminist analysis. Repeatable to a maximum of 10 or hrs.

300 Introduction to Feminist Analysis  UGRD  5
Introduction to principles of feminist analysis as they apply to a range of contemporary issues and institutions. Au, Wi, Sp Qtrs. 2-2 hr cl. Prereq: One of the following: 101, 110, 201, 210, 367.01, 367.04. Not open to students with credit for 299.

305 Gender and Sexuality in Global Perspective  UGRD  5
Investigates gender cross-culturally, especially in the non-Western world, in relation to traditional culture, colonialism, nationalism and global economy.

317 Hollywood, Women and Film  UGRD  5
A critical survey of the representation of women in Hollywood cinema, with examples drawn from the 1930's to the present. Learn how film has functioned in its representations of women and how and why women film makers have created alternative visions of women in film. Not open to students with credit for CompStd 317. GEC arts and hums VPA course.

320 Topics in Women's Studies  UGRD  5
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 10 or hrs.

322H Natives and Newcomers: U.S. Immigration and Migration  UGRD  5
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: English 110. Not open to students with credit for History 322H. GEC social diversity in the US and historical survey course. Cross-listed in History.

325 Issues in Women's Health  UGRD  5
An interdisciplinary inquiry into the issues affecting women's health and the politics of gender in the medical health care profession. 2.5-3 hr cl.

326 Women and Addiction: A Feminist Perspective  UGRD  5
An interdisciplinary feminist focus on addictive consequences of sex-role socialization, substance abuse, addiction in intimate relationships, and eating disorders; medical/social consequences of addiction among women. Not open to students with credit for 301.

340 Latina/Latino Experience in the U.S.  UGRD  5
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.

350 Feminist Perspectives on Women and Violence  UGRD  5
Use of a feminist, interdisciplinary approach to analyze selected national or international issues of interpersonal and institutionalized violence in which women are victims or perpetrators.

367.01 U.S. Women Writers: Text and Context  UGRD  5
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. 367.01H (honors) may be available.

367.02 U.S. Latina Writers: Text and Context  UGRD  5
Writing and analysis of U.S. Latina experiences, with emphasis on interdisciplinary relationships between literature and U.S. Latino socio-political history. 2-2 hr cl. Prereq: English 110 or equival. 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 AFAmASt or WGSS or CompStd or grad standing. Not open to students with credit for AFAmASt 545 or CompStd 545. Cross-listed in African-American and African Studies and Comparative Studies.

370 Sexualities and Citizenship  UGRD  5
A survey of cultural, social, and political issues related to historical and contemporary lesbian experience in the United States. 2-2 hr cl. GEC social diversity in the US course.

372 Modern Arabic Literature in Translation  UGRD  5
Reading and analysis of representative works of the 19th and 20th centuries by contemporary women authors. 372H (honors) may be available.

375 Women and Visual Culture  UGRD  5
Analysis of visual images of women in historical, racial, and class contexts. 2-2 hr cl.

385 Women in Political Leadership Internship  UGRD  5
This course offers students opportunities to learn leadership and policy making skills by working with Ohio women lawmakers.

389 Theory and Practice of Peer Outreach in Women's Studies  UGRD  5
Designed to prepare undergraduate students with the theoretical and practical skills necessary to present women's studies topics to middle and high school youth. 50 hrs field work. Prereq: 101 or 201, 110 or 210, or permission of instructor. This course is required training for students who participate in the women’s studies peer education outreach program (Peer Power).

494 Group Studies  UGRD  1-5
Special studies not otherwise offered; topic varies; students should consult department current course listing.

500 Feminist Perspectives on Globalization  UGRD  5
An exploration of the global dimensions of feminist research and politics with particular attention to feminism in the non-Western world. Prereq: 5 or hrs in WGSS or Honors standing or permission of instructor. Not open to students with credit for 597.

510 American Women's Movements  UGRD  5
An interdisciplinary analysis of the American women's movements, including historical, literary, sociological, and theoretical perspectives. 510H (honors) may be available.

520 Women of Color and Social Activism  UGRD  5
Examination of multiple forms of social activism among women of color from various parts of the world concerning local, national, and international issues. 2-2 hr cl. Prereq: 5 or hrs in WGSS or Honors standing or permission of instructor. GEC social diversity in the US course.

524 Women and Work  UGRD  5
The social, cultural, and historical factors that influence women's work in the U.S. and the multiple ways work is gendered.

527 Studies in Gender and Cinema  UGRD  5
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. Prereq: 317 or permission of instructor. Repeatable to a maximum of 10 or hrs.

535 Gender, Sexuality, and Science  UGRD  5
Examination of relationships between gender and science; topics include gendering of "science" and "nature," biological theories of sexual inequality, feminist critiques of science and technology. 2-2 hr cl. Prereq: One course in CompStd or WGSS. Not open to students with credit for CompStd 535. Cross-listed in Comparative Studies.

545 Intersections: Approaches to Race, Gender, Class, and Sexuality  UGRD  5
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 AFAmASt or WGSS or CompStd or grad standing. Not open to students with credit for AFAmASt 545 or CompStd 545. Cross-listed in African-American and African Studies and Comparative Studies.

550 History of Western Feminist Thought  UGRD  5
An introduction to and analysis of major texts of Western feminist theory as it has developed and changed since the Enlightenment. Prereq: 191 or 201, or 110 or 210, or 367.01; or equivs.

560 Chicana Feminism  UGRD  5
Course provides a general overview of Chicana feminist theory and practice from the early 1970's to the present. Prereq: 5 or hrs in WGSS or Honors standing or permission of instructor.
436 Women's, Gender, and Sexuality Studies

575 Issues in Contemporary Feminist Theory UGRD 5
Examination of particular contemporary issues which have crucial implications for feminist inquiry (topics vary).
Prereq: 299 or 300 or permission of instructor.

576 Women and Visual Cultures of Latin America UGRD 5
Analysis of Latin American women visual artists of 20th and 21st centuries, with emphasis on contemporary feminist theories of visual culture.
Prereq: 5 cr hrs in WGSSt or Honors standing or permission of instructor.

589 Internship in Feminist Theory and Collective Action UGRD 5
Field-based learning experience to explore the relationship between feminist theory and collective action; use of field work and class discussion to relate theory to practice.
Wi Qtr. Minimum 10 hrs field work per week. Prereq: 299 or 300, 15 cr hrs in WGSSt course work, and permission of instructor. Not open to students with credit for 489. Contact the department for additional information.

597 Gender and Democracy in the Contemporary World UGRD 5
Highlighting perspectives from various contexts across the globe, this course explores issues of gender and democracy in the contemporary world.
Prereq: Level 4 rank or permission of instructor. Not open to students with credit for PolitSc 597.03. GEC contemporary world course. Cross-listed in PolitSc 597.03.

620 Topics in Feminist Studies GRAD 5
Interdisciplinary in-depth analysis of selected topics in feminist research and interpretation; topic varies quarterly.
5 cr hrs. Prereq: 101 or 201, or 110 or 210, and at least 10 additional cr hrs in WGSSt or written permission of instructor. Repeatable to a maximum of 30 cr hrs. Contact the department for information.

623 African Women: History and Socioeconomic Change UGRD 5
Focuses on African women’s experiences: legal and socioeconomic status, religious and political roles, the impact of colonial and post-colonial developments, feminism and representation issues.
2 2-hr cl. Prereq: Recommended 505 for undergrads. Not open to students with credit for History 744. Cross-listed with History 744.

624 Women and Social Change in Latin America UGRD 5
Feminist perspectives to introduce students to Latin American women’s experiences and reality as perceived by those who study women and by themselves.
2 2-hr cl. Prereq: recommended undergraduate standing or grad standing; or permission of instructor.

657 Gender and National Identity in Russian Cinema UGRD 5
Explores changes of Russian national and gender identities during the twentieth century as reflected in Russian cinema.
2 2-hr cl. Prereq: 317 or Russian 360 or English 263 or 378 or FilmStd 270 or grad standing or permission of instructor. Cross-listed in Russian. Taught in English. No prior knowledge of Russian language required.

693 Individual Studies GRAD 1-5
Students may register for individual directed study in subjects not covered in regular course work.
Su, Au, Wi, Sp Qtr. Arr. Prereq: Jr standing or above; permission of instructor. Repeatable to a maximum of 15 cr hrs. No more than 5 cr hrs may be applied to WGSSt major or minor. This course is graded S/U.

699 Undergraduate Research in Women's Studies UGRD 1-15
Undergraduate research or creative activities in variable topics.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. Only 5 hrs can count toward major/minor. This course is graded S/U.

700 Introduction to Graduate Studies GRAD 5
Introduction to women's studies as an academic field of study and an orientation to the graduate program, facilities, resources, and people.
Au Qtr. 1 3-hr lec, 1 1-hr rec. Prereq: Grad standing in WGSSt.

702 Teaching Women’s Studies GRAD 5
Assist graduate students in teaching instructional responsibilities and developing necessary skills for college level teaching in women's studies.
Au Qtr. 1 3-hr lecture, 1 field obs. Prereq: Grad standing in WGSSt and TA.

710 Theorizing Difference GRAD 5
Examines theories of difference based on race, ethnicity, nationality, sexuality, and class and the ways difference defines and modifies women’s realities.
2 2-hr cl. Prereq: 10 or cr hrs of WGSSt course work and permission of instructor.

720 Theorizing Gender, Power, and Change GRAD 5
Examination of feminist theoretical approaches to the material conditions of women's lives and the changing structures of social, economic, and political power.
2 2-hr cl. Prereq: Grad standing in WGSSt or permission of instructor.

726 Gender and Public Policy GRAD 5
This graduate level course addresses gender and public policy with special attention to policy areas that most directly impact women’s lives.
2 2-hr cl. Prereq: 299 or 300, plus 5 additional WGSSt cr hrs at 300 or above; or grad standing.

740 Theorizing Gender Representation GRAD 5
Designed to introduce graduate students to the central debates that have characterized feminist theories of representation.
2 2-hr cl. Prereq: Grad standing in WGSSt or permission of instructor.

742 Feminism and the Cinema GRAD 5
Study of the relationship between feminist film theory and criticism and specific genres, historical periods, and issues in cinematic representation.
2 2-hr cl. Prereq: Grad standing in WGSSt or permission of instructor.

750 Violence Against Women: Theory and Response GRAD 5
Seminar on theories and women’s experiences of and responses to violence; special focus on evaluating theories and programs.
5 hrs cl. Prereq: Grad standing or 20 hrs of WGSSt course work or permission of instructor.

760 Survey of Feminist Methodologies GRAD 5
An overview of feminist methodological issues and dilemmas and an introduction to a variety of research methods.
1 cl. field research. Prereq: Grad standing in WGSSt or EduPL or permission of instructor. Not open to students with credit for EduPL 760. Cross-listed in Educational Policy and Leadership.

771 Feminism and Psychoanalysis GRAD 5
An analysis of major psychoanalytic writings about women and feminist responses to them.
2 2-hr cl. Prereq: Grad standing in WGSSt or permission of instructor. Repeatable to a maximum of 20 cr hrs.

780 Global/Transnational Feminisms GRAD 5
This course provides a broad comprehension of theoretical aspects of global and transnational feminisms.
Sp Qtr. Prereq: 700 and grad standing or permission of instructor. This course joins other foundational courses in our core theory offerings. This course provides an overview of theories and debates surrounding feminist organizing transnationally and from a comparative perspective. Issues covered include human rights movements, universalism/multiculturalism, development and economic policies, gender and globalization, and links between local activism and global campaigns.

783H Honors Research GRAD 3-5
A program of individual study for undergraduate honors students; may include individual conferences and reports; requires presentation and oral defense of an honors thesis.
Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a GPA of at least 3.50 in WGSSt courses; permission of thesis adviser and Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs. At least 8 cr hrs and 2 qtrs of enrollment are required of candidates for the BA degree with distinction in WGSSt. This course is graded S/U.

790 Interdepartmental Studies in the Humanities GRAD 3-5
Two or more departments offer courses on subjects of mutual interest. Repeatable to a maximum of 15 cr hrs.

810 Topics in Black Feminist Theory GRAD 5
Theoretical analysis of the politics and perceptions of womanhood in the black community.
Prereq: Grad standing in WGSSt or permission of Instructor. Repeatable to a maximum of 20 cr hrs. Cross-listed in African American and African Studies. Contact department for current course topic.

820 Topics in Gender, Power, and Social Change GRAD 5
Advanced study of variable topics relating to gender, power and change, both theoretical (especially materialist) and practical.
2 2-hr cl. Prereq: Grad standing in WGSSt or permission of instructor. Repeatable to a maximum of 20 cr hrs. Contact department for current course topic.

840 Topics in Representing Gender GRAD 5
In-depth investigations of topics and genres central to feminist theories of gender representation, including considerations of aesthetics, subjectivity, intersectionality, narrative, and spectators.
5 cl. Prereq: 740, 742, or permission of instructor. Repeatable to a maximum of 15 cr hrs. Contact department for current course topic.

860 Topics in Feminist Studies GRAD 5
Feminist studies on a variety of topics at the PhD level.
5 cl. Prereq: PhD standing. Repeatable to a maximum of 15 cr hrs. Contact department for current course topic.

863 Women's Studies Practicum GRAD 3-5
Internship placement in an agency or organization serving women to provide an opportunity to integrate feminist theory and practice.
Su, Au, Wi, Sp Qtrs. Prereq: 700 and at least 10 additional cr hrs of WGSSt course work and permission of instructor. Repeatable to a maximum of 10 cr hrs. Each hr of cr corresponds to 3 hrs per week of internship for 10 wks. This course is graded S/U.

870 Topics in Sexuality Studies GRAD 5
Contemporary biological, psychological, social, legal, and political theories of sexuality.
Prereq: PhD standing. Repeatable to a maximum of 15 cr hrs. including cr hrs earned in 850. Contact department for current course topic.

880 Topics in Transnational Feminisms GRAD 5
This variable topic course includes various possible offerings on the subject of transnational feminisms.
Prereq: 720.
Yiddish

101 Elementary Yiddish I UGRD 5
Introduction to Yiddish; development of listening, reading, speaking and writing skills. Au, Wi Ohrs. 5 cl. Prereq: 101. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course. FL Admis Cond course.

102 Elementary Yiddish II UGRD 5
Continuation of 101; further development of listening, reading, speaking and writing skills. Au, Wi Ohrs. 5 cl. Prereq: 102. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course. FL Admis Cond course.

103 Intermediate Yiddish I UGRD 5
Continued study of Yiddish; development of listening, reading, speaking and writing skills; reading of simplified literary texts about Yiddish culture. Wi, Sp Ohrs. 5 cl. Prereq: 102. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course.

104 Intermediate Yiddish II UGRD 5
Readings of Yiddish short stories and poems with attention to literary and cultural appreciation; development of basic language skills. Au, Sp Ohrs. 5 cl. Prereq: 103. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course.

241 Yiddish Culture UGRD 5
Introductory survey of political, social, ideological, and religious trends as reflected in Yiddish culture, especially folklore and literature. Au Ohrs. 5 cl. Prereq: 103. Not open to students with credit for 341. GEC arts and hums cultures and ideas and social diversity - international issues (Western) course.

293 Individual Studies UGRD 1-5
Individual Studies. Su, Au, Wi, Sp Ohrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

294 Group Studies UGRD 1-5
Special topics announced in the quarter previous to the one in which the course is offered. Su, Wi, Sp Ohrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

367 Jewish-American Voices in U.S. Literature UGRD 5
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. 2 2-hr cl. Prereq: English 110 or 111 or equiv, and soph standing or above. GEC second writing and arts and hums cultures and ideas course.

371 Yiddish Literature in Translation UGRD 5
Reading, analysis, and discussion of representative works and of the development of major movements and genres in Yiddish literature. 5 cl. Taught in English. GEC arts and hums lit and social diversity - international issues (Western) course.

399 The Holocaust in Literature and Film UGRD 5
Reading, analysis, and discussion of representative works pertaining to the Holocaust; from the perspectives of the German and Ashkenazic traditions. 2 2-hr cl. Not open to students with credit for German 399. Cross-listed in German. Taught in English. GEC arts and hums lit and social diversity - international issues (Western) course.

401 Advanced Yiddish I UGRD 5
Reading in literary and journalistic prose, with practice in conversation and composition; intensive review of Yiddish grammar. 5 cl. Prereq: 104 or equiv.

402 Advanced Yiddish II UGRD 5
Readings in texts from the nineteenth century to the present with emphasis on contemporary prose; practice in conversation and composition. 5 cl. Prereq: 401 or equiv.

403 Advanced Yiddish Conversation and Composition UGRD 5
Intensive practice in speaking and writing Yiddish, based on contemporary Yiddish literary usage; conducted entirely in Yiddish. ▲ 5 cl. Prereq: 402 or permission of instructor.

611 History of the Yiddish Language UGRD 5
Linguistic history of Yiddish; Yiddish dialect formation; analysis of Yiddish documents from the 13th century to the present; Yiddish in the context of Jewish interlinguistics. 5 cl. Prereq: 402 or equiv or permission of instructor.

612 Language and Culture Geography in Ashkenaz UGRD 5
Development and description of Yiddish dialect areas; linguistic atlases and the mapping of Yiddish dialect and Ashkenazic cultural features; dialect networks; development of standard Yiddish. 2 2-hr cl.

641 Places in Ashkenaz UGRD 5
Jewish society of a specific place (e.g., Vienna; Amsterdam); tradition and modernity; assimilation and continuity; cultural, literary, and linguistic expression; arts and entertainment. 2 2-hr cl. Prereq: Jr standing or permission of instructor. Not open to students with credit for German 641, without permission of instructor. Repeatable to a maximum of 15 cr hrs. Specific topics not repeatable for credit.

651 Modern Yiddish Prose UGRD 5
Reading and analysis of short stories and novels representative of major developments and trends in Yiddish prose of the 19th and 20th centuries. 5 cl. Prereq: 402 or equiv.

671 Yiddish for Speakers of German UGRD 5
Yiddish for speakers of German; stylistics of academic Yiddish; introduction to bibliography in Yiddish and Ashkenazic studies. 3 1.3-hr cl. Prereq: German 201 or higher or equiv, or grad standing in German. May not be used to satisfy any of the undergraduate foreign language requirement.

693 Individual Studies UGRD 1-5
Individual Studies. Su, Au, Wi, Sp Ohrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

694 Group Studies UGRD 1-5
Special topics to be announced in the quarter previous to the one in which the course is offered. Su, Wi, Sp Ohrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

697 Study at a Foreign Institution UGRD 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Su, Au, Wi, Sp Ohrs. Prereq: Permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. This course is Progress ("P") graded. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

721 Studies in Yiddish Literature UGRD 5
Advanced study of specific literary periods, figures, and/or topics involving extensive reading and discussion of appropriate primary and secondary source materials. 1-3 cl. Prereq: 5 hrs of Yiddish at the 600 level. Repeatable to a maximum of 15 cr hrs.

783H Honors Research UGRD 3-5
A program of research for each student which includes individual conferences and which culminates in an honors thesis or oral defense. Su, Au, Wi, Sp Ohrs. Prereq: Approved candidacy for graduation with distinction, which includes faculty adviser and ASC Honors Committee approval of project, a minimum 3.50 pt-hr ratio in the field of distinction, sr standing, and CPHR in the commensurate with honors program membership. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

811 Seminar in Yiddish Studies GRAD 5
In-depth study of a selected topic or issue in Yiddish literature, linguistics, or intellectual culture. 3-5 cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

998 Research in Yiddish GRAD 1-10
Research for thesis purposes only. Su, Au, Sp Ohrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

Yoruba

101 Elementary Yoruba I UGRD 5
Introduction to elementary Yoruba with emphasis on oral proficiency. ▲ Not open to native speakers of this language through regular course enrollment or EM credit. Fl Admis Cond course.

102 Elementary Yoruba II UGRD 5
Continuation of 101 with emphasis on oral proficiency. ▲ Prereq: 101. Not open to native speakers of this language through regular course enrollment or EM credit. FL Admis Cond course.
### Yoruba

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>103</td>
<td>Intermediate Yoruba I</td>
<td>UGRD 5</td>
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<tr>
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<td>Intermediate Yoruba, combining oral and reading skills.</td>
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<td>Prereq: 102. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course.</td>
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<tr>
<td>104</td>
<td>Intermediate Yoruba II</td>
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<tr>
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<td>Continuation of 103, combining oral and reading skills.</td>
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<tbody>
<tr>
<td>101</td>
<td>Elementary Zulu I</td>
<td>UGRD 5</td>
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<tr>
<td></td>
<td>Introduction to elementary Zulu, using a proficiency-based approach.</td>
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<tr>
<td></td>
<td>Not open 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. GEC for lang course.</td>
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<tr>
<td>102</td>
<td>Elementary Zulu I</td>
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