Course Number Change

**General Studies**

Autumn 2019 Semester

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Name</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1201.01T</td>
<td>College Orientation</td>
<td>½</td>
<td>Promotes student success in college and preparation for a career; explores personal and career interests, needs, goals, and the support services available for student success.</td>
</tr>
</tbody>
</table>

**Italian**

Summer 2019 Term

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Name</th>
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<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1101.71</td>
<td>Italian Distance Learning I</td>
<td>4</td>
<td>This online version of Italian 1101.01 is designed for development of listening, reading, speaking, writing skills and cultural competency. Taught in Italian. Note: Online courses are not for everyone; the successful student is organized, self-motivated, and comfortable with technology. Prereq: Not open to students with credit for 1101, 1101.01, 1101.02, 1101.03, 1101.61, or 5101. This course is available for EM credit. GE for lang course.</td>
</tr>
</tbody>
</table>

Summer 2019 Term

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<tbody>
<tr>
<td>1102.71</td>
<td>Italian Distance Learning II</td>
<td>4</td>
<td>This online version of Italian 1102.01 is designed for development of listening, reading, speaking, writing skills and cultural competency. Taught in Italian. Note: Online courses are not for everyone; the successful student is organized, self-motivated, and comfortable with technology. Prereq: 1101, 1101.01, 1101.02, 1101.03, 4 cr hrs of 1101.61, or 1101.71. Not open to students with credit for 1102, 1102.01, 1102.02, 1102.03, 1102.61, or 5101. This course is available for EM credit. GE for lang course.</td>
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Summer 2019 Term

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</thead>
<tbody>
<tr>
<td>1103.71</td>
<td>Italian Distance Learning III</td>
<td>4</td>
<td>This online version of Italian 1103.01 is designed for development of listening, reading, speaking, writing skills and cultural competency. Taught in Italian. Note: Online courses are not for everyone; the successful student is organized, self-motivated, and comfortable with technology. Prereq: 1102, 1102.01, 1102.02, 1102.03, 4 cr hrs of 1102.61, or 1102.71. Not open to students with credit for 1103, 1103.01, 1103.02, 1103.03, 1103.61, or 5101. This course is available for EM credit. GE for lang course.</td>
</tr>
</tbody>
</table>

**Public Health: Environmental Health Sciences**

Autumn 2019 Semester

<table>
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<th>Course Number</th>
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</thead>
<tbody>
<tr>
<td>6390</td>
<td>Major Human Diseases in Global Public Health</td>
<td>3</td>
<td>Public health is focused on preventing illnesses and injuries or intervening to decrease the impact to populations of people. Emphasize on basic physiology, pathophysiology, and clinical evaluation of major human diseases that have significant global public health impact epidemiologically, politically, and economically with a focus on disease causes and prevention. Prereq: Not open to students with credit for 7390.</td>
</tr>
</tbody>
</table>
Theories and Biological Basis of Substance Misuse

The focus of this course is to explore traditional and contemporary theories and their supporting evidence related to substance misuse and the etiology of substance use disorders (including addiction). Satisfactory completion of introductory psychology and introductory biology course content is preferable/recommended, but not required.

Prereq: Jr., Sr., or Grad standing; or permission of instructor. Not open to students with credit for 3805.

Diagnosis and Treatment of Substance Use Disorders

The focus of this undergraduate elective course is to introduce and review concepts and current issues related to screening, assessment, diagnosis, and treatment planning for individuals with alcohol and other drug (AOD) use problems.

Prereq: 5805.

Preventing Substance Misuse

Introduces students to evidence-based strategies and techniques that are used to prevent individuals from developing a substance use disorder; focuses on prevention as a science and highlights several theories and methodologies that govern prevention practice. Designed to meet chemical dependency educational content for Ohio’s Licensed Chemical Dependency Board's Prevention Professional credentials.

Prereq or concur: 5805.

Group & Relationship Approaches in Substance Misuse Treatment

Content includes review of the evidence base and techniques for contemporary and historical models of substance abuse intervention and prevention, including vulnerability, risk, resilience and protective factors. This course is designed to meet chemical dependency educational content for Ohio’s Licensed Chemical Dependency Board's Prevention Professional credentials.

Prereq: 5805. Not open to students with credit for 3808.

Migrants and Refugees: The Anthropology of Mobility

This course is an anthropological investigation of human mobility with a focus on the movement of migrants and refugees. Credit for 2202 is recommended but not required.

Sports Analytics

Analytical techniques and quantitative methods are on the rise in many areas of industry, and, of late, have entered the sports realm. Students will expand their critical thinking skills, explore the current state of sports analytics, summarize data creatively, improve data-based decision making, and optimize output in real-world situations as well as improve presentation skills to the non-quant.

Prereq: Enrollment in SMB-Analytics program, or permission of instructor.
The basis for any new venture is having a compelling value proposition that can be feasibly executed and translated into a viable, sustainable business model. In other words, being able to Create Value, Deliver Value and Capture Value. For the Discovery Workshop, we will only focus on the first piece of the overall equation, which is Value Creation.

This course covers the role of leadership in management and the use of power and influence to motivate individuals and effect organizational change. It provides students with the opportunity to develop personalized leadership development plans based on current literature, case study, and behavioral assessments.

Prereq: Enrollment in SMB-Analytics program, or permission of instructor.

Introduction to sales career roles, relationship building, and the consultative process, with an emphasis on individual strengths and personal branding.

Introduction to enterprise resource planning (ERP) systems with emphasis on understanding the differences between the major ERP systems on the market and using an ERP system to complete exercises for common business functions.

Prereq: 4386.

Students will learn about the unique challenges and business environment facing non-profit organizations through the design, execution, and presentation of a socially-impactful consulting project with/for a local non-profit organization.

Prereq: MBA 6293, or permission of instructor.

Chemistry 1205 is a preparatory course for under-prepared students previously enrolled in Chemistry 1210/1610. Chemistry 1205 will prepare students to continue on and complete Chemistry 1210/1610 in a subsequent semester. The textbook for Chem 1205 will be the same textbook used in Chem 1210/1610.

Prereq: Failed or withdrew from Chem 1205, or Math 1075 or Math placement N.

Leading change in a community setting is important to addressing complex, adaptive community challenges. This course will teach students how to work with a community (of place, interest, etc.) through the difficult process of change by engaging them in leadership development. This course is meant to serve as an advanced course for students learning about leadership.

Prereq: ENR 3500, or permission of instructor.
### Programming in Python

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>4256</td>
<td>Programming in Python</td>
</tr>
</tbody>
</table>

Python programming for students well-versed in programming with another imperative language.

Prereq: 2122, 2123, or 2231; and 2321. This course is graded S/U.

### Consumer Sciences: Hospitality Management

#### Healthcare Environmental Services Internship

<table>
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</thead>
<tbody>
<tr>
<td>3191.02</td>
<td>Healthcare Environmental Services Internship</td>
</tr>
</tbody>
</table>

Supervised and practical experience at a department approved internship site related to environmental services in healthcare. Includes investigation and analysis of assigned problems and documentation of experience.

Prereq or concur: 2200 and 3200. This course is graded S/U.

### Infection Prevention in Healthcare and Hospitality

<table>
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<tr>
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<tbody>
<tr>
<td>3200</td>
<td>Infection Prevention in Healthcare and Hospitality</td>
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</tbody>
</table>

An application and discussion of introductory Microbiology, Epidemiology, Infection Prevention and Sanitation in healthcare and hospitality facilities.

### Electrical and Computer Engineering

#### Empowering the Entrepreneurial Electrical and Computer Engineer

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<tbody>
<tr>
<td>5078</td>
<td>Empowering the Entrepreneurial Electrical and Computer Engineer</td>
</tr>
</tbody>
</table>

This course teaches entrepreneurial minded engineers the process of value creation from their ECE relevant technology or inventions. Topics covered will include self-assessment as an entrepreneur and innovator, assessment new venture planning and project management, leadership and team building.

Prereq: 3010, 3020, 3030, 3040, or 3050; or Grad standing in Engr. Not open to students with credit for 5194.13.

#### Si and Wide Band Gap Power Devices

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<tr>
<td>5234</td>
<td>Si and Wide Band Gap Power Devices</td>
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</table>

Basic design and operation of Si and Wide Band Gap (WBG: SiC, GaN and ultra wide band gap semiconductors) power devices and the applications of commercial devices in power electronics applications. Trade-offs between various devices. Static and dynamic operation. Comparison of Si and SiC devices and design differences.

Prereq: 3030, or Grad standing in Engr or Physics. Not open to students with credit for 5194.07.

#### Advanced Hardware Architecture Design Techniques

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<tbody>
<tr>
<td>5560</td>
<td>Advanced Hardware Architecture Design Techniques</td>
</tr>
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</table>

This course introduces highly-practical methodologies and techniques that can be broadly used to improve the efficiency and achieve speed-area-power tradeoffs in the design of application-specific hardware implementation architectures for various algorithms. Efficient implementation architectures of commonly used arithmetic and digital signal processing functional blocks will also be discussed.

Prereq: 2050, and prereq or concur: 3561 or 3050; or Grad standing in Engr; or permission of instructor. Not open to students with credit for 5194.08.

#### Infrared Detectors and Systems

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<tbody>
<tr>
<td>6533</td>
<td>Infrared Detectors and Systems</td>
</tr>
</tbody>
</table>

This course covers the basics of infrared photodetectors and systems. It will include basic geometrical optics, radiometry, figures of merit and types of infrared detectors.

Prereq: 5530, or permission of instructor. Not open to students with credit for 5194.10.

### Economics

#### Infrared Detectors and Systems

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<td>Infrared Detectors and Systems</td>
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This course covers the basics of infrared photodetectors and systems. It will include basic geometrical optics, radiometry, figures of merit and types of infrared detectors.

Prereq: 5530, or permission of instructor. Not open to students with credit for 5194.10.
### Engineering

**Industrial Organization IV: Empirical Research Methods**
- **Code:** 8876
- **Units:** 3
- **Description:** Recently developed techniques for estimating market power and costs with incomplete data, with applications to antitrust economics. The goal is to give you an understanding of state of the art empirical tools, with the purpose of preparing students for research.
- **Prereq:** 8714, and permission of instructor.

### Engineering Education

**Translating Engineering Research to K-8 (TEK8)**
- **Code:** 6850S
- **Units:** 3
- **Description:** Guides graduate students through the development of design challenges inspired by prior research experiences. Develops the skills to teach engineering in under-resourced schools & recognize how to relay engineering skills to diverse populations. Design challenges are created to be age-appropriate for middle school, low cost, & facilitated by someone with little technical background in <90 minutes.

### Educational Studies: Special Education

**Research in Engineering Education for Dissertation**
- **Code:** 8999
- **Units:** 1 - 18
- **Description:** Research in Engineering Education for Dissertation.
- **Prereq:** Enrollment in EngrEdu Grad program. Repeatable. This course is graded S/U.

### Food, Agricultural, and Biological Engineering

**Sustainable Land and Water Systems**
- **Code:** 5350
- **Units:** 2
- **Description:** An interdisciplinary analysis of interactions of land and water systems, and how upstream management and behavior impacts downstream aquatic systems. A primary focus will be the analysis, comparison and solutions related to eutrophication of coastal systems. This will be supported with research in related disciplines, field experiences, and exploration of stakeholder viewpoints and behaviors.
- **Prereq:** One course in Biology, EarthSc, Econ, EEOB, Engr, Psych, or PubHlth, or equiv.; or Grad standing.

### General Studies

**College Orientation for Transfer Students**
- **Code:** 1201.02T
- **Units:** ½
- **Description:** Introduction to the advanced steps and opportunities for success in a life-long journey of becoming an educated person as you integrate into the University and ATI communities.
### Autumn 2019 Semester

**5100  Introduction to Assistive Technology**  
**UG  3**  
Students learn how to develop and implement assistive technology (AT) devices and services. The course includes information on disability, computer access/technology, alternative and augmentative communication, electronic cognitive devices, driver's rehabilitation, low vision technologies, seating and wheeled mobility, electronic activities of daily living, and home automation.  
Prereq: Permission of instructor.

### Law

**6060  Analysis of Client Files for LL.M.**  
**L  2**  
Practice skills through a series of reading/writing based simulations. Each simulation will include a client file and short library of related materials. Students will review the designated materials and then complete an assigned task from a supervising attorney.  
Prereq: Enrollment in LLM program.

### Mechanical Engineering

**6661  Advanced CAE Simulation for Structural Design**  
**G  4**  
Advanced FE modeling of nonlinear structural problems; min. weight design and topology optimization. Includes boundary, geometric and material nonlinearities, both rate independent and dependent. The emphasis is on modeling decision making and validation. This is not a traditional FE theory class but a hands-on, software-intensive modeling and simulation class with a significant lab component.  
Prereq: 5139; or Grad standing in AeroEng, CivilEn, MatScEn, or MechEng.

### Microbial Infection and Immunity

**4998  Undergraduate Research in Microbial Infection and Immunity**  
**U  1 - 5**  
This course provides an opportunity for individualized study in the fields microbial infection and immunity. This research-focused course will allow students the opportunity to participate in a research environment under the supervision of one of the department's faculty members.  
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs or 3 completions. This course is graded S/U.

**5100  Current Topics in Virus-Host Interactions**  
**UG  1**  
Weekly members of the Viruses and Emerging Pathogens thematic area of the OSU Infectious Disease Institute will present a seminar on their cutting-edge virology research followed by a discussion. Topics will include basic virology, antiviral immunity, vaccines, viral pathogenesis, and virus discovery.  
Prereq: Micrbio 3704 or 5149, or permission of instructor. Repeatable to a maximum of 3 cr hrs.

**7400  Current Topics in Virus-Host Interactions**  
**G  1**  
Weekly members of the Viruses and Emerging Pathogens thematic area of the OSU Infectious Disease Institute will present a seminar on their cutting-edge virology research followed by a discussion. Topics will include basic virology, antiviral immunity, vaccines, viral pathogenesis, and virus discovery.  
Prereq: BSGP 7000 or equiv., or permission of instructor. Repeatable to a maximum of 3 cr hrs.

### Molecular Genetics

**New Course**
This interdisciplinary course (crosslisted as PHILOS 2690) provides science-based exposure to topics in classical and modern genetics but with an emphasis on social and ethical issues. Together we will discuss what genes are, and how they work, and how your genome influences traits and behaviors in the context of social beliefs and philosophy.

Prereq: Not open to students with credit for Philos 2690. Cross-listed in Philos.

**Optometry**

**Optometry**

**Summer 2019 Term**

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<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>6440.02</td>
<td>Ophthalmic Dispensing</td>
<td>1-6</td>
<td>Clinical experience in ophthalmic design and dispensing; education and experience in dispensary management. Prereq: 2nd yr standing in Optom. Repeatable to a maximum of 30 cr hrs or 8 completions.</td>
</tr>
</tbody>
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<tbody>
<tr>
<td>6450.07</td>
<td>Community Outreach</td>
<td>1-12</td>
<td>Clinical experience in specialized phases of eyecare: community outreach. Prereq: 3rd yr standing in Optom. Repeatable to a maximum of 30 cr hrs or 8 completions.</td>
</tr>
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<tr>
<td>7450.04</td>
<td>Student Health Care</td>
<td>1-12</td>
<td>Clinical experience in specialized phases of eyecare: student health care. Prereq: 4th yr standing in Optom. Repeatable to a maximum of 30 cr hrs or 8 completions.</td>
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</table>

**Philosophy**

**Philosophy**

**Autumn 2019 Semester**

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<tr>
<td>2690</td>
<td>Genes and Society</td>
<td>3</td>
<td>This interdisciplinary course (crosslisted as MOLGEN 2690) provides science-based exposure to topics in classical and modern genetics but with an emphasis on social and ethical issues. Together we will discuss what genes are, and how they work, and how your genome influences traits and behaviors in the context of social beliefs and philosophy. Prereq: Not open to students with credit for MolGen 2690. Cross-listed in MolGen.</td>
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**Physical Therapy**

**Physical Therapy**

**Autumn 2019 Semester**

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<tr>
<td>6489</td>
<td>Acute Care Integrated Clinical Experience</td>
<td>½</td>
<td>This course is designed to provide the student with an integrated clinical experience reflecting didactic preparation to date. This is a part time acute care clinical experience at an affiliated inpatient acute care facility with the goal of practicing techniques from the acute care components of the curriculum and documentation. Prereq: Enrollment in the Doctorate in Physical Therapy program. This course is graded S/U.</td>
</tr>
</tbody>
</table>
Autumn 2019 Semester
5506  Administration of Criminal Justice Policy
U  G  3
Students will become familiar with the structure of the criminal justice system and the application of public management and organizations theory to the criminal justice system. Many of the applications will focus on Ohio, but the theories and concepts are broadly applicable to the American system of criminal justice.

Autumn 2019 Semester
6530  Negotiation for the Public Sector
G  1
Negotiation skills have been identified as critical for effective, successful public management and leadership. Explores the major concepts and theories of negotiation to improve negotiation skills. Through readings, role play exercises and class discussion, students develop an understanding of individual negotiation styles and core approaches to negotiation and dispute resolution.
Prereq: Grad standing, or permission of instructor.

Public Health

Autumn 2019 Semester
3998  Undergraduate Public Health Research Seminar
U  2
This seminar is designed for undergraduate students that are public health majors or pre-majors that are considering getting involved with research. In this seminar, students will learn about broad categories of research (for example, human subjects versus laboratory) and the ethical considerations for different types of research studies.
Prereq: Enrollment in the Public Health major or pre-major, or permission of instructor. This course is graded S/U.

Respiratory Therapy

Autumn 2019 Semester
7015  Public Health Data Analytics II
G  3
The focus of this course is on the appreciation of data analytics as applied to current and emerging public health issues.
Prereq: 5015, or permission of instructor.

Slavic Languages and Literatures

Autumn 2019 Semester
2365.99  Sports, Socialists, and Society in Russia and Eastern Europe (Online)
U  3
This course looks at the development of sports as a substitute and arena for battle between countries, as well as the rise of sports culture more generally in Central and Eastern Europe in terms of nationhood, politics, and corporeality. In this course, students will learn about the history and culture of sports, spectatorship, fandom, the Cold War, and Central and Eastern Europe.

Speech and Hearing Science

Autumn 2019 Semester
7700  Ethical Issues in Advanced Practice
G  2
Focus on ethical issues in advanced Respiratory Therapy practice. Ethical principles, case studies and simulated clinical scenarios in advanced respiratory care will be reviewed as students develop skills in analyzing, synthesizing and integrating ethics to support their positions.
Prereq: Enrollment in Master of Respiratory Therapy (MRT) program.

Autumn 2019 Semester
2365.99  Sports, Socialists, and Society in Russia and Eastern Europe (Online)
U  3
This course looks at the development of sports as a substitute and arena for battle between countries, as well as the rise of sports culture more generally in Central and Eastern Europe in terms of nationhood, politics, and corporeality. In this course, students will learn about the history and culture of sports, spectatorship, fandom, the Cold War, and Central and Eastern Europe.

New Course
Autumn 2019 Semester
6751 Clinical Seminar in Speech and Language Disorders I
G 1
Lectures, discussions and labs covering the fundamentals of treatment design and case management for Speech-Language Disorders.
This course is graded S/U.

Autumn 2019 Semester
6752 Clinical Seminar in Speech and Language Disorders II
G 1
Lectures, discussions and labs covering the fundamentals of treatment design and case management for Speech-Language Disorders.
Prereq: 6751. This course is graded S/U.

Autumn 2019 Semester
6753 Clinical Seminar in Speech and Language Disorders III
G 1
Lectures, discussions and labs covering the fundamentals of treatment design and case management for Speech-Language Disorders.
Prereq: 6752. This course is graded S/U.

Autumn 2019 Semester
6754 Clinical Seminar in Speech and Language Disorders IV
G 1
Lectures, discussions and labs covering the fundamentals of treatment design and case management for Speech-Language Disorders.
Prereq: 6753. This course is graded S/U.

Autumn 2019 Semester
6755 Clinical Seminar in Speech and Language Disorders V
G 2
Lectures, discussions and labs covering the fundamentals of treatment design and case management for Speech-Language Disorders.
Prereq: 6754. This course is graded S/U.

Autumn 2019 Semester
6770 Topics in Pediatric Medical Speech-Language Pathology
G 2
Introduction to specialty topics related to complex pediatric medical conditions and their relevance to speech-language pathologists in all clinical settings.
Prereq: 6761, 6762, 6763, and 6764.

Geography GEOG

Autumn 2019 Semester
8902 Applied Climatology
G 3
Analysis of climatic and environmental change on various time scales; human impact on climate; theory and application of long-range and climate forecasting.
Prereq: 5941 (623.01) or permission of instructor. Not open to students with credit for 823.

History of Art HISTART

Autumn 2019 Semester
4630 American Art
U 3
A study of architecture, painting, and sculpture in America.
Prereq: Soph standing, and 2002 (202), and English 1110 (110). Not open to students with credit for 330 or 530.
GE VPA course.
## Kinesiology: Sport, Fitness, and Health Program

**Autumn 2019 Semester**

<table>
<thead>
<tr>
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<th>Credits</th>
<th>Prerequisites</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1151</td>
<td>Strength Training II</td>
<td>1</td>
<td>Strength and power training; advanced anaerobic and speed conditioning. Prereq: 1148.04 or 1149.04, or EduPAES 1148.04 or 1149.04, or equiv. Repeatable to a maximum of 2 cr hrs or 3 completions.</td>
<td>Yes</td>
</tr>
</tbody>
</table>

## Music

**Autumn 2019 Semester**

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<tbody>
<tr>
<td>7740</td>
<td>Studies in Music before 1600</td>
<td>3</td>
<td>Prereq: 2243 (243) or equiv, 4531 (531) or equiv; and grad standing. Not open to students with credit for 740 or 741.</td>
<td>No</td>
</tr>
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</table>

## Veterinary Clinical Sciences

**Summer 2019 Term**

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<tbody>
<tr>
<td>8844.12</td>
<td>Advanced Large Animal Internal Medicine: Toxicology</td>
<td>1</td>
<td>Prereq: DVM or equiv; or permission of instructor.</td>
<td>No</td>
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</table>

## Remove from Withdrawal

## Occupational Therapy

**Summer 2019 Term**

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<thead>
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<tbody>
<tr>
<td>6230</td>
<td>Orthopedics in Occupational Therapy</td>
<td>4</td>
<td>Prereq: Enrollment in the Doctorate of Occupational Therapy program.</td>
<td>No</td>
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</table>

## Update Course

## Advanced Computing Center for the Arts and Design

**Autumn 2019 Semester**

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<tr>
<td>5002</td>
<td>3D Computer Animation: Form, Light and Motion I</td>
<td>3</td>
<td>Prereq: 5001 for students enrolled in the MIP (Moving Image Production) program.</td>
<td>No</td>
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## Aeronautical and Astronautical Engineering

**Autumn 2019 Semester**

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

Component: LEC  LAB
### Spring 2020 Semester

**4518  Design of Space Vehicles and Systems II**

**U  3**

Continued from 4517: Preliminary and detailed design of space vehicle components. Design of a space vehicle/system, and mission scenarios simulation via computer software.  
**Prereq:** 4517, and enrollment as AeroEng-BS student (No pre-majors can enroll in this course).

**Components:** LEC  LAB  REC

### Business Admin: Finance

**BUSFIN**

**Autumn 2019 Semester**

**7200  Financial Software Applications**

**G  3**

This hands-on course covers the application of financial software tools and financial modeling. Exposure to real world applications used in corporate finance, investment banking, private equity, and asset management. Apply models relating to project analysis, capital budgeting, financial statement analysis, equity intrinsic values, capital structure, portfolio mgmt, leveraged buyouts, and M&A.  
**Prereq:** MBA 6223, or enrollment in SMB-Finance program.

### Business Admin: Management & Human Rsrcs

**BUSMHR**

**Autumn 2019 Semester**

**7244  Negotiations**

**G  3**

Highlight the components of an effective negotiation and teach students to analyze their own behavior in negotiations. Largely experiential, course provides students with an opportunity to develop their skills by participating in negotiations and integrating their experiences with the principles presented in the assigned readings and course discussions.  
**Prereq:** Enrollment in Fisher College of Business graduate programs.  
Not open to students with credit for 7240, 7241, or 7345.

### Communication

**COMM**

**Autumn 2019 Semester**

**2131  Business and Professional Speaking**

**U  3**  
Campus: COL  MRN

Train students in public speaking and developing interpersonal skills for business and the professions.

### Electrical and Computer Engineering

**ECE**

**Summer 2019 Term**

**5023  Introduction to Data Converters and Phase-Locked Loops**

**U  G  3**

This course focuses on fundamentals of data converters and timing circuits, including discrete-time analog/mixed signal analysis and signal conditioning for asynchronous and synchronous computing. The topics include analog switches, sampling circuits, switched-capacitor amplifiers and filters, ADCs, DACs, PLLs, DLLs and discrete-time neural networks.  
**Prereq:** 4021, or Grad standing in Engr or Physics.

**Autumn 2019 Semester**

**5037  Solid State Electronics and Photonics Laboratory**

**U  G  4**

Introduction to introduction to laboratory techniques for semiconductor device fabrication including photolithography, oxidation, diffusion, chemical processes, reactive ion etching, and metallization, fabrication and measurements of visible light emitting diodes (LED) and GaN High Electron Mobility Transistor (HEMT).  
**Prereq or concur:** 3030, and acceptance in ECE, MSE or EngPhysics major; or Grad standing in Engineering, Biological Sciences, or Math and Physical Sciences.
Autumn 2019 Semester
5833  Organic and Printed Flexible Electronics
U  G  3
Conducting organic small molecules and polymers (structural, optical and electrical properties); printable metal-oxide semiconductors; Printing techniques, organic light emitting diodes; transport and carrier injection; organic transistors; organic lasers.
Prereq: 3030, or permission of instructor for non-ECE majors; or Grad standing in engineering, biological sciences, or math and physical sciences. Not open to students with credit for 7833 or 5194.04.

Summer 2019 Term
7020  Advanced Data Converters and Phase-Locked Loops
G  3
A comprehensive overview of the most recent system architectures of data converters and phase-locked loops.
Provides a good understanding how performance specifications and process technology limitations lead to implementation decisions. The presented principles are illustrated by examples and real life case studies.
Prereq: 5021 or 5023, or permission of instructor.

Environment and Natural Resources
ENR

Autumn 2019 Semester
5210  US Environmental Impact Assessment
U  G  3
Study of impact of human activity in natural resources through evaluation of environmental impact.
Prereq: Jr, Sr, or Grad standing.

Autumn 2019 Semester
5270  Soil Fertility
U  G  3
Provides a broad overview of the principles of soil fertility, plant nutrition, & nutrient management in managed ecosystems. Covers foundational information on the cycling of individual nutrients in soil, including the biotic and abiotic factors that influence these dynamics. Exposure to many contemporary issues around nutrient management and basic practical skills for managing nutrients.
Prereq: 3000, or Grad standing, or permission of instructor.

Autumn 2019 Semester
7520  Environmental Science and Law
G  3
This course introduces students to the laws and legal systems that address environmental issues, with an emphasis on the significance of science and technology. Interdisciplinary case-studies will complement the coursework.
Prereq: 4000, or Grad standing, or permission of instructor.

Entomology
ENTMLGY

Autumn 2019 Semester
1101  Insect Biology
U  4
Acquaints people with the incredible biological diversity represented by the largest group of living animals, the insects. Insects will be used to illustrate important biological principles and functions as well as the scientific process.
Prereq: Not open to students with credit for 1111, 3000, 4000, or 4600. GE nat sci bio course.

Environmental Engineering
ENVENG

Autumn 2019 Semester
5218  Measurement and Modeling of Climate Change
U  G  3
A study of the atmospheric boundary layer, its interaction with the land surface and vegetation in particular, and hand-on experience with micrometeorological and eddy-covariance instrumentation and data analysis.
Prereq: CivilEn 2060, and CSE 1221 or 1222 or Engr 1221, and enrollment in the CivilEn or EnvEng major program; or Grad standing; or permission of instructor.
### Autumn 2019 Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
<th>Description</th>
<th>Prereq</th>
</tr>
</thead>
<tbody>
<tr>
<td>5600</td>
<td>Food Chemistry</td>
<td>3</td>
<td>Describe the sources and compositions of food components. Develop a relationship between the composition of the individual food components and their chemical and physical properties. Understanding the chemistry of food components during processing and storage.</td>
<td>Prereq: 2400 and Chem 2510, or Grad standing. Prereq or concur: Biochem 4511.</td>
</tr>
<tr>
<td>5730</td>
<td>Technical Problem Solving</td>
<td>3</td>
<td>Analysis of technical problems in food science; fostering creative thinking to the approach and solution of problems; preparation and oral presentation of paper.</td>
<td>Prereq: 5600 or 5710, and 5536 or 4536, and 5400, 5410, 5420, 5430, 5450, or MeatSci 4510, and Sr standing; or Grad standing.</td>
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</table>

### French

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>1803.03</td>
<td>Global May Paris</td>
<td>3</td>
<td>This course is on the cultural history of the city of Paris. It takes place on a study abroad trip to Paris in May.</td>
</tr>
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### Industrial and Systems Engineering

<table>
<thead>
<tr>
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<th>Prereq</th>
</tr>
</thead>
<tbody>
<tr>
<td>4999</td>
<td>Undergraduate Research for Thesis</td>
<td>1 - 4</td>
<td>Opportunity for undergraduates to conduct research in Integrated Systems Engineering.</td>
<td>Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 4 completions.</td>
</tr>
</tbody>
</table>

### Law

<table>
<thead>
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</thead>
<tbody>
<tr>
<td>8896.60</td>
<td>Sem: Transitional Justice</td>
<td>2</td>
<td>This seminar will explore the diverse range of transitional justice mechanisms in post-conflict societies and compare and analyze them in view of various demands for justice.</td>
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</tbody>
</table>

### Mathematics

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<tbody>
<tr>
<td>3345</td>
<td>Foundations of Higher Mathematics</td>
<td>3</td>
<td>Introduction to logic, proof techniques, set theory, number theory, real numbers.</td>
<td>If Math, IMME, STAT, STEMED-PRE or STEMED-BS: Prereq: A grade of C- or above in 2153, 2162.xx, 2173, or 2182H. If CIS, CSE or ECE: Prereq: A grade of C- or above in CSE 2321 and a grade of C- or above in 1161.xx, 1172, 1181H, 1534, 1544, 1152, or 4181H.</td>
</tr>
</tbody>
</table>

### Optometry

<table>
<thead>
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<th>Prereq</th>
</tr>
</thead>
<tbody>
<tr>
<td>6450.02</td>
<td>Advanced Ophthalmic Dispensing</td>
<td>1 - 6</td>
<td>Ophthalmic Dispensing: Advanced clinical experience in ophthalmic design, dispensing, and dispensary management.</td>
<td>Prereq: 3rd yr standing in Optom. Repeatable to a maximum of 30 cr hrs or 8 completions.</td>
</tr>
</tbody>
</table>
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.
Prereq: 3rd yr standing in Optom.

Clinical experience in specialized phases of eyecare: practice-based care.
Prereq: 4th yr standing in Optom. Repeatable to a maximum of 30 cr hrs or 8 completions.

Focuses on planning and financial decision-making in public and nonprofit organizations. It provides a higher-
level understanding of government and nonprofit budgeting processes.

Explores qualitative decision-making methods specific to public affairs context using statistics, economics,
public budgeting, finance, policy, and modeling theories.
Repeatable to a maximum of 6 cr hrs.

This course will outline the fundamental sciences and their application in microbial risk modeling. Students will
engage in lectures and project-based learning culminating in a functioning microbial risk model.
Prereq: Grad level Stat course, or permission of instructor.

Integration of knowledge and practice; problem solving and discussion of social work practice issues, values,
and ethics. Taken concurrently with field practicum.

Students will write 10-minute plays as exploratory exercises, analyze contemporary plays to deepen familiarity
with the theatrical form, and, as a final project, write a one-act play which will receive a staged reading. Seminar
and Workshop.

Course withdrawn, added, or updated.

Campus: COL  LMA

Students may add, withdraw, or make changes to their schedule until this date.

Computer Science and Engineering

CSE

Friday, March 01, 2019
Autumn 2019 Semester
4254 Programming in Lisp
U 1
Lisp programming for students well-versed in programming with another language.
Prereq: 2231. Not open to students with credit for 459.31. This course is graded S/U.

Autumn 2019 Semester
4255 Programming in Perl
U 1
Syntax and pragmatics of Perl programming; Perl mechanisms for text and file processing, scripting, client-server programming, etc.; powerful ways to combine these mechanisms.
Prereq: 2231, 2331, and 2421. Not open to students with credit for 459.51. This course is graded S/U. Cross-listed in ISE 5811.

Nursing

Autumn 2019 Semester
7200 Adult Acute Care Nurse Practitioner Skills
G 2
Development of essential skills for assessment, monitoring and management of acutely and critically ill adults.
Prereq: 7450 (704) and 7410 (705). Not open to students with credit for 835.